aws

API Reference

# Amazon Elastic Compute Cloud

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# Amazon Elastic Compute Cloud: API Reference

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# Welcome

This is the *Amazon EC2 API Reference*. It provides descriptions, API request parameters, and the XML response for each of the Amazon EC2 Query API actions. Note that the Amazon EC2 API includes actions for Amazon EC2 plus additional services, such as Amazon EBS and Amazon VPC.

**Learn more**

- To learn about using the Query API, see Using the API for Amazon EC2.
- To learn about the permissions required to call an Amazon EC2 API action, see Actions, resources, and condition keys for Amazon EC2.
- To get the list of API actions by service and resource, see Actions by service.
- To get the alphabetical list of API actions, see Actions.
- To get descriptions of the API error codes, see Error codes for the Amazon EC2 API.

Alternatively, use one of the following methods to access the Amazon EC2 API, instead of using the Query API directly:

- AWS CLI Command Reference - ec2 commands
- AWS CloudFormation - Amazon EC2 resource type reference
- AWS Tools for PowerShell Cmdlet Reference - Amazon EC2 cmdlets
- AWS SDKs

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# Actions

The following actions are supported:

- AcceptAddressTransfer
- AcceptCapacityReservationBillingOwnership
- AcceptReservedInstancesExchangeQuote
- AcceptTransitGatewayClientVpnAttachment
- AcceptTransitGatewayMulticastDomainAssociations
- AcceptTransitGatewayPeeringAttachment
- AcceptTransitGatewayVpcAttachment
- AcceptVpcEndpointConnections
- AcceptVpcPeeringConnection
- AdvertiseByoipCidr
- AllocateAddress
- AllocateHosts
- AllocateIpamPoolCidr
- ApplySecurityGroupsToClientVpnTargetNetwork
- AssignIpv6Addresses
- AssignPrivateIpAddresses
- AssignPrivateNatGatewayAddress
- AssociateAddress
- AssociateCapacityReservationBillingOwner
- AssociateClientVpnTargetNetwork
- AssociateDhcpOptions
- AssociateEnclaveCertificateIamRole
- AssociateIamInstanceProfile
- AssociateInstanceEventWindow
- AssociateIpamByoasn
- AssociateIpamResourceDiscovery
- AssociateNatGatewayAddress

- AssociateRouteServer
- AssociateRouteTable
- AssociateSecurityGroupVpc
- AssociateSubnetCidrBlock
- AssociateTransitGatewayMulticastDomain
- AssociateTransitGatewayPolicyTable
- AssociateTransitGatewayRouteTable
- AssociateTrunkInterface
- AssociateVpcCidrBlock
- AttachClassicLinkVpc
- AttachImageWatermark
- AttachInternetGateway
- AttachNetworkInterface
- AttachVerifiedAccessTrustProvider
- AttachVolume
- AttachVpnGateway
- AuthorizeClientVpnIngress
- AuthorizeSecurityGroupEgress
- AuthorizeSecurityGroupIngress
- BundleInstance
- CancelBundleTask
- CancelCapacityReservation
- CancelCapacityReservationFleets
- CancelConversionTask
- CancelDeclarativePoliciesReport
- CancelExportTask
- CancelImageLaunchPermission
- CancelImportTask
- CancelReservedInstancesListing
- CancelSpotFleetRequests

- CancelSpotInstanceRequests
- ConfirmProductInstance
- CopyFpgaImage
- CopyImage
- CopySnapshot
- CopyVolumes
- CreateCapacityManagerDataExport
- CreateCapacityReservation
- CreateCapacityReservationBySplitting
- CreateCapacityReservationCancellationQuote
- CreateCapacityReservationFleet
- CreateCarrierGateway
- CreateClientVpnEndpoint
- CreateClientVpnRoute
- CreateCoipCidr
- CreateCoipPool
- CreateCustomerGateway
- CreateDefaultSubnet
- CreateDefaultVpc
- CreateDelegateMacVolumeOwnershipTask
- CreateDhcpOptions
- CreateEgressOnlyInternetGateway
- CreateFleet
- CreateFlowLogs
- CreateFpgaImage
- CreateImage
- CreateImageUsageReport
- CreateInstanceConnectEndpoint
- CreateInstanceEventWindow
- CreateInstanceExportTask

- CreateInternetGateway
- CreateInterruptibleCapacityReservationAllocation
- CreateIpam
- CreateIpamExternalResourceVerificationToken
- CreateIpamPolicy
- CreateIpamPool
- CreateIpamPrefixListResolver
- CreateIpamPrefixListResolverTarget
- CreateIpamResourceDiscovery
- CreateIpamScope
- CreateKeyPair
- CreateLaunchTemplate
- CreateLaunchTemplateVersion
- CreateLocalGatewayRoute
- CreateLocalGatewayRouteTable
- CreateLocalGatewayRouteTableVirtualInterfaceGroupAssociation
- CreateLocalGatewayRouteTableVpcAssociation
- CreateLocalGatewayVirtualInterface
- CreateLocalGatewayVirtualInterfaceGroup
- CreateMacSystemIntegrityProtectionModificationTask
- CreateManagedPrefixList
- CreateNatGateway
- CreateNetworkAcl
- CreateNetworkAclEntry
- CreateNetworkInsightsAccessScope
- CreateNetworkInsightsPath
- CreateNetworkInterface
- CreateNetworkInterfacePermission
- CreatePlacementGroup
- CreatePublicIpv4Pool

- CreateReplaceRootVolumeTask
- CreateReservedInstancesListing
- CreateRestoreImageTask
- CreateRoute
- CreateRouteServer
- CreateRouteServerEndpoint
- CreateRouteServerPeer
- CreateRouteTable
- CreateSecondaryNetwork
- CreateSecondarySubnet
- CreateSecurityGroup
- CreateSnapshot
- CreateSnapshots
- CreateSpotDatafeedSubscription
- CreateStoreImageTask
- CreateSubnet
- CreateSubnetCidrReservation
- CreateTags
- CreateTrafficMirrorFilter
- CreateTrafficMirrorFilterRule
- CreateTrafficMirrorSession
- CreateTrafficMirrorTarget
- CreateTransitGateway
- CreateTransitGatewayConnect
- CreateTransitGatewayConnectPeer
- CreateTransitGatewayMeteringPolicy
- CreateTransitGatewayMeteringPolicyEntry
- CreateTransitGatewayMulticastDomain
- CreateTransitGatewayPeeringAttachment
- CreateTransitGatewayPolicyTable

- CreateTransitGatewayPrefixListReference
- CreateTransitGatewayRoute
- CreateTransitGatewayRouteTable
- CreateTransitGatewayRouteTableAnnouncement
- CreateTransitGatewayVpcAttachment
- CreateVerifiedAccessEndpoint
- CreateVerifiedAccessGroup
- CreateVerifiedAccessInstance
- CreateVerifiedAccessTrustProvider
- CreateVolume
- CreateVpc
- CreateVpcBlockPublicAccessExclusion
- CreateVpcEncryptionControl
- CreateVpcEndpoint
- CreateVpcEndpointConnectionNotification
- CreateVpcEndpointServiceConfiguration
- CreateVpcPeeringConnection
- CreateVpnConcentrator
- CreateVpnConnection
- CreateVpnConnectionRoute
- CreateVpnGateway
- DeleteCapacityManagerDataExport
- DeleteCarrierGateway
- DeleteClientVpnEndpoint
- DeleteClientVpnRoute
- DeleteCoipCidr
- DeleteCoipPool
- DeleteCustomerGateway
- DeleteDhcpOptions
- DeleteEgressOnlyInternetGateway

- DeleteFleets
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- DeleteInstanceEventWindow
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- DeleteLocalGatewayVirtualInterface
- DeleteLocalGatewayVirtualInterfaceGroup
- DeleteManagedPrefixList
- DeleteNatGateway
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- DeleteNetworkInsightsAccessScopeAnalysis

- DeleteNetworkInsightsAnalysis
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- DeleteSubnetCidrReservation
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- DeleteTrafficMirrorTarget
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- GetIpamPrefixListResolverVersionEntries

- GetIpamPrefixListResolverVersions
- GetIpamResourceCidrs
- GetLaunchTemplateData
- GetManagedPrefixListAssociations
- GetManagedPrefixListEntries
- GetManagedResourceVisibility
- GetNetworkInsightsAccessScopeAnalysisFindings
- GetNetworkInsightsAccessScopeContent
- GetPasswordData
- GetReservedInstancesExchangeQuote
- GetRouteServerAssociations
- GetRouteServerPropagations
- GetRouteServerRoutingDatabase
- GetSecurityGroupsForVpc
- GetSerialConsoleAccessStatus
- GetSnapshotBlockPublicAccessState
- GetSpotPlacementScores
- GetSubnetCidrReservations
- GetTransitGatewayAttachmentPropagations
- GetTransitGatewayMeteringPolicyEntries
- GetTransitGatewayMulticastDomainAssociations
- GetTransitGatewayPolicyTableAssociations
- GetTransitGatewayPolicyTableEntries
- GetTransitGatewayPrefixListReferences
- GetTransitGatewayRouteTableAssociations
- GetTransitGatewayRouteTablePropagations
- GetVerifiedAccessEndpointPolicy
- GetVerifiedAccessEndpointTargets
- GetVerifiedAccessGroupPolicy
- GetVpcResourcesBlockingEncryptionEnforcement

- GetVpnConnectionDeviceSampleConfiguration
- GetVpnConnectionDeviceTypes
- GetVpnTunnelReplacementStatus
- ImportClientVpnClientCertificateRevocationList
- ImportImage
- ImportInstance
- ImportKeyPair
- ImportSnapshot
- ImportVolume
- ListImagesInRecycleBin
- ListSnapshotsInRecycleBin
- ListVolumesInRecycleBin
- LockSnapshot
- ModifyAddressAttribute
- ModifyAvailabilityZoneGroup
- ModifyCapacityReservation
- ModifyCapacityReservationFleet
- ModifyClientVpnEndpoint
- ModifyDefaultCreditSpecification
- ModifyEbsDefaultKmsKeyId
- ModifyFleet
- ModifyFpgaImageAttribute
- ModifyHosts
- ModifyIdentityIdFormat
- ModifyIdFormat
- ModifyImageAttribute
- ModifyInstanceAttribute
- ModifyInstanceCapacityReservationAttributes
- ModifyInstanceConnectEndpoint
- ModifyInstanceCpuOptions

- ModifyInstanceCreditSpecification
- ModifyInstanceEventStartTime
- ModifyInstanceEventWindow
- ModifyInstanceMaintenanceOptions
- ModifyInstanceMetadataDefaults
- ModifyInstanceMetadataOptions
- ModifyInstanceNetworkPerformanceOptions
- ModifyInstancePlacement
- ModifyIpam
- ModifyIpamPolicyAllocationRules
- ModifyIpamPool
- ModifyIpamPoolAllocation
- ModifyIpamPrefixListResolver
- ModifyIpamPrefixListResolverTarget
- ModifyIpamResourceCidr
- ModifyIpamResourceDiscovery
- ModifyIpamScope
- ModifyLaunchTemplate
- ModifyLocalGatewayRoute
- ModifyManagedPrefixList
- ModifyManagedResourceVisibility
- ModifyNetworkInterfaceAttribute
- ModifyPrivateDnsNameOptions
- ModifyPublicIpDnsNameOptions
- ModifyReservedInstances
- ModifyRouteServer
- ModifySecurityGroupRules
- ModifySnapshotAttribute
- ModifySnapshotTier
- ModifySpotFleetRequest

- ModifySubnetAttribute
- ModifyTrafficMirrorFilterNetworkServices
- ModifyTrafficMirrorFilterRule
- ModifyTrafficMirrorSession
- ModifyTransitGateway
- ModifyTransitGatewayMeteringPolicy
- ModifyTransitGatewayPrefixListReference
- ModifyTransitGatewayVpcAttachment
- ModifyVerifiedAccessEndpoint
- ModifyVerifiedAccessEndpointPolicy
- ModifyVerifiedAccessGroup
- ModifyVerifiedAccessGroupPolicy
- ModifyVerifiedAccessInstance
- ModifyVerifiedAccessInstanceLoggingConfiguration
- ModifyVerifiedAccessTrustProvider
- ModifyVolume
- ModifyVolumeAttribute
- ModifyVpcAttribute
- ModifyVpcBlockPublicAccessExclusion
- ModifyVpcBlockPublicAccessOptions
- ModifyVpcEncryptionControl
- ModifyVpcEndpoint
- ModifyVpcEndpointConnectionNotification
- ModifyVpcEndpointServiceConfiguration
- ModifyVpcEndpointServicePayerResponsibility
- ModifyVpcEndpointServicePermissions
- ModifyVpcPeeringConnectionOptions
- ModifyVpcTenancy
- ModifyVpnConnection
- ModifyVpnConnectionOptions

- ModifyVpnTunnelCertificate
- ModifyVpnTunnelOptions
- MonitorInstances
- MoveAddressToVpc
- MoveByoipCidrToIpam
- MoveCapacityReservationInstances
- ProvisionByoipCidr
- ProvisionIpamByoasn
- ProvisionIpamPoolCidr
- ProvisionPublicIpv4PoolCidr
- PurchaseCapacityBlock
- PurchaseCapacityBlockExtension
- PurchaseHostReservation
- PurchaseReservedInstancesOffering
- PurchaseScheduledInstances
- RebootInstances
- RegisterImage
- RegisterInstanceEventNotificationAttributes
- RegisterTransitGatewayMulticastGroupMembers
- RegisterTransitGatewayMulticastGroupSources
- RejectCapacityReservationBillingOwnership
- RejectTransitGatewayClientVpnAttachment
- RejectTransitGatewayMulticastDomainAssociations
- RejectTransitGatewayPeeringAttachment
- RejectTransitGatewayVpcAttachment
- RejectVpcEndpointConnections
- RejectVpcPeeringConnection
- ReleaseAddress
- ReleaseHosts
- ReleaseIpamPoolAllocation

- ReplaceIamInstanceProfileAssociation
- ReplaceImageCriteriaInAllowedImagesSettings
- ReplaceNetworkAclAssociation
- ReplaceNetworkAclEntry
- ReplaceRoute
- ReplaceRouteTableAssociation
- ReplaceTransitGatewayRoute
- ReplaceVpnTunnel
- ReportInstanceStatus
- RequestSpotFleet
- RequestSpotInstances
- ResetAddressAttribute
- ResetEbsDefaultKmsKeyId
- ResetFpgaImageAttribute
- ResetImageAttribute
- ResetInstanceAttribute
- ResetNetworkInterfaceAttribute
- ResetSnapshotAttribute
- RestoreAddressToClassic
- RestoreImageFromRecycleBin
- RestoreManagedPrefixListVersion
- RestoreSnapshotFromRecycleBin
- RestoreSnapshotTier
- RestoreVolumeFromRecycleBin
- RevokeClientVpnIngress
- RevokeSecurityGroupEgress
- RevokeSecurityGroupIngress
- RunInstances
- RunScheduledInstances
- SearchLocalGatewayRoutes

- SearchTransitGatewayMulticastGroups
- SearchTransitGatewayRoutes
- SendDiagnosticInterrupt
- StartDeclarativePoliciesReport
- StartInstances
- StartNetworkInsightsAccessScopeAnalysis
- StartNetworkInsightsAnalysis
- StartVpcEndpointServicePrivateDnsVerification
- StopInstances
- TerminateClientVpnConnections
- TerminateInstances
- UnassignIpv6Addresses
- UnassignPrivateIpAddresses
- UnassignPrivateNatGatewayAddress
- UnlockSnapshot
- UnmonitorInstances
- UpdateCapacityManagerMonitoredTagKeys
- UpdateCapacityManagerOrganizationsAccess
- UpdateInterruptibleCapacityReservationAllocation
- UpdateSecurityGroupRuleDescriptionsEgress
- UpdateSecurityGroupRuleDescriptionsIngress
- WithdrawByoipCidr

# AcceptAddressTransfer

Accepts an Elastic IP address transfer. For more information, see Accept a transferred Elastic IP address in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Address**

The Elastic IP address you are accepting for transfer.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

`tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**addressTransfer**

An Elastic IP address transfer.

Type: AddressTransfer object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AcceptCapacityReservationBillingOwnership

Accepts a request to assign billing of the available capacity of a shared Capacity Reservation to your account. For more information, see Billing assignment for shared Amazon EC2 Capacity Reservations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId**

The ID of the Capacity Reservation for which to accept the request.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AcceptReservedInstancesExchangeQuote

Accepts the Convertible Reserved Instance exchange quote described in the GetReservedInstancesExchangeQuote call.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ReservedInstanceId.N**

The IDs of the Convertible Reserved Instances to exchange for another Convertible Reserved Instance of the same or higher value.

Type: Array of strings

Required: Yes

**TargetConfiguration.N**

The configuration of the target Convertible Reserved Instance to exchange for your current Convertible Reserved Instances.

Type: Array of TargetConfigurationRequest objects

Required: No

## Response Elements

The following elements are returned by the service.

**exchangeId**

The ID of the successful exchange.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AcceptTransitGatewayClientVpnAttachment

Accepts a Transit Gateway attachment request for a Client VPN endpoint. The Transit Gateway owner must accept the attachment request before the Client VPN endpoint can route traffic through the Transit Gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the Transit Gateway attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayClientVpnAttachment**

Information about the Transit Gateway Client VPN attachment.

Type: TransitGatewayClientVpnAttachment object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example accepts a Transit Gateway Client VPN attachment.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AcceptTransitGatewayClientVpnAttachment
&TransitGatewayAttachmentId=tgw-attach-0a34fe6b4fEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<AcceptTransitGatewayClientVpnAttachmentResult xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>5ef84b7f-505e-4e39-80cd-a11dbEXAMPLE</requestId>
    <transitGatewayClientVpnAttachment>
        <transitGatewayAttachmentId>tgw-attach-0a34fe6b4fEXAMPLE</
transitGatewayAttachmentId>
        <transitGatewayId>tgw-0262a0e521EXAMPLE</transitGatewayId>
        <clientVpnEndpointId>cvpn-endpoint-00c5d11fc4EXAMPLE</clientVpnEndpointId>
        <state>pending</state>
    </transitGatewayClientVpnAttachment>
</AcceptTransitGatewayClientVpnAttachmentResult>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AcceptTransitGatewayMulticastDomainAssociations

Accepts a request to associate subnets with a transit gateway multicast domain.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SubnetIds.N**

The IDs of the subnets to associate with the transit gateway multicast domain.

Type: Array of strings

Required: No

**TransitGatewayAttachmentId**

The ID of the transit gateway attachment.

Type: String

Required: No

**TransitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**associations**

Information about the multicast domain associations.

Type: TransitGatewayMulticastDomainAssociations object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AcceptTransitGatewayPeeringAttachment

Accepts a transit gateway peering attachment request. The peering attachment must be in the `pendingAcceptance` state.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the transit gateway attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayPeeringAttachment**

The transit gateway peering attachment.

Type: TransitGatewayPeeringAttachment object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example accepts the specified transit gateway peering attachment by specifying its attachment ID.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AcceptTransitGatewayPeeringAttachment
&TransitGatewayAttachmentId=tgw-attach-12345678901abcd12
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AcceptTransitGatewayVpcAttachment

Accepts a request to attach a VPC to a transit gateway.

The VPC attachment must be in the `pendingAcceptance` state. Use DescribeTransitGatewayVpcAttachments to view your pending VPC attachment requests. Use RejectTransitGatewayVpcAttachment to reject a VPC attachment request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayVpcAttachment**

The VPC attachment.

Type: TransitGatewayVpcAttachment object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AcceptVpcEndpointConnections

Accepts connection requests to your VPC endpoint service.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ServiceId**

The ID of the VPC endpoint service.

Type: String

Required: Yes

**VpcEndpointId.N**

The IDs of the interface VPC endpoints.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**unsuccessful**

Information about the interface endpoints that were not accepted, if applicable.

Type: Array of UnsuccessfulItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example accepts the request for interface endpoint `vpce-0c1308d7312217123` to connect to your service `vpce-svc-abc5ebb7d9579a2b3`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AcceptVpcEndpointConnections
&ServiceId=vpce-svc-abc5ebb7d9579a2b3
&VpcEndpointId.1=vpce-0c1308d7312217123
&AUTHPARAMS
```

#### Sample Response

```
<AcceptVpcEndpointConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>986a2264-8a40-4da8-8f11-e8aaexample</requestId>
    <unsuccessful/>
</AcceptVpcEndpointConnectionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AcceptVpcPeeringConnection

Accept a VPC peering connection request. To accept a request, the VPC peering connection must be in the `pending-acceptance` state, and you must be the owner of the peer VPC. Use DescribeVpcPeeringConnections to view your outstanding VPC peering connection requests.

For an inter-Region VPC peering connection request, you must accept the VPC peering connection in the Region of the accepter VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcPeeringConnectionId**

The ID of the VPC peering connection. You must specify this parameter in the request.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpcPeeringConnection**

Information about the VPC peering connection.

Type: VpcPeeringConnection object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example accepts the specified VPC peering connection request.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AcceptVpcPeeringConnection
&VpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<AcceptVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <vpcPeeringConnection>
   <vpcPeeringConnectionId>pcx-1a2b3c4d</vpcPeeringConnectionId>
   <requesterVpcInfo>
     <ownerId>123456789012</ownerId>
     <vpcId>vpc-1a2b3c4d</vpcId>
     <cidrBlock>10.0.0.0/28</cidrBlock>
   </requesterVpcInfo>
   <accepterVpcInfo>
     <ownerId>777788889999</ownerId>
     <vpcId>vpc-111aaa22</vpcId>
     <cidrBlock>10.0.1.0/28</cidrBlock>
     <peeringOptions>
       <allowEgressFromLocalClassicLinkToRemoteVpc>false</
allowEgressFromLocalClassicLinkToRemoteVpc>
       <allowEgressFromLocalVpcToRemoteClassicLink>false</
allowEgressFromLocalVpcToRemoteClassicLink>
```

```
      <allowDnsResolutionFromRemoteVpc>false</allowDnsResolutionFromRemoteVpc>
    </peeringOptions>
  </accepterVpcInfo>
  <status>
    <code>active</code>
    <message>Active</message>
   </status>
  <tagSet/>
 </vpcPeeringConnection>
</AcceptVpcPeeringConnectionResponse>"
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AdvertiseByoipCidr

Advertises an IPv4 or IPv6 address range that is provisioned for use with your AWS resources through bring your own IP addresses (BYOIP).

You can perform this operation at most once every 10 seconds, even if you specify different address ranges each time.

We recommend that you stop advertising the BYOIP CIDR from other locations when you advertise it from AWS. To minimize down time, you can configure your AWS resources to use an address from a BYOIP CIDR before it is advertised, and then simultaneously stop advertising it from the current location and start advertising it through AWS.

It can take a few minutes before traffic to the specified addresses starts routing to AWS because of BGP propagation delays.

To stop advertising the BYOIP CIDR, use WithdrawByoipCidr.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Asn**

The public 2-byte or 4-byte ASN that you want to advertise.

Type: String

Required: No

**Cidr**

The address range, in CIDR notation. This must be the exact range that you provisioned. You can't advertise only a portion of the provisioned range.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkBorderGroup**

If you have Local Zones enabled, you can choose a network border group for Local Zones when you provision and advertise a BYOIPv4 CIDR. Choose the network border group carefully as the EIP and the AWS resource it is associated with must reside in the same network border group.

You can provision BYOIP address ranges to and advertise them in the following Local Zone network border groups:

- us-east-1-dfw-2
- us-west-2-lax-1
- us-west-2-phx-2

> **Note**
>
> You cannot provision or advertise BYOIPv6 address ranges in Local Zones at this time.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**byoipCidr**

Information about the address range.

Type: ByoipCidr object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AllocateAddress

Allocates an Elastic IP address to your AWS account. After you allocate the Elastic IP address you can associate it with an instance or network interface. After you release an Elastic IP address, it is released to the IP address pool and can be allocated to a different AWS account.

You can allocate an Elastic IP address from one of the following address pools:

- Amazon's pool of IPv4 addresses
- Public IPv4 address range that you own and bring to your AWS account using Bring Your Own IP Addresses (BYOIP)
- An IPv4 IPAM pool with an Amazon-provided or BYOIP public IPv4 address range
- IPv4 addresses from your on-premises network made available for use with an Outpost using a customer-owned IP address pool (CoIP pool)

For more information, see Elastic IP Addresses in the *Amazon EC2 User Guide*.

If you release an Elastic IP address, you might be able to recover it. You cannot recover an Elastic IP address that you released after it is allocated to another AWS account. To attempt to recover an Elastic IP address that you released, specify it in this operation.

You can allocate a carrier IP address which is a public IP address from a telecommunication carrier, to a network interface which resides in a subnet in a Wavelength Zone (for example an EC2 instance).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Address**

The Elastic IP address to recover or an IPv4 address from an address pool.

Type: String

Required: No

**CustomerOwnedIpv4Pool**

The ID of a customer-owned address pool. Use this parameter to let Amazon EC2 select an address from the address pool. Alternatively, specify a specific address from the address pool.

Type: String

Required: No

**Domain**

The network (`vpc`).

Type: String

Valid Values: `vpc | standard`

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPoolId**

The ID of an IPAM pool which has an Amazon-provided or BYOIP public IPv4 CIDR provisioned to it. For more information, see Allocate sequential Elastic IP addresses from an IPAM pool in the *Amazon VPC IPAM User Guide*.

Type: String

Required: No

**NetworkBorderGroup**

A unique set of Availability Zones, Local Zones, or Wavelength Zones from which AWS advertises IP addresses. Use this parameter to limit the IP address to this location. IP addresses cannot move between network border groups.

Use DescribeAvailabilityZones to view the network border groups.

Type: String

Required: No

**PublicIpv4Pool**

The ID of an address pool that you own. Use this parameter to let Amazon EC2 select an address from the address pool. To specify a specific address from the address pool, use the `Address` parameter instead.

Type: String

Required: No

**TagSpecification.N**

The tags to assign to the Elastic IP address.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**allocationId**

The ID that represents the allocation of the Elastic IP address.

Type: String

**carrierIp**

The carrier IP address. Available only for network interfaces that reside in a subnet in a Wavelength Zone.

Type: String

**customerOwnedIp**

The customer-owned IP address.

Type: String

**customerOwnedIpv4Pool**

The ID of the customer-owned address pool.

Type: String

**domain**

The network (`vpc`).

Type: String

Valid Values: `vpc | standard`

**networkBorderGroup**

The set of Availability Zones, Local Zones, or Wavelength Zones from which AWS advertises IP addresses.

Type: String

**publicIp**

The Amazon-owned IP address. Not available when using an address pool that you own.

Type: String

**publicIpv4Pool**

The ID of an address pool that you own.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example for Allocation

This example request allocates an Elastic IP address.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateAddress
&Domain=vpc
&AUTHPARAMS
```

### Sample Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <publicIp>198.51.100.1</publicIp>
   <domain>vpc</domain>
   <allocationId>eipalloc-5723d13e</allocationId>
</AllocateAddressResponse>
```

## Example for Recovery

This example request shows how to recover an Elastic IP address that you previously released.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateAddress
&Domain=vpc
&Address=203.0.113.3
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AllocateHosts

Allocates a Dedicated Host to your account. At a minimum, specify the supported instance type or instance family, the Availability Zone in which to allocate the host, and the number of hosts to allocate.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssetId.N**

The IDs of the Outpost hardware assets on which to allocate the Dedicated Hosts. Targeting specific hardware assets on an Outpost can help to minimize latency between your workloads. This parameter is supported only if you specify **OutpostArn**. If you are allocating the Dedicated Hosts in a Region, omit this parameter.

- If you specify this parameter, you can omit **Quantity**. In this case, Amazon EC2 allocates a Dedicated Host on each specified hardware asset.
- If you specify both **AssetIds** and **Quantity**, then the value for **Quantity** must be equal to the number of asset IDs specified.

Type: Array of strings

Required: No

**AutoPlacement**

Indicates whether the host accepts any untargeted instance launches that match its instance type configuration, or if it only accepts Host tenancy instance launches that specify its unique host ID. For more information, see Understanding auto-placement and affinity in the *Amazon EC2 User Guide*.

Default: `off`

Type: String

Valid Values: `on` | `off`

Required: No

**AvailabilityZone**

The Availability Zone in which to allocate the Dedicated Host.

Type: String

Required: No

**AvailabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring Idempotency.

Type: String

Required: No

**HostMaintenance**

Indicates whether to enable or disable host maintenance for the Dedicated Host. For more information, see Host maintenance in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `on` | `off`

Required: No

**HostRecovery**

Indicates whether to enable or disable host recovery for the Dedicated Host. Host recovery is disabled by default. For more information, see Host recovery in the *Amazon EC2 User Guide*.

Default: `off`

Type: String

Valid Values: `on` | `off`

Required: No

**InstanceFamily**

Specifies the instance family to be supported by the Dedicated Hosts. If you specify an instance family, the Dedicated Hosts support multiple instance types within that instance family.

If you want the Dedicated Hosts to support a specific instance type only, omit this parameter and specify **InstanceType** instead. You cannot specify **InstanceFamily** and **InstanceType** in the same request.

Type: String

Required: No

**InstanceType**

Specifies the instance type to be supported by the Dedicated Hosts. If you specify an instance type, the Dedicated Hosts support instances of the specified instance type only.

If you want the Dedicated Hosts to support multiple instance types in a specific instance family, omit this parameter and specify **InstanceFamily** instead. You cannot specify **InstanceType** and **InstanceFamily** in the same request.

Type: String

Required: No

**OutpostArn**

The Amazon Resource Name (ARN) of the AWS Outpost on which to allocate the Dedicated Host. If you specify **OutpostArn**, you can optionally specify **AssetIds**.

If you are allocating the Dedicated Host in a Region, omit this parameter.

Type: String

Required: No

**Quantity**

The number of Dedicated Hosts to allocate to your account with these parameters. If you are allocating the Dedicated Hosts on an Outpost, and you specify **AssetIds**, you can omit this parameter. In this case, Amazon EC2 allocates a Dedicated Host on each specified hardware asset. If you specify both **AssetIds** and **Quantity**, then the value that you specify for **Quantity** must be equal to the number of asset IDs specified.

Type: Integer

Required: No

**TagSpecification.N**

The tags to apply to the Dedicated Host during creation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**hostIdSet**

The ID of the allocated Dedicated Host. This is used to launch an instance onto a specific host.

Type: Array of strings

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example allocates a Dedicated Host to your account, on to which you can launch only `m5.large` instances.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
```

```
&InstanceType=m5.large
&Quantity=1
&AUTHPARAMS
```

### Sample Response

```
<AllocateHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <hostIdSet>
        <item>h-00548908djdsgfs</item>
    </hostIdSet>
</AllocateHostsResponse>
```

## Example 2

This example allocates a Dedicated Host to your account, on to which you can launch multiple instance types in the m5 instance family.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
&InstanceFamily=m5
&Quantity=1
&AUTHPARAMS
```

### Sample Response

```
<AllocateHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <hostIdSet>
        <item>h-00548908djdsgfs</item>
    </hostIdSet>
</AllocateHostsResponse>
```

## Example 3

This example allocates a Dedicated Host to your account with host recovery on.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateHosts
```

```
&AvailabilityZone=us-east-1b
&InstanceType=m5.large
&Quantity=1
&HostRecovery=on
&AUTHPARAMS
```

### Sample Response

```
<AllocateHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <hostIdSet>
        <item>h-00548908djdsgfs</item>
    </hostIdSet>
</AllocateHostsResponse>
```

## Example 4

This example allocates a Dedicated Host to your account with auto-placement `off`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
&InstanceFamily=m5
&Quantity=1
&AutoPlacement=off
&AUTHPARAMS
```

### Sample Response

```
<AllocateHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <hostIdSet>
        <item>h-00548908djdsgfs</item>
    </hostIdSet>
</AllocateHostsResponse>
```

## Example 5

This example allocates a Dedicated Host to your account, on to which you can launch only m5.2xlarge instances, and applies a tag with a key of `purpose` and a value of `production`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
&InstanceType=m5.2xlarge
&Quantity=1
&TagSpecification.1.ResourceType=dedicated-host
&TagSpecification.1.Tag.1.Key=purpose
&TagSpecification.1.Tag.1.Value=production
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AllocateIpamPoolCidr

Allocate a CIDR from an IPAM pool. The Region you use should be the IPAM pool locale. The locale is the AWS Region where this IPAM pool is available for allocations.

In IPAM, an allocation is a CIDR assignment from an IPAM pool to another IPAM pool or to a resource. For more information, see Allocate CIDRs in the *Amazon VPC IPAM User Guide*.

> **Note**
>
> This action creates an allocation with strong consistency. The returned CIDR will not overlap with any other allocations from the same pool.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllowedCidr.N**

Include a particular CIDR range that can be returned by the pool. Allowed CIDRs are only allowed if using netmask length for allocation.

Type: Array of strings

Required: No

**Cidr**

The CIDR you would like to allocate from the IPAM pool. Note the following:

- If there is no DefaultNetmaskLength allocation rule set on the pool, you must specify either the NetmaskLength or the CIDR.
- If the DefaultNetmaskLength allocation rule is set on the pool, you can specify either the NetmaskLength or the CIDR and the DefaultNetmaskLength allocation rule will be ignored.

Possible values: Any available IPv4 or IPv6 CIDR.

Type: String

Required: No

**ClientToken**

A unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the allocation.

Type: String

Required: No

**DisallowedCidr.N**

Exclude a particular CIDR range from being returned by the pool. Disallowed CIDRs are only allowed if using netmask length for allocation.

Type: Array of strings

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPoolId**

The ID of the IPAM pool from which you would like to allocate a CIDR.

Type: String

Required: Yes

**NetmaskLength**

The netmask length of the CIDR you would like to allocate from the IPAM pool. Note the following:

- If there is no DefaultNetmaskLength allocation rule set on the pool, you must specify either the NetmaskLength or the CIDR.
- If the DefaultNetmaskLength allocation rule is set on the pool, you can specify either the NetmaskLength or the CIDR and the DefaultNetmaskLength allocation rule will be ignored.

Possible netmask lengths for IPv4 addresses are 0 - 32. Possible netmask lengths for IPv6 addresses are 0 - 128.

Type: Integer

Required: No

**PreviewNextCidr**

A preview of the next available CIDR in a pool.

Type: Boolean

Required: No

**TagSpecification.N**

The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

If you specify tags, the request is authorized against the allocation resource in addition to the pool resource.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPoolAllocation**

Information about the allocation created.

Type: IpamPoolAllocation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ApplySecurityGroupsToClientVpnTargetNetwork

Applies a security group to the association between the target network and the Client VPN endpoint. This action replaces the existing security groups with the specified security groups.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SecurityGroupId.N**

The IDs of the security groups to apply to the associated target network. Up to 5 security groups can be applied to an associated target network.

Type: Array of strings

Required: Yes

**VpcId**

The ID of the VPC in which the associated target network is located.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**securityGroupIds**

The IDs of the applied security groups.

Type: Array of strings

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example applies a security group to a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ApplySecurityGroupsToClientVpnTargetNetwork
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&SecurityGroupId=sg-0618575f05EXAMPLE
&VpcId=vpc-3db97056EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<ApplySecurityGroupsToClientVpnTargetNetworkResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>5ef84b7f-505e-4e39-80cd-a11dbEXAMPLE</requestId>
    <securityGroupIds>
        <item>sg-0618575f05EXAMPLE</item>
    </securityGroupIds>
```

```
</ApplySecurityGroupsToClientVpnTargetNetworkResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssignIpv6Addresses

Assigns the specified IPv6 addresses to the specified network interface. You can specify specific IPv6 addresses, or you can specify the number of IPv6 addresses to be automatically assigned from the subnet's IPv6 CIDR block range. You can assign as many IPv6 addresses to a network interface as you can assign private IPv4 addresses, and the limit varies by instance type.

You must specify either the IPv6 addresses or the IPv6 address count in the request.

You can optionally use Prefix Delegation on the network interface. You must specify either the IPV6 Prefix Delegation prefixes, or the IPv6 Prefix Delegation count. For information, see Assigning prefixes to network interfaces in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Ipv6AddressCount**

The number of additional IPv6 addresses to assign to the network interface. The specified number of IPv6 addresses are assigned in addition to the existing IPv6 addresses that are already assigned to the network interface. Amazon EC2 automatically selects the IPv6 addresses from the subnet range. You can't use this option if specifying specific IPv6 addresses.

Type: Integer

Required: No

**Ipv6Addresses.N**

The IPv6 addresses to be assigned to the network interface. You can't use this option if you're specifying a number of IPv6 addresses.

Type: Array of strings

Required: No

**Ipv6Prefix.N**

One or more IPv6 prefixes assigned to the network interface. You can't use this option if you use the `Ipv6PrefixCount` option.

Type: Array of strings

Required: No

**Ipv6PrefixCount**

The number of IPv6 prefixes that AWS automatically assigns to the network interface. You cannot use this option if you use the `Ipv6Prefixes` option.

Type: Integer

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**assignedIpv6Addresses**

The new IPv6 addresses assigned to the network interface. Existing IPv6 addresses that were assigned to the network interface before the request are not included.

Type: Array of strings

**assignedIpv6PrefixSet**

The IPv6 prefixes that are assigned to the network interface.

Type: Array of strings

**networkInterfaceId**

The ID of the network interface.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example assigns two IPv6 addresses (2001:db8:1234:1a00::123 and 2001:db8:1234:1a00::456) to the specified network interface.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssignIpv6Addresses
&NetworkInterfaceId=eni-d83388b1
&Ipv6Addresses.1=2001:db8:1234:1a00::123
&Ipv6Addresses.2=2001:db8:1234:1a00::456
&AUTHPARAMS
```

#### Sample Response

```
<AssignIpv6AddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>c36d17eb-a0ba-4d38-8727-example</requestId>
    <networkInterfaceId>eni-d83388b1</networkInterfaceId>
    <assignedIpv6Addresses>
        <item>2001:db8:1234:1a00::123</item>
        <item>2001:db8:1234:1a00::456</item>
    </assignedIpv6Addresses>
</AssignIpv6AddressesResponse>
```

### Example 2

This example assigns two IPv6 addresses to the specified network interface. Amazon EC2 automatically assigns the addresses from the available IPv6 addresses within the subnet's IPv6 CIDR block range.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AssignIpv6Addresses
&NetworkInterfaceId=eni-d83388b1
&Ipv6AddressCount=2
&AUTHPARAMS
```

### Sample Response

```
<AssignIpv6AddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>c36d17eb-a0ba-4d38-8727-example</requestId>
    <networkInterfaceId>eni-d83388b1</networkInterfaceId>
    <assignedIpv6Addresses>
        <item>2001:db8:1234:1a00:3304:8879:34cf:4071</item>
        <item>2002:db8:1234:1a00:9691:9503:25ad:1761</item>
    </assignedIpv6Addresses>
</AssignIpv6AddressesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssignPrivateIpAddresses

Assigns the specified secondary private IP addresses to the specified network interface.

You can specify specific secondary IP addresses, or you can specify the number of secondary IP addresses to be automatically assigned from the subnet's CIDR block range. The number of secondary IP addresses that you can assign to an instance varies by instance type. For more information about Elastic IP addresses, see Elastic IP Addresses in the *Amazon EC2 User Guide*.

When you move a secondary private IP address to another network interface, any Elastic IP address that is associated with the IP address is also moved.

Remapping an IP address is an asynchronous operation. When you move an IP address from one network interface to another, check `network/interfaces/macs/mac/local-ipv4s` in the instance metadata to confirm that the remapping is complete.

You must specify either the IP addresses or the IP address count in the request.

You can optionally use Prefix Delegation on the network interface. You must specify either the IPv4 Prefix Delegation prefixes, or the IPv4 Prefix Delegation count. For information, see Assigning prefixes to network interfaces in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllowReassignment**

Indicates whether to allow an IP address that is already assigned to another network interface or instance to be reassigned to the specified network interface.

Type: Boolean

Required: No

**Ipv4Prefix.N**

One or more IPv4 prefixes assigned to the network interface. You can't use this option if you use the `Ipv4PrefixCount` option.

Type: Array of strings

Required: No

**Ipv4PrefixCount**

The number of IPv4 prefixes that AWS automatically assigns to the network interface. You can't use this option if you use the `Ipv4 Prefixes` option.

Type: Integer

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

**PrivateIpAddress.N**

The IP addresses to be assigned as a secondary private IP address to the network interface. You can't specify this parameter when also specifying a number of secondary IP addresses.

If you don't specify an IP address, Amazon EC2 automatically selects an IP address within the subnet range.

Type: Array of strings

Required: No

**SecondaryPrivateIpAddressCount**

The number of secondary IP addresses to assign to the network interface. You can't specify this parameter when also specifying private IP addresses.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**assignedIpv4PrefixSet**

The IPv4 prefixes that are assigned to the network interface.

Type: Array of Ipv4PrefixSpecification objects

**assignedPrivateIpAddressesSet**

The private IP addresses assigned to the network interface.

Type: Array of AssignedPrivateIpAddress objects

**networkInterfaceId**

The ID of the network interface.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example assigns two secondary private IP addresses (`10.0.2.1` and `10.0.2.11`) to the specified network interface.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&PrivateIpAddress.1=10.0.2.1
&PrivateIpAddress.2=10.0.2.11
&AUTHPARAMS
```

### Sample Response

```
<AssignPrivateIpAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>3fb591ba-558c-48f8-ae6b-c2f9d6d06425</requestId>
  <networkInterfaceId>eni-01d32da61c165ac3e</networkInterfaceId>
  <assignedPrivateIpAddressesSet>
    <item>
      <privateIpAddress>10.2.2.1</privateIpAddress>
    </item>
    <item>
      <privateIpAddress>10.2.2.11</privateIpAddress>
    </item>
  </assignedPrivateIpAddressesSet>
  <return>true</return>
</AssignPrivateIpAddressesResponse>
```

## Example 2

This example assigns two secondary private IP addresses to the specified network interface. Amazon EC2 automatically assigns these IP addresses from the available IP addresses within the subnet's CIDR block range.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&SecondaryPrivateIpAddressCount=2
&AUTHPARAMS
```

### Sample Response

```
<AssignPrivateIpAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>3fb591ba-558c-48f8-ae6b-c2f9d6d06425</requestId>
  <networkInterfaceId>eni-01d32da61c165ac3e</networkInterfaceId>
  <assignedPrivateIpAddressesSet>
    <item>
      <privateIpAddress>10.2.2.7</privateIpAddress>
    </item>
    <item>
      <privateIpAddress>10.2.2.5</privateIpAddress>
    </item>
  </assignedPrivateIpAddressesSet>
```

```
  <return>true</return>
</AssignPrivateIpAddressesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssignPrivateNatGatewayAddress

Assigns private IPv4 addresses to a private NAT gateway. For more information, see Work with NAT gateways in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NatGatewayId**

The ID of the NAT gateway.

Type: String

Required: Yes

**PrivateIpAddress.N**

The private IPv4 addresses you want to assign to the private NAT gateway.

Type: Array of strings

Required: No

**PrivateIpAddressCount**

The number of private IP addresses to assign to the NAT gateway. You can't specify this parameter when also specifying private IP addresses.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 31.

Required: No

## Response Elements

The following elements are returned by the service.

**natGatewayAddressSet**

NAT gateway IP addresses.

Type: Array of NatGatewayAddress objects

**natGatewayId**

The ID of the NAT gateway.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateAddress

Associates an Elastic IP address, or carrier IP address (for instances that are in subnets in Wavelength Zones) with an instance or a network interface. Before you can use an Elastic IP address, you must allocate it to your account.

If the Elastic IP address is already associated with a different instance, it is disassociated from that instance and associated with the specified instance. If you associate an Elastic IP address with an instance that has an existing Elastic IP address, the existing address is disassociated from the instance, but remains allocated to your account.

[Subnets in Wavelength Zones] You can associate an IP address from the telecommunication carrier to the instance or network interface.

You cannot associate an Elastic IP address with an interface in a different network border group.

> **Important**
>
> This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn't return an error, and you may be charged for each time the Elastic IP address is remapped to the same instance. For more information, see the *Elastic IP Addresses* section of Amazon EC2 Pricing.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationId**

The allocation ID. This is required.

Type: String

Required: No

**AllowReassociation**

Reassociation is automatic, but you can specify false to ensure the operation fails if the Elastic IP address is already associated with another resource.

Type: Boolean

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance. The instance must have exactly one attached network interface. You can specify either the instance ID or the network interface ID, but not both.

Type: String

Required: No

**NetworkInterfaceId**

The ID of the network interface. If the instance has more than one network interface, you must specify a network interface ID.

You can specify either the instance ID or the network interface ID, but not both.

Type: String

Required: No

**PrivateIpAddress**

The primary or secondary private IP address to associate with the Elastic IP address. If no private IP address is specified, the Elastic IP address is associated with the primary private IP address.

Type: String

Required: No

**PublicIp**

Deprecated.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**associationId**

The ID that represents the association of the Elastic IP address with an instance.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example request associates a Elastic IP address with an instance. The `AllowReassignment` parameter allows the Elastic IP address to be associated with the specified instance even if it's already associated with a different instance or a network interface.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=AssociateAddress
&InstanceId=i-0598c7d356eba48d7
&AllocationId=eipalloc-5723d13e
```

```
&AllowReassignment=true
&AUTHPARAMS
```

### Sample Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
   <associationId>eipassoc-fc5ca095</associationId>
</AssociateAddressResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateCapacityReservationBillingOwner

Initiates a request to assign billing of the unused capacity of a shared Capacity Reservation to a consumer account that is consolidated under the same AWS organizations payer account. For more information, see Billing assignment for shared Amazon EC2 Capacity Reservations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**UnusedReservationBillingOwnerId**

The ID of the consumer account to which to assign billing.

Type: String

Length Constraints: Fixed length of 12.

Pattern: `[0-9]{12}`

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateClientVpnTargetNetwork

Associates a target network with a Client VPN endpoint. A target network is a subnet in a VPC. You can associate multiple subnets from the same VPC with a Client VPN endpoint. You can associate only one subnet in each Availability Zone. We recommend that you associate at least two subnets to provide Availability Zone redundancy.

If you specified a VPC when you created the Client VPN endpoint or if you have previous subnet associations, the specified subnet must be in the same VPC. To specify a subnet that's in a different VPC, you must first modify the Client VPN endpoint (ModifyClientVpnEndpoint) and change the VPC that's associated with it.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZone**

The Availability Zone name for the Transit Gateway association. Required if when associating an Availability Zone with a Client VPN endpoint that uses a Transit Gateway. You cannot specify both `SubnetId` and `AvailabilityZone`.

Type: String

Required: No

**AvailabilityZoneId**

The Availability Zone ID for the Transit Gateway association. Required if when associating an Availability Zone with a Client VPN endpoint that uses a Transit Gateway. You cannot specify both `AvailabilityZone` and `AvailabilityZoneId`.

Type: String

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SubnetId**

The ID of the subnet to associate with the Client VPN endpoint. Required for VPC-based endpoints. For Transit Gateway-based endpoints, use `AvailabilityZone` or `AvailabilityZoneId` instead.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**associationId**

The unique ID of the target network association.

Type: String

**requestId**

The ID of the request.

Type: String

**status**

The current state of the target network association.

Type: AssociationStatus object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example associates a subnet with a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateClientVpnTargetNetwork
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&SubnetId=subnet-057fa0918fEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<AssociateClientVpnTargetNetworkResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>7d1f819b-7f2a-4f81-aabf-81caeEXAMPLE</requestId>
    <status>
        <code>associating</code>
    </status>
    <associationId>cvpn-assoc-0822b0983cEXAMPLE</associationId>
</AssociateClientVpnTargetNetworkRespons>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateDhcpOptions

Associates a set of DHCP options (that you've previously created) with the specified VPC, or associates no DHCP options with the VPC.

After you associate the options with the VPC, any existing instances and all new instances that you launch in that VPC use the options. You don't need to restart or relaunch the instances. They automatically pick up the changes within a few hours, depending on how frequently the instance renews its DHCP lease. You can explicitly renew the lease using the operating system on the instance.

For more information, see DHCP option sets in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DhcpOptionsId**

The ID of the DHCP options set, or `default` to associate no DHCP options with the VPC.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example associates the DHCP options with the ID `dopt-7a8b9c2d` with the VPC with the ID `vpc-1a2b3c4d`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateDhcpOptions
&DhcpOptionsId=dopt-7a8b9c2d
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</AssociateDhcpOptionsResponse>
```

### Example 2

This example changes the VPC with the ID `vpc-1a2b3c4d` to have no associated DHCP options set.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateDhcpOptions
&DhcpOptionsId=default
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</AssociateDhcpOptionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateEnclaveCertificateIamRole

Associates an AWS Identity and Access Management (IAM) role with an AWS Certificate Manager (ACM) certificate. This enables the certificate to be used by the ACM for Nitro Enclaves application inside an enclave. For more information, see AWS Certificate Manager for Nitro Enclaves in the *AWS Nitro Enclaves User Guide*.

When the IAM role is associated with the ACM certificate, the certificate, certificate chain, and encrypted private key are placed in an Amazon S3 location that only the associated IAM role can access. The private key of the certificate is encrypted with an AWS managed key that has an attached attestation-based key policy.

To enable the IAM role to access the Amazon S3 object, you must grant it permission to call `s3:GetObject` on the Amazon S3 bucket returned by the command. To enable the IAM role to access the KMS key, you must grant it permission to call `kms:Decrypt` on the KMS key returned by the command. For more information, see Grant the role permission to access the certificate and encryption key in the *AWS Nitro Enclaves User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CertificateArn**

The ARN of the ACM certificate with which to associate the IAM role.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RoleArn**

The ARN of the IAM role to associate with the ACM certificate. You can associate up to 16 IAM roles with an ACM certificate.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**certificateS3BucketName**

The name of the Amazon S3 bucket to which the certificate was uploaded.

Type: String

**certificateS3ObjectKey**

The Amazon S3 object key where the certificate, certificate chain, and encrypted private key bundle are stored. The object key is formatted as follows: `role_arn/certificate_arn`.

Type: String

**encryptionKmsKeyId**

The ID of the KMS key used to encrypt the private key of the certificate.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateIamInstanceProfile

Associates an IAM instance profile with a running or stopped instance. You cannot associate more than one IAM instance profile with an instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**IamInstanceProfile**

The IAM instance profile.

Type: IamInstanceProfileSpecification object

Required: Yes

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**iamInstanceProfileAssociation**

Information about the IAM instance profile association.

Type: IamInstanceProfileAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example associates the IAM instance profile with the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateIamInstanceProfile
&InstanceId=i-1234567890abcdef0
&IamInstanceProfile.Name=AdminProfile
&AUTHPARAMS
```

#### Sample Response

```
<AssociateIamInstanceProfileResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>e10deeaf-7cda-48e7-950b-example</requestId>
    <iamInstanceProfileAssociation>
        <associationId>iip-assoc-0750e3af14e2b40ad</associationId>
        <iamInstanceProfile>
            <arn>arn:aws:iam::123456789012:instance-profile/AdminProfile</arn>
            <id>AIPAJEDNCAA64SSD265D6</id>
        </iamInstanceProfile>
        <instanceId>i-1234567890abcdef0</instanceId>
        <state>associating</state>
    </iamInstanceProfileAssociation>
</AssociateIamInstanceProfileResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateInstanceEventWindow

Associates one or more targets with an event window. Only one type of target (instance IDs, Dedicated Host IDs, or tags) can be specified with an event window.

For more information, see Define event windows for scheduled events in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationTarget**

One or more targets associated with the specified event window.

Type: InstanceEventWindowAssociationRequest object

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceEventWindowId**

The ID of the event window.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceEventWindow**

Information about the event window.

Type: InstanceEventWindow object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateIpamByoasn

Associates your Autonomous System Number (ASN) with a BYOIP CIDR that you own in the same AWS Region. For more information, see Tutorial: Bring your ASN to IPAM in the *Amazon VPC IPAM guide*.

After the association succeeds, the ASN is eligible for advertisement. You can view the association with DescribeByoipCidrs. You can advertise the CIDR with AdvertiseByoipCidr.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Asn**

A public 2-byte or 4-byte ASN.

Type: String

Required: Yes

**Cidr**

The BYOIP CIDR you want to associate with an ASN.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**asnAssociation**

The ASN and BYOIP CIDR association.

Type: AsnAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateIpamResourceDiscovery

Associates an IPAM resource discovery with an Amazon VPC IPAM. A resource discovery is an IPAM component that enables IPAM to manage and monitor resources that belong to the owning account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A client token.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamId**

An IPAM ID.

Type: String

Required: Yes

**IpamResourceDiscoveryId**

A resource discovery ID.

Type: String

Required: Yes

**TagSpecification.N**

Tag specifications.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**ipamResourceDiscoveryAssociation**

A resource discovery association. An associated resource discovery is a resource discovery that has been associated with an IPAM.

Type: IpamResourceDiscoveryAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateNatGatewayAddress

Associates Elastic IP addresses (EIPs) and private IPv4 addresses with a public NAT gateway. For more information, see Work with NAT gateways in the *Amazon VPC User Guide*.

By default, you can associate up to 2 Elastic IP addresses per public NAT gateway. You can increase the limit by requesting a quota adjustment. For more information, see Elastic IP address quotas in the *Amazon VPC User Guide*.

**Important**

When you associate an EIP or secondary EIPs with a public NAT gateway, the network border group of the EIPs must match the network border group of the Availability Zone (AZ) that the public NAT gateway is in. If it's not the same, the EIP will fail to associate. You can see the network border group for the subnet's AZ by viewing the details of the subnet. Similarly, you can view the network border group of an EIP by viewing the details of the EIP address. For more information about network border groups and EIPs, see Allocate an Elastic IP address in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationId.N**

The allocation IDs of EIPs that you want to associate with your NAT gateway.

Type: Array of strings

Required: Yes

**AvailabilityZone**

For regional NAT gateways only: The Availability Zone where you want to associate an Elastic IP address (EIP). The regional NAT gateway uses a separate EIP in each AZ to handle outbound NAT traffic from that AZ.

A regional NAT gateway is a single NAT Gateway that works across multiple availability zones (AZs) in your VPC, providing redundancy, scalability and availability across all the AZs in a Region.

Type: String

Required: No

**AvailabilityZoneId**

For regional NAT gateways only: The ID of the Availability Zone where you want to associate an Elastic IP address (EIP). The regional NAT gateway uses a separate EIP in each AZ to handle outbound NAT traffic from that AZ. Use this instead of AvailabilityZone for consistent identification of AZs across AWS Regions.

A regional NAT gateway is a single NAT Gateway that works across multiple availability zones (AZs) in your VPC, providing redundancy, scalability and availability across all the AZs in a Region.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NatGatewayId**

The ID of the NAT gateway.

Type: String

Required: Yes

**PrivateIpAddress.N**

The private IPv4 addresses that you want to assign to the NAT gateway.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**natGatewayAddressSet**

The IP addresses.

Type: Array of NatGatewayAddress objects

**natGatewayId**

The ID of the NAT gateway.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateRouteServer

Associates a route server with a VPC to enable dynamic route updates.

A route server association is the connection established between a route server and a VPC.

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteServerId**

The unique identifier for the route server to be associated.

Type: String

Required: Yes

**VpcId**

The ID of the VPC to associate with the route server.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServerAssociation**

Information about the association between the route server and the VPC.

Type: RouteServerAssociation object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateRouteTable

Associates a subnet in your VPC or an internet gateway or virtual private gateway attached to your VPC with a route table in your VPC. This association causes traffic from the subnet or gateway to be routed according to the routes in the route table. The action returns an association ID, which you need in order to disassociate the route table later. A route table can be associated with multiple subnets.

For more information, see Route tables in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GatewayId**

The ID of the internet gateway or virtual private gateway.

Type: String

Required: No

**PublicIpv4Pool**

The ID of a public IPv4 pool. A public IPv4 pool is a pool of IPv4 addresses that you've brought to AWS with BYOIP.

Type: String

Required: No

**RouteTableId**

The ID of the route table.

Type: String

Required: Yes

**SubnetId**

The ID of the subnet.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**associationId**

The route table association ID. This ID is required for disassociating the route table.

Type: String

**associationState**

The state of the association.

Type: RouteTableAssociationState object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example associates a route table with the ID `rtb-11223344556677889` with a subnet with the ID `subnet-12345678901234567`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateRouteTable
&RouteTableId=rtb-11223344556677889
&SubnetId=subnet-12345678901234567
```

### Sample Response

```
<AssociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <associationId>rtbassoc-04ca27a6914a0b4f</associationId>
</AssociateRouteTableResponse>
```

## Example 2

This example associates a route table with the ID `rtb-11223344556677889` with an internet gateway with the ID `igw-1a2b3c4d1a2b3c4d1`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateRouteTable
&RouteTableId=rtb-11223344556677889
&GatewayId=igw-1a2b3c4d1a2b3c4d1
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateSecurityGroupVpc

Associates a security group with another VPC in the same Region. This enables you to use the same security group with network interfaces and instances in the specified VPC.

**Note**

- The VPC you want to associate the security group with must be in the same Region.
- You can associate the security group with another VPC if your account owns the VPC or if the VPC was shared with you.
- You must own the security group.
- You cannot use this feature with default security groups.
- You cannot use this feature with the default VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupId**

A security group ID.

Type: String

Required: Yes

**VpcId**

A VPC ID.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**state**

The state of the association.

Type: String

Valid Values: `associating | associated | association-failed | disassociating | disassociated | disassociation-failed`

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateSubnetCidrBlock

Associates a CIDR block with your subnet. You can only associate a single IPv6 CIDR block with your subnet.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Ipv6CidrBlock**

The IPv6 CIDR block for your subnet.

Type: String

Required: No

**Ipv6IpamPoolId**

An IPv6 IPAM pool ID.

Type: String

Required: No

**Ipv6NetmaskLength**

An IPv6 netmask length.

Type: Integer

Required: No

**SubnetId**

The ID of your subnet.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipv6CidrBlockAssociation**

Information about the IPv6 association.

Type: SubnetIpv6CidrBlockAssociation object

**requestId**

The ID of the request.

Type: String

**subnetId**

The ID of the subnet.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example associates IPv6 CIDR block `2001:db8:1234:1a00::/64` with subnet `subnet-1a2b3c4d`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateSubnetCidrBlock
&SubnetId=subnet-1a2b3c4d
&Ipv6CidrBlock=2001:db8:1234:1a00::/64
&AUTHPARAMS
```

#### Sample Response

```
<AssociateSubnetCidrBlock xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <subnetId>vpc-1a2b3c4d</subnetId>
   <ipv6CidrBlockAssociation>
```

```
        <ipv6CidrBlock>2001:db8:1234:1a00::/64</ipv6CidrBlock>
        <ipv6CidrBlockState>
            <state>associating</state>
        </ipv6CidrBlockState>
        <associationId>subnet-cidr-assoc-3aa54053</associationId>
   </ipv6CidrBlockAssociation>
</AssociateSubnetCidrBlock>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateTransitGatewayMulticastDomain

Associates the specified subnets and transit gateway attachments with the specified transit gateway multicast domain.

The transit gateway attachment must be in the available state before you can add a resource. Use DescribeTransitGatewayAttachments to see the state of the attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SubnetIds.N**

The IDs of the subnets to associate with the transit gateway multicast domain.

Type: Array of strings

Required: Yes

**TransitGatewayAttachmentId**

The ID of the transit gateway attachment to associate with the transit gateway multicast domain.

Type: String

Required: Yes

**TransitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**associations**

Information about the transit gateway multicast domain associations.

Type: TransitGatewayMulticastDomainAssociations object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example associates the transit gateway attachment `tgw-attach-028c1dd0f8EXAMPLE` with the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateTransitGatewayMulticastDomain
&TransitGatewayAttachmentId=tgw-attach-028c1dd0f8EXAMPLE
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<AssociateTransitGatewayMulticastDomainResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
```

```
    <requestId>fa968e66-0290-4479-a8ca-e5c83EXAMPLE</requestId>
    <associations>
        <resourceId>vpc-01128d2c24EXAMPLE</resourceId>
        <resourceType>vpc</resourceType>
        <subnets>
            <item>
                <state>associating</state>
                <subnetId>subnet-000de86e3bEXAMPLE</subnetId>
            </item>
        </subnets>
        <transitGatewayAttachmentId>tgw-attach-028c1dd0f8EXAMPLE</
transitGatewayAttachmentId>
        <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
    </associations>
</AssociateTransitGatewayMulticastDomainResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateTransitGatewayPolicyTable

Associates the specified transit gateway attachment with a transit gateway policy table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the transit gateway attachment to associate with the policy table.

Type: String

Required: Yes

**TransitGatewayPolicyTableId**

The ID of the transit gateway policy table to associate with the transit gateway attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**association**

Describes the association of a transit gateway and a transit gateway policy table.

Type: TransitGatewayPolicyTableAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateTransitGatewayRouteTable

Associates the specified attachment with the specified transit gateway route table. You can associate only one route table with an attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: Yes

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**association**

The ID of the association.

Type: TransitGatewayAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateTrunkInterface

Associates a branch network interface with a trunk network interface.

Before you create the association, use CreateNetworkInterface command and set the interface type to `trunk`. You must also create a network interface for each branch network interface that you want to associate with the trunk network interface.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**BranchInterfaceId**

The ID of the branch network interface.

Type: String

Required: Yes

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GreKey**

The application key. This applies to the GRE protocol.

Type: Integer

Required: No

**TrunkInterfaceId**

The ID of the trunk network interface.

Type: String

Required: Yes

**VlanId**

The ID of the VLAN. This applies to the VLAN protocol.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

**interfaceAssociation**

Information about the association between the trunk network interface and branch network interface.

Type: TrunkInterfaceAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AssociateVpcCidrBlock

Associates a CIDR block with your VPC. You can associate a secondary IPv4 CIDR block, an Amazon-provided IPv6 CIDR block, or an IPv6 CIDR block from an IPv6 address pool that you provisioned through bring your own IP addresses (BYOIP).

You must specify one of the following in the request: an IPv4 CIDR block, an IPv6 pool, or an Amazon-provided IPv6 CIDR block.

For more information about associating CIDR blocks with your VPC and applicable restrictions, see IP addressing for your VPCs and subnets in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AmazonProvidedIpv6CidrBlock**

Requests an Amazon-provided IPv6 CIDR block with a /56 prefix length for the VPC. You cannot specify the range of IPv6 addresses or the size of the CIDR block.

Type: Boolean

Required: No

**CidrBlock**

An IPv4 CIDR block to associate with the VPC.

Type: String

Required: No

**Ipv4IpamPoolId**

Associate a CIDR allocated from an IPv4 IPAM pool to a VPC. For more information about Amazon VPC IP Address Manager (IPAM), see What is IPAM? in the *Amazon VPC IPAM User Guide*.

Type: String

Required: No

**Ipv4NetmaskLength**

The netmask length of the IPv4 CIDR you would like to associate from an Amazon VPC IP Address Manager (IPAM) pool. For more information about IPAM, see What is IPAM? in the *Amazon VPC IPAM User Guide*.

Type: Integer

Required: No

**Ipv6CidrBlock**

An IPv6 CIDR block from the IPv6 address pool. You must also specify `Ipv6Pool` in the request.

To let Amazon choose the IPv6 CIDR block for you, omit this parameter.

Type: String

Required: No

**Ipv6CidrBlockNetworkBorderGroup**

The name of the location from which we advertise the IPV6 CIDR block. Use this parameter to limit the CIDR block to this location.

You must set `AmazonProvidedIpv6CidrBlock` to `true` to use this parameter.

You can have one IPv6 CIDR block association per network border group.

Type: String

Required: No

**Ipv6IpamPoolId**

Associates a CIDR allocated from an IPv6 IPAM pool to a VPC. For more information about Amazon VPC IP Address Manager (IPAM), see What is IPAM? in the *Amazon VPC IPAM User Guide*.

Type: String

Required: No

**Ipv6NetmaskLength**

The netmask length of the IPv6 CIDR you would like to associate from an Amazon VPC IP Address Manager (IPAM) pool. For more information about IPAM, see What is IPAM? in the *Amazon VPC IPAM User Guide*.

Type: Integer

Required: No

**Ipv6Pool**

The ID of an IPv6 address pool from which to allocate the IPv6 CIDR block.

Type: String

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**cidrBlockAssociation**

Information about the IPv4 CIDR block association.

Type: VpcCidrBlockAssociation object

**ipv6CidrBlockAssociation**

Information about the IPv6 CIDR block association.

Type: VpcIpv6CidrBlockAssociation object

**requestId**

The ID of the request.

Type: String

**vpcId**

The ID of the VPC.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example associates an IPv6 CIDR block with VPC `vpc-1a2b3c4d`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateVpcCidrBlock
&VpcId=vpc-1a2b3c4d
&AmazonProvidedIpv6CidrBlock=true
&AUTHPARAMS
```

#### Sample Response

```
<AssociateVpcCidrBlock xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <ipv6CidrBlockAssociation>
        <ipv6CidrBlockState>
            <state>associating</state>
        </ipv6CidrBlockState>
        <associationId>vpc-cidr-assoc-e2a5408b</associationId>
    </ipv6CidrBlockAssociation>
   <vpcId>vpc-1a2b3c4d</vpcId>
</AssociateVpcCidrBlock>
```

### Example 2

This example associates the IPv4 CIDR block `10.2.0.0/16` with VPC `vpc-1a2b3c4d`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateVpcCidrBlock
&VpcId=vpc-1a2b3c4d
```

```
&CidrBlock=10.2.0.0/16
&AUTHPARAMS
```

### Sample Response

```
<AssociateVpcCidrBlockResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>33af6c54-1139-4d50-b4f7-15a8example</requestId>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <cidrBlockAssociation>
        <associationId>vpc-cidr-assoc-0280ab6b</associationId>
        <cidrBlock>10.2.0.0/16</cidrBlock>
        <cidrBlockState>
            <state>associating</state>
        </cidrBlockState>
    </cidrBlockAssociation>
</AssociateVpcCidrBlockResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AttachClassicLinkVpc

> **Note**
>
> This action is deprecated.

Links an EC2-Classic instance to a ClassicLink-enabled VPC through one or more of the VPC security groups. You cannot link an EC2-Classic instance to more than one VPC at a time. You can only link an instance that's in the `running` state. An instance is automatically unlinked from a VPC when it's stopped - you can link it to the VPC again when you restart it.

After you've linked an instance, you cannot change the VPC security groups that are associated with it. To change the security groups, you must first unlink the instance, and then link it again.

Linking your instance to a VPC is sometimes referred to as *attaching* your instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the EC2-Classic instance.

Type: String

Required: Yes

**SecurityGroupId.N**

The IDs of the security groups. You cannot specify security groups from a different VPC.

Type: Array of strings

Required: Yes

**VpcId**

The ID of the ClassicLink-enabled VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AttachImageWatermark

Attaches a watermark to a non-public AMI. The watermark is a structured identifier that automatically propagates to all derivative images created through CreateImage, CopyImage, and CreateRestoreImageTask.

Only the AMI owner can attach watermarks. Watermarks cannot be added to public AMIs.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

**WatermarkName**

The name for the watermark. Combined with the caller's account ID to form the `WatermarkKey` (`accountId:watermarkName`).

Constraints: 3-128 alphanumeric characters, parentheses (()), square brackets ([]), spaces ( ), periods (.), slashes (/), dashes (-), single quotes ('), at-signs (@), or underscores(_)

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**watermarkKey**

The watermark identifier, in `accountId:watermarkName` format (for example, `123456789012:approvedAmi`).

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# AttachInternetGateway

Attaches an internet gateway or a virtual private gateway to a VPC, enabling connectivity between the internet and the VPC. For more information, see Internet gateways in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InternetGatewayId**

The ID of the internet gateway.

Type: String

Required: Yes

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example attaches the internet gateway with the ID `igw-eaad4883` to the VPC with the ID `vpc-11ad4878`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AttachInternetGateway
&InternetGatewayId=igw-eaad4883
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

#### Sample Response

```
<AttachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</AttachInternetGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AttachNetworkInterface

Attaches a network interface to an instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DeviceIndex**

The index of the device for the network interface attachment.

Type: Integer

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EnaQueueCount**

The number of ENA queues to be created with the instance.

Type: Integer

Required: No

**EnaSrdSpecification**

Configures ENA Express for the network interface that this action attaches to the instance.

Type: EnaSrdSpecification object

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**NetworkCardIndex**

The index of the network card. Some instance types support multiple network cards. The primary network interface must be assigned to network card index 0. The default is network card index 0.

Type: Integer

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**attachmentId**

The ID of the network interface attachment.

Type: String

**networkCardIndex**

The index of the network card.

Type: Integer

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example attaches the specified network interface to the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AttachNetworkInterface
&DeviceIndex=1
&InstanceId=i-1234567890abcdef0
&NetworkInterfaceId=eni-ffda3197
&AUTHPARAMS
```

#### Sample Response

```
<AttachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>ace8cd1e-e685-4e44-90fb-92014d907212</requestId>
    <attachmentId>eni-attach-d94b09b0</attachmentId>
</AttachNetworkInterfaceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

# AttachVerifiedAccessTrustProvider

Attaches the specified AWS Verified Access trust provider to the specified AWS Verified Access instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessInstanceId**

The ID of the Verified Access instance.

Type: String

Required: Yes

**VerifiedAccessTrustProviderId**

The ID of the Verified Access trust provider.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessInstance**

Details about the Verified Access instance.

Type: VerifiedAccessInstance object

**verifiedAccessTrustProvider**

Details about the Verified Access trust provider.

Type: VerifiedAccessTrustProvider object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# AttachVolume

Attaches an Amazon EBS volume to a `running` or `stopped` instance, and exposes it to the instance with the specified device name.

> **Note**
>
> The maximum number of Amazon EBS volumes that you can attach to an instance depends on the instance type. If you exceed the volume attachment limit for an instance type, the attachment request fails with the `AttachmentLimitExceeded` error. For more information, see Instance volume limits.

After you attach an EBS volume, you must make it available for use. For more information, see Make an EBS volume available for use.

If a volume has an AWS Marketplace product code:

- The volume can be attached only to a stopped instance.
- AWS Marketplace product codes are copied from the volume to the instance.
- You must be subscribed to the product.
- The instance type and operating system of the instance must support the product. For example, you can't detach a volume from a Windows instance and attach it to a Linux instance.

For more information, see Attach an Amazon EBS volume to an instance in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Device**

The device name (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EbsCardIndex**

The index of the EBS card. Some instance types support multiple EBS cards. The default EBS card index is 0.

Type: Integer

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**VolumeId**

The ID of the EBS volume. The volume and instance must be within the same Availability Zone.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**associatedResource**

The ARN of the AWS-managed resource to which the volume is attached.

Type: String

**attachTime**

The time stamp when the attachment initiated.

Type: Timestamp

**deleteOnTermination**

Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

**device**

The device name.

If the volume is attached to an AWS-managed resource, this parameter returns `null`.

Type: String

**ebsCardIndex**

The index of the EBS card. Some instance types support multiple EBS cards. The default EBS card index is 0.

Type: Integer

**instanceId**

The ID of the instance.

If the volume is attached to an AWS-managed resource, this parameter returns `null`.

Type: String

**instanceOwningService**

The service principal of the AWS service that owns the underlying resource to which the volume is attached.

This parameter is returned only for volumes that are attached to AWS-managed resources.

Type: String

**requestId**

The ID of the request.

Type: String

**status**

The attachment state of the volume.

Type: String

Valid Values: `attaching | attached | detaching | detached | busy`

**volumeId**

The ID of the volume.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example request attaches the volume with the ID `vol-1234567890abcdef0` to the instance with the ID `i-1234567890abcdef0` and exposes it as `/dev/sdh`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AttachVolume
&VolumeId=vol-1234567890abcdef0
&InstanceId=i-1234567890abcdef0
&Device=/dev/sdh
&AUTHPARAMS
```

#### Sample Response

```
<AttachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1234567890abcdef0</volumeId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <device>/dev/sdh</device>
```

```
  <status>attaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</AttachVolumeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AttachVpnGateway

Attaches an available virtual private gateway to a VPC. You can attach one virtual private gateway to one VPC at a time.

For more information, see AWS Site-to-Site VPN in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

**VpnGatewayId**

The ID of the virtual private gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**attachment**

Information about the attachment.

Type: VpcAttachment object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example attaches the virtual private gateway with the ID `vgw-8db04f81` to the VPC with the ID `vpc-1a2b3c4d`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AttachVpnGateway
&VpnGatewayId=vgw-8db04f81
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<AttachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <attachment>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <state>attaching</state>
   </attachment>
</AttachVpnGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AuthorizeClientVpnIngress

Adds an ingress authorization rule to a Client VPN endpoint. Ingress authorization rules act as firewall rules that grant access to networks. You must configure ingress authorization rules to enable clients to access resources in AWS or on-premises networks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AccessGroupId**

The ID of the group to grant access to, for example, the Active Directory group or identity provider (IdP) group. Required if `AuthorizeAllGroups` is `false` or not specified.

Type: String

Required: No

**AuthorizeAllGroups**

Indicates whether to grant access to all clients. Specify `true` to grant all clients who successfully establish a VPN connection access to the network. Must be set to `true` if `AccessGroupId` is not specified.

Type: Boolean

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

**Description**

A brief description of the authorization rule.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TargetNetworkCidr**

The IPv4 address range, in CIDR notation, of the network for which access is being authorized.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**status**

The current state of the authorization rule.

Type: ClientVpnAuthorizationRuleStatus object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example adds an authorization rule to a subnet and grants access to all users.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeClientVpnIngress
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&TargetNetworkCidr=10.0.0.0/16
&AuthorizeAllGroups=true
&AUTHPARAMS
```

#### Sample Response

```
<AuthorizeClientVpnIngressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>afafad8c-274c-4584-bbd1-75a21EXAMPLE</requestId>
    <status>
        <code>authorizing</code>
    </status>
</AuthorizeClientVpnIngressResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AuthorizeSecurityGroupEgress

Adds the specified outbound (egress) rules to a security group.

An outbound rule permits instances to send traffic to the specified IPv4 or IPv6 address ranges, the IP address ranges specified by a prefix list, or the instances that are associated with a source security group. For more information, see Security group rules.

You must specify exactly one of the following destinations: an IPv4 or IPv6 address range, a prefix list, or a security group. You must specify a protocol for each rule (for example, TCP). If the protocol is TCP or UDP, you must also specify a port or port range. If the protocol is ICMP or ICMPv6, you must also specify the ICMP type and code.

Rule changes are propagated to instances associated with the security group as quickly as possible. However, a small delay might occur.

For examples of rules that you can add to security groups for specific access scenarios, see Security group rules for different use cases in the *Amazon EC2 User Guide*.

For information about security group quotas, see Amazon VPC quotas in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CidrIp**

Not supported. Use IP permissions instead.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FromPort**

Not supported. Use IP permissions instead.

Type: Integer

Required: No

**GroupId**

The ID of the security group.

Type: String

Required: Yes

**IpPermissions.N**

The permissions for the security group rules.

Type: Array of IpPermission objects

Required: No

**IpProtocol**

Not supported. Use IP permissions instead.

Type: String

Required: No

**SourceSecurityGroupName**

Not supported. Use IP permissions instead.

Type: String

Required: No

**SourceSecurityGroupOwnerId**

Not supported. Use IP permissions instead.

Type: String

Required: No

**TagSpecification.N**

The tags applied to the security group rule.

Type: Array of TagSpecification objects

Required: No

**ToPort**

Not supported. Use IP permissions instead.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

**securityGroupRuleSet**

Information about the outbound (egress) security group rules that were added.

Type: Array of SecurityGroupRule objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example request grants your security group with the ID `sg-1a2b3c4d` access to the `192.0.2.0/24` and `198.51.100.0/24` IPv4 address ranges on TCP port 80.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.2.CidrIp=198.51.100.0/24
&AUTHPARAMS
```

### Sample Response

```
<AuthorizeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</AuthorizeSecurityGroupEgressResponse>
```

## Example 2

This example request grants egress access from the security group with the ID `sg-1a2b3c4d` to the security group with the ID `sg-9a8d7f5c` on TCP port 1433.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=1433
&IpPermissions.1.ToPort=1433
&IpPermissions.1.Groups.1.GroupId=sg-9a8d7f5c
&AUTHPARAMS
```

### Example 3

This example request grants your security group with the ID `sg-1a2b3c4d` access to the `2001:db8:1234:1a00::/64` IPv6 address range on TCP port 22.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.Ipv6Ranges.1.CidrIpv6=2001:db8:1234:1a00::/64
&AUTHPARAMS
```

### Example 4

This example grants access over port 3389 (RDP) to the `192.0.2.0/24` IPv4 address range, and includes a description for the rule to help you identify the rule later.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=3389
&IpPermissions.1.ToPort=3389
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.1.Description=Access to London office
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# AuthorizeSecurityGroupIngress

Adds the specified inbound (ingress) rules to a security group.

An inbound rule permits instances to receive traffic from the specified IPv4 or IPv6 address range, the IP address ranges that are specified by a prefix list, or the instances that are associated with a destination security group. For more information, see Security group rules.

You must specify exactly one of the following sources: an IPv4 or IPv6 address range, a prefix list, or a security group. You must specify a protocol for each rule (for example, TCP). If the protocol is TCP or UDP, you must also specify a port or port range. If the protocol is ICMP or ICMPv6, you must also specify the ICMP/ICMPv6 type and code.

Rule changes are propagated to instances associated with the security group as quickly as possible. However, a small delay might occur.

For examples of rules that you can add to security groups for specific access scenarios, see Security group rules for different use cases in the *Amazon EC2 User Guide*.

For more information about security group quotas, see Amazon VPC quotas in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CidrIp**

The IPv4 address range, in CIDR format.

> **Note**
>
> AWS canonicalizes IPv4 and IPv6 CIDRs. For example, if you specify 100.68.0.18/18 for the CIDR block, AWS canonicalizes the CIDR block to 100.68.0.0/18. Any subsequent DescribeSecurityGroups and DescribeSecurityGroupRules calls will return the canonicalized form of the CIDR block. Additionally, if you attempt to add another rule with the non-canonical form of the CIDR (such as 100.68.0.18/18) and there is already a rule for the canonicalized form of the CIDR block (such as 100.68.0.0/18), the API throws an duplicate rule error.

To specify an IPv6 address range, use IP permissions instead.

To specify multiple rules and descriptions for the rules, use IP permissions instead.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FromPort**

If the protocol is TCP or UDP, this is the start of the port range. If the protocol is ICMP, this is the ICMP type or -1 (all ICMP types).

To specify multiple rules and descriptions for the rules, use IP permissions instead.

Type: Integer

Required: No

**GroupId**

The ID of the security group.

Type: String

Required: No

**GroupName**

[Default VPC] The name of the security group. For security groups for a default VPC you can specify either the ID or the name of the security group. For security groups for a nondefault VPC, you must specify the ID of the security group.

Type: String

Required: No

**IpPermissions.N**

The permissions for the security group rules.

Type: Array of IpPermission objects

Required: No

**IpProtocol**

The IP protocol name (`tcp`, `udp`, `icmp`) or number (see Protocol Numbers). To specify all protocols, use `-1`.

To specify `icmpv6`, use IP permissions instead.

If you specify a protocol other than one of the supported values, traffic is allowed on all ports, regardless of any ports that you specify.

To specify multiple rules and descriptions for the rules, use IP permissions instead.

Type: String

Required: No

**SourceSecurityGroupName**

[Default VPC] The name of the source security group.

The rule grants full ICMP, UDP, and TCP access. To create a rule with a specific protocol and port range, specify a set of IP permissions instead.

Type: String

Required: No

**SourceSecurityGroupOwnerId**

The AWS account ID for the source security group, if the source security group is in a different account.

The rule grants full ICMP, UDP, and TCP access. To create a rule with a specific protocol and port range, use IP permissions instead.

Type: String

Required: No

**TagSpecification.N**

The tags applied to the security group rule.

Type: Array of TagSpecification objects

Required: No

**ToPort**

If the protocol is TCP or UDP, this is the end of the port range. If the protocol is ICMP, this is the ICMP code or -1 (all ICMP codes). If the start port is -1 (all ICMP types), then the end port must be -1 (all ICMP codes).

To specify multiple rules and descriptions for the rules, use IP permissions instead.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

**securityGroupRuleSet**

Information about the inbound (ingress) security group rules that were added.

Type: Array of SecurityGroupRule objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example request grants TCP port 80 access from the source group `sg-2a2b3c4d` to the security group `sg-1a2b3c4d`. The source security group must be in the same VPC or in a peer VPC (requires a VPC peering connection).

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Groups.1.GroupId=sg-2a2b3c4d
&AUTHPARAMS
```

### Example 2

This example grants SSH access (port 22) from the IPv6 range `2001:db8:1234:1a00::/64`.

#### Sample Request

```
https://ec2.amazonaws.com/
?Action=AuthorizeSecurityGroupIngress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.Ipv6Ranges.1.CidrIpv6=2001:db8:1234:1a00::/64
&AUTHPARAMS
```

### Example 3

This example grants access over port 3389 (RDP) from the `192.0.2.0/24` IPv4 address range, and includes a description for the rule to help you identify the rule later.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=3389
&IpPermissions.1.ToPort=3389
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.1.Description=Access from New York office
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# BundleInstance

Bundles an Amazon instance store-backed Windows instance.

During bundling, only the root device volume (C:\) is bundled. Data on other instance store volumes is not preserved.

> **Note**
>
> This action is no longer supported. To create an AMI, use CreateImage. For more information, see Create an Amazon EBS-backed AMI in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance to bundle.

Default: None

Type: String

Required: Yes

**Storage**

The bucket in which to store the AMI. You can specify a bucket that you already own or a new bucket that Amazon EC2 creates on your behalf. If you specify a bucket that belongs to someone else, Amazon EC2 returns an error.

Type: Storage object

Required: Yes

## Response Elements

The following elements are returned by the service.

**bundleInstanceTask**

Information about the bundle task.

Type: BundleTask object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example request bundles the specified instance.

Before you specify a value for your access key ID, review and follow the guidance in Best Practices for AWS accounts in the *AWS Account Management Reference Guide*.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=BundleInstance
&InstanceId=i-1234567890abcdef0
&Storage.S3.AWSAccessKeyId='AKIAIOSFODNN7EXAMPLE'
&Storage.S3.Bucket=myawsbucket
&Storage.S3.Prefix=winami
&Storage.S3.UploadPolicy=eyJleHBpcmF0aW9uIjogIjIwMDgtMDgtMzBUMDg6NDk6MD
```

```
laIiwiY29uZGl0aW9ucyI6IFt7ImJ1Y2tldCI6ICJteS1idWNrZXQifSxbInN0YXJ0cy13aXRoIiwgI
iRrZXkiLCAibXktbmV3LWltYWdlIl0seyJhY2wiOiAiZWMyLWJ1bmRsZS1yZWFkIn1dfEXAMPLE
&Storage.S3.UploadPolicySignature=fh5tyyyQD8W4COEthj3nlGNEXAMPLE
&AUTHPARAMS
```

### Sample Response

```
<BundleInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
      <instanceId>i-1234567890abcdef0</instanceId>
      <bundleId>bun-c1a540a8</bundleId>
      <state>bundling</state>
      <startTime>2008-10-07T11:41:50.000Z</startTime>
      <updateTime>2008-10-07T11:51:50.000Z</updateTime>
      <progress>70%</progress>
      <storage>
        <S3>
          <bucket>myawsbucket</bucket>
          <prefix>winami</prefix>
        </S3>
      </storage>
  </bundleInstanceTask>
</BundleInstanceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# CancelBundleTask

Cancels a bundling operation for an instance store-backed Windows instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**BundleId**

The ID of the bundle task.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**bundleInstanceTask**

Information about the bundle task.

Type: BundleTask object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example request cancels the specified bundle task.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CancelBundleTask
&BundleId=bun-cla322b9
&AUTHPARAMS
```

#### Sample Response

```
<CancelBundleTaskResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTask>
      <instanceId>i-1234567890abcdef0</instanceId>
      <bundleId>bun-cla322b9</bundleId>
      <state>canceling</state>
      <startTime>2008-10-07T11:41:50.000Z</startTime>
      <updateTime>2008-10-07T11:51:50.000Z</updateTime>
      <progress>20%</progress>
      <storage>
        <S3>
          <bucket>myawsbucket</bucket>
          <prefix>my-new-image</prefix>
        </S3>
      </storage>
  </bundleInstanceTask>
</CancelBundleTaskResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CancelCapacityReservation

Cancels the specified Capacity Reservation, releases the reserved capacity, and changes the Capacity Reservation's state to `cancelled`.

You can cancel a Capacity Reservation that is in the following states:

- `assessing`
- `scheduled`
- `active` and there is no commitment duration or the commitment duration has elapsed.
- `active` during the commitment duration, if you provide a cancellation quote ID and accept the cancellation charges. Use `CreateCapacityReservationCancellationQuote` to generate a quote. The Capacity Reservation transitions to `cancelling` while charges are applied.

> **Note**
>
> You can't modify or cancel a Capacity Block. For more information, see Capacity Blocks for ML.

If a future-dated Capacity Reservation enters the `delayed` state, the commitment duration is waived, and you can cancel it as soon as it enters the `active` state.

Instances running in the reserved capacity continue running until you stop them. Stopped instances that target the Capacity Reservation can no longer launch. Modify these instances to either target a different Capacity Reservation, launch On-Demand Instance capacity, or run in any open Capacity Reservation that has matching attributes and sufficient capacity.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ApplyCancellationCharges**

Specifies the cancellation charge type to apply when cancelling a future-dated Capacity Reservation during its commitment duration. Possible values include `commitment-wind-`

down, which continues billing for the remaining commitment duration without delivering capacity.

Type: String

Valid Values: `commitment-wind-down`

Required: No

**CapacityReservationId**

The ID of the Capacity Reservation to be cancelled.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**QuoteId**

The ID of the cancellation quote to use for the cancellation. You can generate a cancellation quote by using the `CreateCapacityReservationCancellationQuote` action. The cancellation quote must be in an `active` state.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CancelCapacityReservationFleets

Cancels one or more Capacity Reservation Fleets. When you cancel a Capacity Reservation Fleet, the following happens:

- The Capacity Reservation Fleet's status changes to `cancelled`.
- The individual Capacity Reservations in the Fleet are cancelled. Instances running in the Capacity Reservations at the time of cancelling the Fleet continue to run in shared capacity.
- The Fleet stops creating new Capacity Reservations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationFleetId.N**

The IDs of the Capacity Reservation Fleets to cancel.

Type: Array of strings

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**failedFleetCancellationSet**

Information about the Capacity Reservation Fleets that could not be cancelled.

Type: Array of FailedCapacityReservationFleetCancellationResult objects

**requestId**

The ID of the request.

Type: String

**successfulFleetCancellationSet**

Information about the Capacity Reservation Fleets that were successfully cancelled.

Type: Array of CapacityReservationFleetCancellationState objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CancelConversionTask

Cancels an active conversion task. The task can be the import of an instance or volume. The action removes all artifacts of the conversion, including a partially uploaded volume or instance. If the conversion is complete or is in the process of transferring the final disk image, the command fails and returns an exception.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ConversionTaskId**

The ID of the conversion task.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ReasonMessage**

The reason for canceling the conversion task.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example request cancels the conversion task with the ID `import-i-fh95npoc`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CancelConversionTask
&ConversionTaskId=import-i-fh95npoc
&AUTHPARAMS
```

#### Sample Response

```
<CancelConversionTaskResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</CancelConversionTaskResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CancelDeclarativePoliciesReport

Cancels the generation of an account status report.

You can only cancel a report while it has the `running` status. Reports with other statuses (`complete`, `cancelled`, or `error`) can't be canceled.

For more information, see Generating the account status report for declarative policies in the *AWS Organizations User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ReportId**

The ID of the report.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CancelExportTask

Cancels an active export task. The request removes all artifacts of the export, including any partially-created Amazon S3 objects. If the export task is complete or is in the process of transferring the final disk image, the command fails and returns an error.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ExportTaskId**

The ID of the export task. This is the ID returned by the `CreateInstanceExportTask` and `ExportImage` operations.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example request cancels the export task with the ID `export-i-1234wxyz`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CancelExportTask
&exportTaskId=export-i-1234wxyz
&AUTHPARAMS
```

### Sample Response

```
<CancelExportTask xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</CancelExportTask>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CancelImageLaunchPermission

Removes your AWS account from the launch permissions for the specified AMI. For more information, see Cancel having an AMI shared with your AWS account in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI that was shared with your AWS account.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CancelImportTask

Cancels an in-process import virtual machine or import snapshot task.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CancelReason**

The reason for canceling the task.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImportTaskId**

The ID of the import image or import snapshot task to be canceled.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**importTaskId**

The ID of the task being canceled.

Type: String

**previousState**

The current state of the task being canceled.

Type: String

**requestId**

The ID of the request.

Type: String

**state**

The current state of the task being canceled.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CancelReservedInstancesListing

Cancels the specified Reserved Instance listing in the Reserved Instance Marketplace.

For more information, see Sell in the Reserved Instance Marketplace in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ReservedInstancesListingId**

The ID of the Reserved Instance listing.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**reservedInstancesListingsSet**

The Reserved Instance listing.

Type: Array of ReservedInstancesListing objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example request cancels a Reserved Instance listing in the Reserved Instance Marketplace. The response shows that the status is cancelled.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CancelReservedInstancesListing
&ReservedInstancesListingId=3ebe97b5-f273-43b6-a204-7a18cEXAMPLE
&AUTHPARAMS
```

### Sample Response

```
<CancelReservedInstancesListingResponse>
    <requestId>bec2cf62-98ef-434a-8a15-886fcexample</requestId>
    <reservedInstancesListingsSet>
        <item>
            <reservedInstancesListingId>3ebe97b5-f273-43b6-a204-7a18cEXAMPLE</
reservedInstancesListingId>
            <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</
reservedInstancesId>
            <createDate>2012-07-12T16:55:28.000Z</createDate>
            <updateDate>2012-07-12T16:55:28.000Z</updateDate>
            <status>cancelled</status>
            <statusMessage>CANCELLED</statusMessage>
            <instanceCounts>
                <item>
                    <state>Available</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Sold</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Cancelled</state>
                    <instanceCount>1</instanceCount>
                </item>
                <item>
                    <state>Pending</state>
                    <instanceCount>0</instanceCount>
```

```
                </item>
            </instanceCounts>
            <priceSchedules>
                <item>
                    <term>5</term>
                    <price>166.64</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>4</term>
                    <price>133.32</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>3</term>
                    <price>99.99</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>2</term>
                    <price>66.66</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>1</term>
                    <price>33.33</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
            </priceSchedules>
            <tagSet/>
            <clientToken>XqJIt1342112125076</clientToken>
        </item>
    </reservedInstancesListingsSet>
</CancelReservedInstancesListingResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CancelSpotFleetRequests

Cancels the specified Spot Fleet requests.

After you cancel a Spot Fleet request, the Spot Fleet launches no new instances.

You must also specify whether a canceled Spot Fleet request should terminate its instances. If you choose to terminate the instances, the Spot Fleet request enters the `cancelled_terminating` state. Otherwise, the Spot Fleet request enters the `cancelled_running` state and the instances continue to run until they are interrupted or you terminate them manually.

**Important**

**Terminating an instance is permanent and irreversible.**
After you terminate an instance, you can no longer connect to it, and it can't be recovered. All attached Amazon EBS volumes that are configured to be deleted on termination are also permanently deleted and can't be recovered. All data stored on instance store volumes is permanently lost. For more information, see How instance termination works.
Before you terminate an instance, ensure that you have backed up all data that you need to retain after the termination to persistent storage.

**Restrictions**

- You can delete up to 100 fleets in a single request. If you exceed the specified number, no fleets are deleted.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SpotFleetRequestId.N**

The IDs of the Spot Fleet requests.

Constraint: You can specify up to 100 IDs in a single request.

Type: Array of strings

Required: Yes

**TerminateInstances**

Indicates whether to terminate the associated instances when the Spot Fleet request is canceled. The default is to terminate the instances.

To let the instances continue to run after the Spot Fleet request is canceled, specify `no-terminate-instances`.

Type: Boolean

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**successfulFleetRequestSet**

Information about the Spot Fleet requests that are successfully canceled.

Type: Array of CancelSpotFleetRequestsSuccessItem objects

**unsuccessfulFleetRequestSet**

Information about the Spot Fleet requests that are not successfully canceled.

Type: Array of CancelSpotFleetRequestsErrorItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example cancels Spot Fleet request sfr-123f8fc2-cb31-425e-abcd-example2710 and terminates all instances that were launched by the request.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CancelSpotFleetRequests
&SpotFleetRequestId.1=sfr-123f8fc2-cb31-425e-abcd-example2710
&TerminateInstances=true
&AUTHPARAMS
```

#### Sample Response

```
<CancelSpotFleetRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>e12d2fe5-6503-4b4b-911c-example</requestId>
    <unsuccessfulFleetRequestSet/>
    <successfulFleetRequestSet>
        <item>
            <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</
spotFleetRequestId>
            <currentSpotFleetRequestState>cancelled_terminating</
currentSpotFleetRequestState>
            <previousSpotFleetRequestState>active</previousSpotFleetRequestState>
        </item>
    </successfulFleetRequestSet>
</CancelSpotFleetRequestsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CancelSpotInstanceRequests

Cancels one or more Spot Instance requests.

> **Important**
>
> Canceling a Spot Instance request does not terminate running Spot Instances associated with the request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SpotInstanceRequestId.N**

The IDs of the Spot Instance requests.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**spotInstanceRequestSet**

The Spot Instance requests.

Type: Array of CancelledSpotInstanceRequest objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example cancels the specified Spot Instance request.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CancelSpotInstanceRequests
&SpotInstanceRequestId.1=sir-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<CancelSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <state>cancelled</state>
    </item>
  </spotInstanceRequestSet>
</CancelSpotInstanceRequestsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ConfirmProductInstance

Determines whether a product code is associated with an instance. This action can only be used by the owner of the product code. It is useful when a product code owner must verify whether another user's instance is eligible for support.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**ProductCode**

The product code. This must be a product code that you own.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ownerId**

The AWS account ID of the instance owner. This is only present if the product code is attached to the instance.

Type: String

**requestId**

The ID of the request.

Type: String

**return**

The return value of the request. Returns `true` if the specified product code is owned by the requester and associated with the specified instance.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example determines whether the specified product code is associated with the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ConfirmProductInstance
&ProductCode=774F4FF8
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<ConfirmProductInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
  <return>true</return>
  <ownerId>111122223333</ownerId>
</ConfirmProductInstanceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CopyFpgaImage

Copies the specified Amazon FPGA Image (AFI) to the current Region.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

The description for the new AFI.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Name**

The name for the new AFI. The default is the name of the source AFI.

Type: String

Required: No

**SourceFpgaImageId**

The ID of the source AFI.

Type: String

Required: Yes

**SourceRegion**

The Region that contains the source AFI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**fpgaImageId**

The ID of the new AFI.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example copies the specified AFI from the `us-east-1` Region to the current Region (`eu-west-1`).

### Sample Request

```
https://ec2.eu-west-1.amazonaws.com/?Action=CopyFpgaImage
&Name=eu-afi
&SourceFpgaImageId=afi-0d123eabcbfc85456
&SourceRegion=us-east-1
&AUTHPARAMS
```

### Sample Response

```
<CopyFpgaImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>2d55d021-9ca9-45a1-8c5c-453example</requestId>
    <fpgaImageId>afi-06b12350a123fbabc</fpgaImageId>
</CopyFpgaImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CopyImage

Initiates an AMI copy operation. You must specify the source AMI ID and both the source and destination locations. The copy operation must be initiated in the destination Region.

**CopyImage supports the following source to destination copies:**

- Region to Region
- Region to Outpost
- Parent Region to Local Zone
- Local Zone to parent Region
- Between Local Zones with the same parent Region (only supported for certain Local Zones)

**CopyImage does not support the following source to destination copies:**

- Local Zone to non-parent Regions
- Between Local Zones with different parent Regions
- Local Zone to Outpost
- Outpost to Local Zone
- Outpost to Region
- Between Outposts
- Within same Outpost
- Cross-partition copies (use CreateStoreImageTask instead)

**Destination specification**

- Region to Region: The destination Region is the Region in which you initiate the copy operation.
- Region to Outpost: Specify the destination using the `DestinationOutpostArn` parameter (the ARN of the Outpost)
- Region to Local Zone, and Local Zone to Local Zone copies: Specify the destination using the `DestinationAvailabilityZone` parameter (the name of the destination Local Zone) or `DestinationAvailabilityZoneId` parameter (the ID of the destination Local Zone).

**Snapshot encryption**

- Region to Outpost: Backing snapshots copied to an Outpost are encrypted by default using the default encryption key for the Region or the key that you specify. Outposts do not support unencrypted snapshots.
- Region to Local Zone, and Local Zone to Local Zone: Not all Local Zones require encrypted snapshots. In Local Zones that require encrypted snapshots, backing snapshots are automatically encrypted during copy. In Local Zones where encryption is not required, snapshots retain their original encryption state (encrypted or unencrypted) by default.

For more information, including the required permissions for copying an AMI, see Copy an Amazon EC2 AMI in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see Ensuring idempotency in Amazon EC2 API requests in the *Amazon EC2 API Reference*.

Type: String

Required: No

**CopyImageTags**

Specifies whether to copy your user-defined AMI tags to the new AMI.

The following tags are not be copied:

- System tags (prefixed with `aws:`)
- For public and shared AMIs, user-defined tags that are attached by other AWS accounts

Default: Your user-defined AMI tags are not copied.

Type: Boolean

Required: No

**Description**

A description for the new AMI.

Type: String

Required: No

**DestinationAvailabilityZone**

The Local Zone for the new AMI (for example, `cn-north-1-pkx-1a`).

Only one of `DestinationAvailabilityZone`, `DestinationAvailabilityZoneId`, or `DestinationOutpostArn` can be specified.

Type: String

Required: No

**DestinationAvailabilityZoneId**

The ID of the Local Zone for the new AMI (for example, `cnn1-pkx1-az1`).

Only one of `DestinationAvailabilityZone`, `DestinationAvailabilityZoneId`, or `DestinationOutpostArn` can be specified.

Type: String

Required: No

**DestinationOutpostArn**

The Amazon Resource Name (ARN) of the Outpost for the new AMI.

Only specify this parameter when copying an AMI from an AWS Region to an Outpost. The AMI must be in the Region of the destination Outpost. You can't copy an AMI from an Outpost to a Region, from one Outpost to another, or within the same Outpost.

For more information, see Copy AMIs from an AWS Region to an Outpost in the *Amazon EBS User Guide*.

Only one of `DestinationAvailabilityZone`, `DestinationAvailabilityZoneId`, or `DestinationOutpostArn` can be specified.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Encrypted**

Specifies whether to encrypt the snapshots of the copied image.

You can encrypt a copy of an unencrypted snapshot, but you cannot create an unencrypted copy of an encrypted snapshot. The default KMS key for Amazon EBS is used unless you specify a non-default AWS Key Management Service (AWS KMS) KMS key using `KmsKeyId`. For more information, see Use encryption with EBS-backed AMIs in the *Amazon EC2 User Guide*.

Type: Boolean

Required: No

**KmsKeyId**

The identifier of the symmetric AWS Key Management Service (AWS KMS) KMS key to use when creating encrypted volumes. If this parameter is not specified, your AWS managed KMS key for Amazon EBS is used. If you specify a KMS key, you must also set the encrypted state to `true`.

You can specify a KMS key using any of the following:

- Key ID. For example, 1234abcd-12ab-34cd-56ef-1234567890ab.
- Key alias. For example, alias/ExampleAlias.
- Key ARN. For example, arn:aws:kms:us-east-1:012345678910:key/1234abcd-12ab-34cd-56ef-1234567890ab.
- Alias ARN. For example, arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias.

AWS authenticates the KMS key asynchronously. Therefore, if you specify an identifier that is not valid, the action can appear to complete, but eventually fails.

The specified KMS key must exist in the destination Region.

Amazon EBS does not support asymmetric KMS keys.

Type: String

Required: No

**Name**

The name of the new AMI.

Type: String

Required: Yes

**SnapshotCopyCompletionDurationMinutes**

Specify a completion duration, in 15 minute increments, to initiate a time-based AMI copy. The specified completion duration applies to each of the snapshots associated with the AMI. Each snapshot associated with the AMI will be completed within the specified completion duration, with copy throughput automatically adjusted for each snapshot based on its size to meet the timing target.

If you do not specify a value, the AMI copy operation is completed on a best-effort basis.

> **Note**
>
> This parameter is not supported when copying an AMI to or from a Local Zone, or to an Outpost.

For more information, see Time-based copies for Amazon EBS snapshots and EBS-backed AMIs.

Type: Long

Required: No

**SourceImageId**

The ID of the AMI to copy.

Type: String

Required: Yes

**SourceRegion**

The name of the Region that contains the AMI to copy.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the new AMI and new snapshots. You can tag the AMI, the snapshots, or both.

- To tag the new AMI, the value for `ResourceType` must be `image`.
- To tag the new snapshots, the value for `ResourceType` must be `snapshot`. The same tag is applied to all the new snapshots.

If you specify other values for `ResourceType`, the request fails.

To tag an AMI or snapshot after it has been created, see CreateTags.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**imageId**

The ID of the new AMI.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example request copies the AMI in `us-west-2` with the ID `ami-1a2b3c4d`, naming the new AMI `My-Standard-AMI`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CopyImage
&SourceRegion=us-west-2
&SourceImageId=ami-1a2b3c4d
&Name=My-Standard-AMI
&Description=This%20is%20the%20new%20version%20of%20My-Standard-AMI
&ClientToken=550e8400-e29b-41d4-a716-446655440000
&AUTHPARAMS
```

### Sample Response

```
<CopyImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
   <imageId>ami-4d3c2b1a</imageId>
</CopyImageResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# CopySnapshot

Creates an exact copy of an Amazon EBS snapshot.

The location of the source snapshot determines whether you can copy it or not, and the allowed destinations for the snapshot copy.

- If the source snapshot is in a Region, you can copy it within that Region, to another Region, to an Outpost associated with that Region, or to a Local Zone in that Region.
- If the source snapshot is in a Local Zone, you can copy it within that Local Zone, to another Local Zone in the same zone group, or to the parent Region of the Local Zone.
- If the source snapshot is on an Outpost, you can't copy it.

When copying snapshots to a Region, the encryption outcome for the snapshot copy depends on the Amazon EBS encryption by default setting for the destination Region, the encryption status of the source snapshot, and the encryption parameters you specify in the request. For more information, see Encryption and snapshot copying.

Snapshots copied to an Outpost must be encrypted. Unencrypted snapshots are not supported on Outposts. For more information, Amazon EBS local snapshots on Outposts.

> **Note**
>
> Snapshots copies have an arbitrary source volume ID. Do not use this volume ID for any purpose.

For more information, see Copy an Amazon EBS snapshot in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CompletionDurationMinutes**

> **Note**
>
> Not supported when copying snapshots to or from Local Zones or Outposts.

Specify a completion duration, in 15 minute increments, to initiate a time-based snapshot copy. Time-based snapshot copy operations complete within the specified duration. For more information, see Time-based copies.

If you do not specify a value, the snapshot copy operation is completed on a best-effort basis.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 2880.

Required: No

**Description**

A description for the EBS snapshot.

Type: String

Required: No

**DestinationAvailabilityZone**

The Local Zone, for example, `cn-north-1-pkx-1a` to which to copy the snapshot.

> **Note**
>
> Only supported when copying a snapshot to a Local Zone.

Type: String

Required: No

**DestinationOutpostArn**

The Amazon Resource Name (ARN) of the Outpost to which to copy the snapshot.

> **Note**
>
> Only supported when copying a snapshot to an Outpost.

For more information, see Copy snapshots from an AWS Region to an Outpost in the *Amazon EBS User Guide*.

Type: String

Required: No

**DestinationRegion**

The destination Region to use in the `PresignedUrl` parameter of a snapshot copy operation. This parameter is only valid for specifying the destination Region in a `PresignedUrl` parameter, where it is required.

The snapshot copy is sent to the regional endpoint that you sent the HTTP request to (for example, `ec2.us-east-1.amazonaws.com`).

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Encrypted**

To encrypt a copy of an unencrypted snapshot if encryption by default is not enabled, enable encryption using this parameter. Otherwise, omit this parameter. Copies of encrypted snapshots are encrypted, even if you omit this parameter and encryption by default is not enabled. You cannot set this parameter to false. For more information, see Amazon EBS encryption in the *Amazon EBS User Guide*.

Type: Boolean

Required: No

**KmsKeyId**

The identifier of the AWS KMS key to use for Amazon EBS encryption. If this parameter is not specified, your AWS KMS key for Amazon EBS is used. If `KmsKeyId` is specified, the encrypted state must be `true`.

You can specify the KMS key using any of the following:

- Key ID. For example, 1234abcd-12ab-34cd-56ef-1234567890ab.
- Key alias. For example, alias/ExampleAlias.
- Key ARN. For example, arn:aws:kms:us-east-1:012345678910:key/1234abcd-12ab-34cd-56ef-1234567890ab.
- Alias ARN. For example, arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias.

AWS authenticates the KMS key asynchronously. Therefore, if you specify an ID, alias, or ARN that is not valid, the action can appear to complete, but eventually fails.

Type: String

Required: No

**PresignedUrl**

When you copy an encrypted source snapshot using the Amazon EC2 Query API, you must supply a pre-signed URL. This parameter is optional for unencrypted snapshots. For more information, see Query requests.

The `PresignedUrl` should use the snapshot source endpoint, the `CopySnapshot` action, and include the `SourceRegion`, `SourceSnapshotId`, and `DestinationRegion` parameters. The `PresignedUrl` must be signed using AWS Signature Version 4. Because EBS snapshots are stored in Amazon S3, the signing algorithm for this parameter uses the same logic that is described in Authenticating Requests: Using Query Parameters (AWS Signature Version 4) in the *Amazon S3 API Reference*. An invalid or improperly signed `PresignedUrl` will cause the copy operation to fail asynchronously, and the snapshot will move to an `error` state.

Type: String

Required: No

**SourceRegion**

The ID of the Region that contains the snapshot to be copied.

Type: String

Required: Yes

**SourceSnapshotId**

The ID of the EBS snapshot to copy.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the new snapshot.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**snapshotId**

The ID of the new snapshot.

Type: String

**tagSet**

Any tags applied to the new snapshot.

Type: Array of Tag objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Create copy of an unencrypted snapshot in the same Region as the original

This example request copies the snapshot in the us-west-1 Region with the ID `snap-1234567890abcdef0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CopySnapshot
&SourceRegion=us-west-1
&SourceSnapshotId=snap-1234567890abcdef0
&Description=My_snapshot
&AUTHPARAMS
```

#### Sample Response

```
<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <snapshotId>snap-1234567890abcdef1</snapshotId>
</CopySnapshotResponse<
```

### Create a copy of an encrypted snapshot in a Region different from the original

This example request copies an encrypted snapshot in the us-west-1 Region to the us-east-1 Region with the ID `snap-0987654321abcdef0`.

#### Sample Request

```
https://ec2.amazonaws.com/?SourceSnapshotId=snap-005a01bf6eEXAMPLE
&SourceRegion=us-west-1
&KmsKeyId=arn%3Aaws%3Akms%3Aus-west-2%3A210774411744%3Akey%2FfEXAMPLE-24bc-479b-
a9da-7132eEXAMPLE
&Action=CopySnapshot
&Encrypted=true
&DestinationRegion=us-east-1
&AUTHPARAMS
```

### Sample Response

```
<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
 <requestId>256f6c57-6648-4544-a79a-35a03EXAMPLE</requestId>
 <snapshotId>snap-0987654321abcdef0</snapshotId>
</CopySnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CopyVolumes

Creates a crash-consistent, point-in-time copy of an existing Amazon EBS volume within the same Availability Zone. The volume copy can be attached to an Amazon EC2 instance once it reaches the `available` state. For more information, see Copy an Amazon EBS volume.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Iops**

The number of I/O operations per second (IOPS) to provision for the volume copy. Required for `io1` and `io2` volumes. Optional for `gp3` volumes. Omit for all other volume types. Full provisioned IOPS performance can be achieved only once the volume copy is fully initialized.

Valid ranges:

- gp3: `3,000` (*default*) - `80,000` IOPS
- io1: `100` - `64,000` IOPS
- io2: `100` - `256,000` IOPS

> **Note**
>
> Instances built on the Nitro System can support up to 256,000 IOPS. Other instances can support up to 32,000 IOPS.

Type: Integer

Required: No

**MultiAttachEnabled**

Indicates whether to enable Amazon EBS Multi-Attach for the volume copy. If you enable Multi-Attach, you can attach the volume to up to 16 Nitro instances in the same Availability Zone simultaneously. Supported with `io1` and `io2` volumes only. For more information, see Amazon EBS Multi-Attach.

Type: Boolean

Required: No

**Size**

The size of the volume copy, in GiBs. The size must be equal to or greater than the size of the source volume. If not specified, the size defaults to the size of the source volume.

Maximum supported sizes:

- gp2: `16,384` GiB
- gp3: `65,536` GiB
- io1: `16,384` GiB
- io2: `65,536` GiB
- st1 and sc1: `16,384` GiB
- standard: `1024` GiB

Type: Integer

Required: No

**SourceVolumeId**

The ID of the source EBS volume to copy.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the volume copy during creation.

Type: Array of TagSpecification objects

Required: No

**Throughput**

The throughput to provision for the volume copy, in MiB/s. Supported for gp3 volumes only. Omit for all other volume types. Full provisioned throughput performance can be achieved only once the volume copy is fully initialized.

Valid Range: `125 - 2000` MiB/s

Type: Integer

Required: No

**VolumeType**

The volume type for the volume copy. If not specified, the volume type defaults to gp2.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**volumeSet**

Information about the volume copy.

Type: Array of Volume objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateCapacityManagerDataExport

Creates a new data export configuration for EC2 Capacity Manager. This allows you to automatically export capacity usage data to an S3 bucket on a scheduled basis. The exported data includes metrics for On-Demand, Spot, and Capacity Reservations usage across your organization.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**OutputFormat**

The file format for the exported data. Parquet format is recommended for large datasets and better compression.

Type: String

Valid Values: `csv | parquet`

Required: Yes

**S3BucketName**

The name of the S3 bucket where the capacity data export files will be delivered. The bucket must exist and you must have write permissions to it.

Type: String

Required: Yes

**S3BucketPrefix**

The S3 key prefix for the exported data files. This allows you to organize exports in a specific folder structure within your bucket. If not specified, files are placed at the bucket root.

Type: String

Required: No

**Schedule**

The frequency at which data exports are generated.

Type: String

Valid Values: `hourly`

Required: Yes

**TagSpecification.N**

The tags to apply to the data export configuration. You can tag the export for organization and cost tracking purposes.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**capacityManagerDataExportId**

The unique identifier for the created data export configuration. Use this ID to reference the export in other API calls.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a data export configuration that delivers hourly Parquet files to an S3 bucket.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateCapacityManagerDataExport
&S3BucketName=my-capacity-exports-bucket
&S3BucketPrefix=capacity-data/
&Schedule=hourly
&OutputFormat=parquet
&AUTHPARAMS
```

#### Sample Response

```
<CreateCapacityManagerDataExportResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <capacityManagerDataExportId>cmde-0abcd1234EXAMPLE</capacityManagerDataExportId>
</CreateCapacityManagerDataExportResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateCapacityReservation

Creates a new Capacity Reservation with the specified attributes. Capacity Reservations enable you to reserve capacity for your Amazon EC2 instances in a specific Availability Zone for any duration.

You can create a Capacity Reservation at any time, and you can choose when it starts. You can create a Capacity Reservation for immediate use or you can request a Capacity Reservation for a future date.

For more information, see Reserve compute capacity with On-Demand Capacity Reservations in the *Amazon EC2 User Guide*.

Your request to create a Capacity Reservation could fail if:

- Amazon EC2 does not have sufficient capacity. In this case, try again at a later time, try in a different Availability Zone, or request a smaller Capacity Reservation. If your workload is flexible across instance types and sizes, try with different instance attributes.
- The requested quantity exceeds your On-Demand Instance quota. In this case, increase your On-Demand Instance quota for the requested instance type and try again. For more information, see Amazon EC2 Service Quotas in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZone**

The Availability Zone in which to create the Capacity Reservation.

Type: String

Required: No

**AvailabilityZoneId**

The ID of the Availability Zone in which to create the Capacity Reservation.

Type: String

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**CommitmentDuration**

> **Note**
>
> Required for future-dated Capacity Reservations only. To create a Capacity Reservation for immediate use, omit this parameter.

Specify a commitment duration, in seconds, for the future-dated Capacity Reservation.

The commitment duration is a minimum duration for which you commit to having the future-dated Capacity Reservation in the `active` state in your account after it has been delivered.

For more information, see Commitment duration.

Type: Long

Valid Range: Minimum value of 1. Maximum value of 200000000.

Required: No

**DeliveryPreference**

> **Note**
>
> Required for future-dated Capacity Reservations only. To create a Capacity Reservation for immediate use, omit this parameter.

Indicates that the requested capacity will be delivered in addition to any running instances or reserved capacity that you have in your account at the requested date and time.

The only supported value is `incremental`.

Type: String

Valid Values: `fixed | incremental`

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EbsOptimized**

Indicates whether the Capacity Reservation supports EBS-optimized instances. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS- optimized instance.

Type: Boolean

Required: No

**EndDate**

The date and time at which the Capacity Reservation expires. When a Capacity Reservation expires, the reserved capacity is released and you can no longer launch instances into it. The Capacity Reservation's state changes to `expired` when it reaches its end date and time.

You must provide an `EndDate` value if `EndDateType` is `limited`. Omit `EndDate` if `EndDateType` is `unlimited`.

If the `EndDateType` is `limited`, the Capacity Reservation is cancelled within an hour from the specified time. For example, if you specify 5/31/2019, 13:30:55, the Capacity Reservation is guaranteed to end between 13:30:55 and 14:30:55 on 5/31/2019.

If you are requesting a future-dated Capacity Reservation, you can't specify an end date and time that is within the commitment duration.

Type: Timestamp

Required: No

**EndDateType**

Indicates the way in which the Capacity Reservation ends. A Capacity Reservation can have one of the following end types:

- `unlimited` - The Capacity Reservation remains active until you explicitly cancel it. Do not provide an `EndDate` if the `EndDateType` is `unlimited`.
- `limited` - The Capacity Reservation expires automatically at a specified date and time. You must provide an `EndDate` value if the `EndDateType` value is `limited`.

Type: String

Valid Values: `unlimited | limited`

Required: No

**EphemeralStorage**

*Deprecated.*

Type: Boolean

Required: No

**InstanceCount**

The number of instances for which to reserve capacity.

> **Note**
>
> You can request future-dated Capacity Reservations for an instance count with a minimum of 32 vCPUs. For example, if you request a future-dated Capacity Reservation for `m5.xlarge` instances, you must request at least 8 instances (*8 * m5.xlarge = 32 vCPUs*).

Valid range: 1 - 1000

Type: Integer

Required: Yes

**InstanceMatchCriteria**

Indicates the type of instance launches that the Capacity Reservation accepts. The options include:

- `open` - The Capacity Reservation automatically matches all instances that have matching attributes (instance type, platform, and Availability Zone). Instances that have matching attributes run in the Capacity Reservation automatically without specifying any additional parameters.
- `targeted` - The Capacity Reservation only accepts instances that have matching attributes (instance type, platform, and Availability Zone), and explicitly target the Capacity Reservation. This ensures that only permitted instances can use the reserved capacity.

> **Note**
>
> If you are requesting a future-dated Capacity Reservation, you must specify `targeted`.

Default: `open`

Type: String

Valid Values: `open | targeted`

Required: No

**InstancePlatform**

The type of operating system for which to reserve capacity.

Type: String

Valid Values: `Linux/UNIX | Red Hat Enterprise Linux | SUSE Linux | Windows | Windows with SQL Server | Windows with SQL Server Enterprise | Windows with SQL Server Standard | Windows with SQL Server Web | Linux with SQL Server Standard | Linux with SQL Server Web | Linux with SQL Server Enterprise | RHEL with SQL Server Standard | RHEL with SQL Server Enterprise | RHEL with SQL Server Web | RHEL with HA | RHEL with HA and SQL Server Standard | RHEL with HA and SQL Server Enterprise | Ubuntu Pro`

Required: Yes

**InstanceType**

The instance type for which to reserve capacity.

> **Note**
>
> You can request future-dated Capacity Reservations for instance types in the C, M, R, I, T, and G instance families only.

For more information, see Instance types in the *Amazon EC2 User Guide*.

Type: String

Required: Yes

**OutpostArn**

> **Note**
>
> Not supported for future-dated Capacity Reservations.

The Amazon Resource Name (ARN) of the Outpost on which to create the Capacity Reservation.

Type: String

Pattern: `^arn:aws([a-z-]+)?:outposts:[a-z\d-]+:\d{12}:outpost/op-[a-f0-9]{17}$`

Required: No

**PlacementGroupArn**

> **Note**
>
> Not supported for future-dated Capacity Reservations.

The Amazon Resource Name (ARN) of the cluster placement group in which to create the Capacity Reservation. For more information, see Capacity Reservations for cluster placement groups in the *Amazon EC2 User Guide*.

Type: String

Pattern: `^arn:aws([a-z-]+)?:ec2:[a-z\d-]+:\d{12}:placement-group/^.{1,255}$`

Required: No

**StartDate**

> **Note**
>
> Required for future-dated Capacity Reservations only. To create a Capacity Reservation for immediate use, omit this parameter.

The date and time at which the future-dated Capacity Reservation should become available for use, in the ISO8601 format in the UTC time zone (`YYYY-MM-DDThh:mm:ss.sssZ`).

You can request a future-dated Capacity Reservation between 5 and 120 days in advance.

Type: Timestamp

Required: No

**TagSpecifications.N**

The tags to apply to the Capacity Reservation during launch.

Type: Array of TagSpecification objects

Required: No

**Tenancy**

Indicates the tenancy of the Capacity Reservation. A Capacity Reservation can have one of the following tenancy settings:

- `default` - The Capacity Reservation is created on hardware that is shared with other AWS accounts.
- `dedicated` - The Capacity Reservation is created on single-tenant hardware that is dedicated to a single AWS account.

Type: String

Valid Values: `default | dedicated`

Required: No

## Response Elements

The following elements are returned by the service.

**capacityReservation**

Information about the Capacity Reservation.

Type: CapacityReservation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateCapacityReservationBySplitting

Create a new Capacity Reservation by splitting the capacity of the source Capacity Reservation. The new Capacity Reservation will have the same attributes as the source Capacity Reservation except for tags. The source Capacity Reservation must be `active` and owned by your AWS account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceCount**

The number of instances to split from the source Capacity Reservation.

Type: Integer

Required: Yes

**SourceCapacityReservationId**

The ID of the Capacity Reservation from which you want to split the capacity.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the new Capacity Reservation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**destinationCapacityReservation**

Information about the destination Capacity Reservation.

Type: CapacityReservation object

**instanceCount**

The number of instances in the new Capacity Reservation. The number of instances in the source Capacity Reservation was reduced by this amount.

Type: Integer

**requestId**

The ID of the request.

Type: String

**sourceCapacityReservation**

Information about the source Capacity Reservation.

Type: CapacityReservation object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateCapacityReservationCancellationQuote

Generates a cancellation quote for a future-dated Capacity Reservation that is within its commitment duration. The quote includes the cancellation terms and a quote ID that you can pass to the `CancelCapacityReservation` action. Cancellation quotes are valid for 24 hours.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: Yes

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to apply to the cancellation quote.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**capacityReservationCancellationQuote**

Information about the Capacity Reservation cancellation quote.

Type: CapacityReservationCancellationQuote object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateCapacityReservationFleet

Creates a Capacity Reservation Fleet. For more information, see Create a Capacity Reservation Fleet in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationStrategy**

The strategy used by the Capacity Reservation Fleet to determine which of the specified instance types to use. Currently, only the `prioritized` allocation strategy is supported. For more information, see Allocation strategy in the *Amazon EC2 User Guide*.

Valid values: `prioritized`

Type: String

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndDate**

The date and time at which the Capacity Reservation Fleet expires. When the Capacity Reservation Fleet expires, its state changes to `expired` and all of the Capacity Reservations in the Fleet expire.

The Capacity Reservation Fleet expires within an hour after the specified time. For example, if you specify `5/31/2019`, `13:30:55`, the Capacity Reservation Fleet is guaranteed to expire between `13:30:55` and `14:30:55` on `5/31/2019`.

Type: Timestamp

Required: No

**InstanceMatchCriteria**

Indicates the type of instance launches that the Capacity Reservation Fleet accepts. All Capacity Reservations in the Fleet inherit this instance matching criteria.

Currently, Capacity Reservation Fleets support `open` instance matching criteria only. This means that instances that have matching attributes (instance type, platform, and Availability Zone) run in the Capacity Reservations automatically. Instances do not need to explicitly target a Capacity Reservation Fleet to use its reserved capacity.

Type: String

Valid Values: `open`

Required: No

**InstanceTypeSpecification.N**

Information about the instance types for which to reserve the capacity.

Type: Array of ReservationFleetInstanceSpecification objects

Required: No

**TagSpecification.N**

The tags to assign to the Capacity Reservation Fleet. The tags are automatically assigned to the Capacity Reservations in the Fleet.

Type: Array of TagSpecification objects

Required: No

**Tenancy**

Indicates the tenancy of the Capacity Reservation Fleet. All Capacity Reservations in the Fleet inherit this tenancy. The Capacity Reservation Fleet can have one of the following tenancy settings:

- `default` - The Capacity Reservation Fleet is created on hardware that is shared with other AWS accounts.
- `dedicated` - The Capacity Reservations are created on single-tenant hardware that is dedicated to a single AWS account.

Type: String

Valid Values: `default`

Required: No

**TotalTargetCapacity**

The total number of capacity units to be reserved by the Capacity Reservation Fleet. This value, together with the instance type weights that you assign to each instance type used by the Fleet determine the number of instances for which the Fleet reserves capacity. Both values are based on units that make sense for your workload. For more information, see Total target capacity in the *Amazon EC2 User Guide*.

Type: Integer

Required: Yes

## Response Elements

The following elements are returned by the service.

**allocationStrategy**

The allocation strategy used by the Capacity Reservation Fleet.

Type: String

**capacityReservationFleetId**

The ID of the Capacity Reservation Fleet.

Type: String

**createTime**

The date and time at which the Capacity Reservation Fleet was created.

Type: Timestamp

**endDate**

The date and time at which the Capacity Reservation Fleet expires.

Type: Timestamp

**fleetCapacityReservationSet**

Information about the individual Capacity Reservations in the Capacity Reservation Fleet.

Type: Array of FleetCapacityReservation objects

**instanceMatchCriteria**

The instance matching criteria for the Capacity Reservation Fleet.

Type: String

Valid Values: open

**requestId**

The ID of the request.

Type: String

**state**

The status of the Capacity Reservation Fleet.

Type: String

Valid Values: `submitted | modifying | active | partially_fulfilled | expiring | expired | cancelling | cancelled | failed`

**tagSet**

The tags assigned to the Capacity Reservation Fleet.

Type: Array of Tag objects

**tenancy**

Indicates the tenancy of Capacity Reservation Fleet.

Type: String

Valid Values: `default`

**totalFulfilledCapacity**

The requested capacity units that have been successfully reserved.

Type: Double

**totalTargetCapacity**

The total number of capacity units for which the Capacity Reservation Fleet reserves capacity.

Type: Integer

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateCarrierGateway

Creates a carrier gateway. For more information about carrier gateways, see Carrier gateways in the *AWS Wavelength Developer Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to associate with the carrier gateway.

Type: Array of TagSpecification objects

Required: No

**VpcId**

The ID of the VPC to associate with the carrier gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**carrierGateway**

Information about the carrier gateway.

Type: CarrierGateway object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateClientVpnEndpoint

Creates a Client VPN endpoint. A Client VPN endpoint is the resource you create and configure to enable and manage client VPN sessions. It is the destination endpoint at which all client VPN sessions are terminated.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Authentication.N**

Information about the authentication method to be used to authenticate clients.

Type: Array of ClientVpnAuthenticationRequest objects

Required: Yes

**ClientCidrBlock**

The IPv4 address range, in CIDR notation, from which to assign client IP addresses. The address range cannot overlap with the local CIDR of the VPC in which the associated subnet is located, or the routes that you add manually. The address range cannot be changed after the Client VPN endpoint has been created. Client CIDR range must have a size of at least /22 and must not be greater than /12.

Type: String

Required: No

**ClientConnectOptions**

The options for managing connection authorization for new client connections.

Type: ClientConnectOptions object

Required: No

**ClientLoginBannerOptions**

Options for enabling a customizable text banner that will be displayed on AWS provided clients when a VPN session is established.

Type: ClientLoginBannerOptions object

Required: No

**ClientRouteEnforcementOptions**

Client route enforcement is a feature of the Client VPN service that helps enforce administrator defined routes on devices connected through the VPN. T his feature helps improve your security posture by ensuring that network traffic originating from a connected client is not inadvertently sent outside the VPN tunnel.

Client route enforcement works by monitoring the route table of a connected device for routing policy changes to the VPN connection. If the feature detects any VPN routing policy modifications, it will automatically force an update to the route table, reverting it back to the expected route configurations.

Type: ClientRouteEnforcementOptions object

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**ConnectionLogOptions**

Information about the client connection logging options.

If you enable client connection logging, data about client connections is sent to a Cloudwatch Logs log stream. The following information is logged:

- Client connection requests
- Client connection results (successful and unsuccessful)
- Reasons for unsuccessful client connection requests
- Client connection termination time

Type: ConnectionLogOptions object

Required: Yes

**Description**

A brief description of the Client VPN endpoint.

Type: String

Required: No

**DisconnectOnSessionTimeout**

Indicates whether the client VPN session is disconnected after the maximum timeout specified in `SessionTimeoutHours` is reached. If `true`, users are prompted to reconnect client VPN. If `false`, client VPN attempts to reconnect automatically. The default value is `true`.

Type: Boolean

Required: No

**DnsServers.N**

Information about the DNS servers to be used for DNS resolution. A Client VPN endpoint can have up to two DNS servers. If no DNS server is specified, the DNS address configured on the device is used for the DNS server.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndpointIpAddressType**

The IP address type for the Client VPN endpoint. Valid values are `ipv4` (default) for IPv4 addressing only, `ipv6` for IPv6 addressing only, or `dual-stack` for both IPv4 and IPv6 addressing. When set to `dual-stack`, clients can connect to the endpoint using either IPv4 or IPv6 addresses..

Type: String

Valid Values: `ipv4 | ipv6 | dual-stack`

Required: No

**SecurityGroupId.N**

The IDs of one or more security groups to apply to the target network. You must also specify the ID of the VPC that contains the security groups.

Type: Array of strings

Required: No

**SelfServicePortal**

Specify whether to enable the self-service portal for the Client VPN endpoint.

Default Value: `enabled`

Type: String

Valid Values: `enabled | disabled`

Required: No

**ServerCertificateArn**

The ARN of the server certificate. For more information, see the AWS Certificate Manager User Guide.

Type: String

Required: Yes

**SessionTimeoutHours**

The maximum VPN session duration time in hours.

Valid values: `8 | 10 | 12 | 24`

Default value: `24`

Type: Integer

Required: No

**SplitTunnel**

Indicates whether split-tunnel is enabled on the AWS Client VPN endpoint.

By default, split-tunnel on a VPN endpoint is disabled.

For information about split-tunnel VPN endpoints, see Split-tunnel AWS Client VPN endpoint in the *AWS Client VPN Administrator Guide*.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to apply to the Client VPN endpoint during creation.

Type: Array of TagSpecification objects

Required: No

**TrafficIpAddressType**

The IP address type for traffic within the Client VPN tunnel. Valid values are `ipv4` (default) for IPv4 traffic only, `ipv6` for IPv6 addressing only, or `dual-stack` for both IPv4 and IPv6 traffic. When set to `dual-stack`, clients can access both IPv4 and IPv6 resources through the VPN .

Type: String

Valid Values: `ipv4 | ipv6 | dual-stack`

Required: No

**TransitGatewayConfiguration**

The Transit Gateway configuration for the Client VPN endpoint. Use this parameter to associate the endpoint with a Transit Gateway instead of a VPC. You cannot specify both `TransitGatewayConfiguration` and `VpcId/SecurityGroupIds`.

Type: TransitGatewayConfigurationInputStructure object

Required: No

**TransportProtocol**

The transport protocol to be used by the VPN session.

Default value: udp

Type: String

Valid Values: `tcp | udp`

Required: No

**VpcId**

The ID of the VPC to associate with the Client VPN endpoint. If no security group IDs are specified in the request, the default security group for the VPC is applied.

Type: String

Required: No

**VpnPort**

The port number to assign to the Client VPN endpoint for TCP and UDP traffic.

Valid Values: `443 | 1194`

Default Value: `443`

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**clientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

**dnsName**

The DNS name to be used by clients when establishing their VPN session.

Type: String

**requestId**

The ID of the request.

Type: String

**status**

The current state of the Client VPN endpoint.

Type: ClientVpnEndpointStatus object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateClientVpnEndpoint
&ClientCidrBlock=11.0.0.0/16
&ServerCertificateArn=arn:aws:acm:us-
east-1:123456789098:certificate/82916b3c-7449-43cf-ab9e-EXAMPLE
&Authentication.1.Type=certificate-authentication
&Authentication.1.MutualAuthentication.1.ClientRootCertificateChainArn=arn:aws:acm:us-
east-1:123456789098:certificate/82916b3c-7449-43cf-ab9e-EXAMPLE
&ConnectionLogOptions.Enabled=false
&DnsServers=11.11.0.1
&AUTHPARAMS
```

#### Sample Response

```
<CreateClientVpnEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>c11b2aa2-c48d-4711-a394-43cbe8961c46</requestId>
    <dnsName>cvpn-endpoint-00c5d11fc4729f2a5.prod.clientvpn.us-east-1.amazonaws.com</
dnsName>
    <status>
```

```
        <code>pending-associate</code>
    </status>
    <clientVpnEndpointId>cvpn-endpoint-00c5d11fc4729f2a5</clientVpnEndpointId>
</CreateClientVpnEndpointResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateClientVpnRoute

Adds a route to a network to a Client VPN endpoint. Each Client VPN endpoint has a route table that describes the available destination network routes. Each route in the route table specifies the path for traffic to specific resources or networks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**ClientVpnEndpointId**

The ID of the Client VPN endpoint to which to add the route.

Type: String

Required: Yes

**Description**

A brief description of the route.

Type: String

Required: No

**DestinationCidrBlock**

The IPv4 address range, in CIDR notation, of the route destination. For example:

- To add a route for Internet access, enter `0.0.0.0/0`
- To add a route for a peered VPC, enter the peered VPC's IPv4 CIDR range
- To add a route for an on-premises network, enter the AWS Site-to-Site VPN connection's IPv4 CIDR range

- To add a route for the local network, enter the client CIDR range

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TargetVpcSubnetId**

The ID of the subnet through which you want to route traffic. The specified subnet must be an existing target network of the Client VPN endpoint.

Alternatively, if you're adding a route for the local network, specify `local`.

This parameter is required for VPC-based Client VPN endpoints. For Transit Gateway-based endpoints, this parameter is not required.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**status**

The current state of the route.

Type: ClientVpnRouteStatus object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example adds a route for Internet access to the Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateClientVpnRoute
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&DestinationCidrBlock=0.0.0.0/0
&TargetVpcSubnetId=subnet-057fa0918fEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<CreateClientVpnRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>5b301186-e6d3-436b-87d6-7c400EXAMPLE</requestId>
    <status>
        <code>creating</code>
    </status>
</CreateClientVpnRouteResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateCoipCidr

Creates a range of customer-owned IP addresses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

A customer-owned IP address range to create.

Type: String

Required: Yes

**CoipPoolId**

The ID of the address pool.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**coipCidr**

Information about a range of customer-owned IP addresses.

Type: CoipCidr object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateCoipPool

Creates a pool of customer-owned IP (CoIP) addresses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: Yes

**TagSpecification.N**

The tags to assign to the CoIP address pool.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**coipPool**

Information about the CoIP address pool.

Type: CoipPool object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateCustomerGateway

Provides information to AWS about your customer gateway device. The customer gateway device is the appliance at your end of the VPN connection. You must provide the IP address of the customer gateway device's external interface. The IP address must be static and can be behind a device performing network address translation (NAT).

For devices that use Border Gateway Protocol (BGP), you can also provide the device's BGP Autonomous System Number (ASN). You can use an existing ASN assigned to your network. If you don't have an ASN already, you can use a private ASN. For more information, see Customer gateway options for your Site-to-Site VPN connection in the *AWS Site-to-Site VPN User Guide*.

To create more than one customer gateway with the same VPN type, IP address, and BGP ASN, specify a unique device name for each customer gateway. An identical request returns information about the existing customer gateway; it doesn't create a new customer gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**BgpAsn**

For customer gateway devices that support BGP, specify the device's ASN. You must specify either `BgpAsn` or `BgpAsnExtended` when creating the customer gateway. If the ASN is larger than `2,147,483,647`, you must use `BgpAsnExtended`.

Default: 65000

Valid values: 1 to `2,147,483,647`

Type: Integer

Required: No

**BgpAsnExtended**

For customer gateway devices that support BGP, specify the device's ASN. You must specify either `BgpAsn` or `BgpAsnExtended` when creating the customer gateway. If the ASN is larger than `2,147,483,647`, you must use `BgpAsnExtended`.

Valid values: 2,147,483,648 to 4,294,967,295

Type: Long

Required: No

**CertificateArn**

The Amazon Resource Name (ARN) for the customer gateway certificate.

Type: String

Required: No

**DeviceName**

A name for the customer gateway device.

Length Constraints: Up to 255 characters.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpAddress**

The IP address for the customer gateway device's outside interface. The address must be static. If `OutsideIpAddressType` in your VPN connection options is set to `PrivateIpv4`, you can use an RFC6598 or RFC1918 private IPv4 address. If `OutsideIpAddressType` is set to `Ipv6`, you can use an IPv6 address.

Type: String

Required: No

**PublicIp**

*This member has been deprecated.* The Internet-routable IP address for the customer gateway's outside interface. The address must be static.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the customer gateway.

Type: Array of TagSpecification objects

Required: No

**Type**

The type of VPN connection that this customer gateway supports (`ipsec.1`).

Type: String

Valid Values: `ipsec.1`

Required: Yes

## Response Elements

The following elements are returned by the service.

**customerGateway**

Information about the customer gateway.

Type: CustomerGateway object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a customer gateway with the name `my-device`, the IP address `12.1.2.3`, and BGP ASN 65534.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateCustomerGateway
&Type=ipsec.1
&IpAddress=12.1.2.3
&BgpAsn=65534
&DeviceName=my-device
&AUTHPARAMS
```

#### Sample Response

```
<CreateCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <customerGateway>
      <customerGatewayId>cgw-11223344556677abc</customerGatewayId>
      <state>pending</state>
      <type>ipsec.1</type>
      <ipAddress>12.1.2.3</ipAddress>
      <bgpAsn>65534</bgpAsn>
      <deviceName>my-device</deviceName>
      <tagSet/>
   </customerGateway>
</CreateCustomerGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateDefaultSubnet

Creates a default subnet with a size `/20` IPv4 CIDR block in the specified Availability Zone in your default VPC. You can have only one default subnet per Availability Zone. For more information, see Create a default subnet in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZone**

The Availability Zone in which to create the default subnet.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified, but not both.

Type: String

Required: No

**AvailabilityZoneId**

The ID of the Availability Zone.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified, but not both.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Ipv6Native**

Indicates whether to create an IPv6 only subnet. If you already have a default subnet for this Availability Zone, you must delete it before you can create an IPv6 only subnet.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**subnet**

Information about the subnet.

Type: Subnet object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a default subnet in Availability Zone `us-east-2a`.

#### Sample Request

```
https://ec2.us-east-2.amazonaws.com/?Action=CreateDefaultSubnet
&AvailabilityZone=us-east-2a
&AUTHPARAMS
```

#### Sample Response

```
<CreateDefaultSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>12e2fb2e-e566-488a-926d-4655example</requestId>
    <subnet>
```

```
        <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation>
        <availabilityZone>us-east-2a</availabilityZone>
        <availableIpAddressCount>4091</availableIpAddressCount>
        <cidrBlock>172.31.32.0/20</cidrBlock>
        <defaultForAz>true</defaultForAz>
        <ipv6CidrBlockAssociationSet/>
        <mapPublicIpOnLaunch>true</mapPublicIpOnLaunch>
        <state>available</state>
        <subnetId>subnet-111f7123</subnetId>
        <tagSet/>
        <vpcId>vpc-8eaaeabc</vpcId>
    </subnet>
</CreateDefaultSubnetResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateDefaultVpc

Creates a default VPC with a size /16 IPv4 CIDR block and a default subnet in each Availability Zone. For more information about the components of a default VPC, see Default VPCs in the *Amazon VPC User Guide*. You cannot specify the components of the default VPC yourself.

If you deleted your previous default VPC, you can create a default VPC. You cannot have more than one default VPC per Region.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpc**

Information about the VPC.

Type: Vpc object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a default VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateDefaultVpc
&AUTHPARAMS
```

#### Sample Response

```
<CreateDefaultVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>056298f3-5f3e-48fb-9221-7c0example</requestId>
    <vpc>
        <cidrBlock>172.31.0.0/16</cidrBlock>
        <dhcpOptionsId>dopt-61079b07</dhcpOptionsId>
        <instanceTenancy>default</instanceTenancy>
        <ipv6CidrBlockAssociationSet/>
        <isDefault>true</isDefault>
        <state>pending</state>
        <tagSet/>
        <vpcId>vpc-3f139646</vpcId>
    </vpc>
</CreateDefaultVpcResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateDelegateMacVolumeOwnershipTask

Delegates ownership of the Amazon EBS root volume for an Apple silicon Mac instance to an administrative user.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the Amazon EC2 Mac instance.

Type: String

Required: Yes

**MacCredentials**

Specifies the following credentials:

- **Internal disk administrative user**
  - **Username** - Only the default administrative user (`aws-managed-user`) is supported and it is used by default. You can't specify a different administrative user.

- **Password** - If you did not change the default password for `aws-managed-user`, specify the default password, which is *blank*. Otherwise, specify your password.

- **Amazon EBS root volume administrative user**
  - **Username** - If you did not change the default administrative user, specify `ec2-user`. Otherwise, specify the username for your administrative user.
  - **Password** - Specify the password for the administrative user.

The credentials must be specified in the following JSON format:

```
{ "internalDiskPassword":"internal-disk-admin_password",
"rootVolumeUsername":"root-volume-admin_username",
"rootVolumepassword":"root-volume-admin_password" }
```

Type: String

Required: Yes

**TagSpecification.N**

The tags to assign to the volume ownership delegation task.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**macModificationTask**

Information about the volume ownership delegation task.

Type: MacModificationTask object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateDhcpOptions

Creates a custom set of DHCP options. After you create a DHCP option set, you associate it with a VPC. After you associate a DHCP option set with a VPC, all existing and newly launched instances in the VPC use this set of DHCP options.

The following are the individual DHCP options you can specify. For more information, see DHCP option sets in the *Amazon VPC User Guide*.

- `domain-name` - If you're using AmazonProvidedDNS in `us-east-1`, specify `ec2.internal`. If you're using AmazonProvidedDNS in any other Region, specify `region.compute.internal`. Otherwise, specify a custom domain name. This value is used to complete unqualified DNS hostnames.

  Some Linux operating systems accept multiple domain names separated by spaces. However, Windows and other Linux operating systems treat the value as a single domain, which results in unexpected behavior. If your DHCP option set is associated with a VPC that has instances running operating systems that treat the value as a single domain, specify only one domain name.
- `domain-name-servers` - The IP addresses of up to four DNS servers, or AmazonProvidedDNS. To specify multiple domain name servers in a single parameter, separate the IP addresses using commas. To have your instances receive custom DNS hostnames as specified in `domain-name`, you must specify a custom DNS server.
- `ntp-servers` - The IP addresses of up to eight Network Time Protocol (NTP) servers (four IPv4 addresses and four IPv6 addresses).
- `netbios-name-servers` - The IP addresses of up to four NetBIOS name servers.
- `netbios-node-type` - The NetBIOS node type (1, 2, 4, or 8). We recommend that you specify 2. Broadcast and multicast are not supported. For more information about NetBIOS node types, see RFC 2132.
- `ipv6-address-preferred-lease-time` - A value (in seconds, minutes, hours, or years) for how frequently a running instance with an IPv6 assigned to it goes through DHCPv6 lease renewal. Acceptable values are between 140 and 2147483647 seconds (approximately 68 years). If no value is entered, the default lease time is 140 seconds. If you use long-term addressing for EC2 instances, you can increase the lease time and avoid frequent lease renewal requests. Lease renewal typically occurs when half of the lease time has elapsed.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DhcpConfiguration.N**

A DHCP configuration option.

Type: Array of NewDhcpConfiguration objects

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to assign to the DHCP option.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**dhcpOptions**

A set of DHCP options.

Type: DhcpOptions object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a set of DHCP options with a domain name `example.com` and two DNS servers (`10.2.5.1` and `10.2.5.2`). The DNS servers' IP addresses are specified in a single parameter, separated by commas, to preserve the order in which they are specified.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateDhcpOptions
&DhcpConfiguration.1.Key=domain-name
&DhcpConfiguration.1.Value.1=example.com
&DhcpConfiguration.2.Key=domain-name-servers
&DhcpConfiguration.2.Value.1=10.2.5.1,10.2.5.2
&DhcpConfiguration.3.Key=ipv6-address-preferred-lease-time
&DhcpConfiguration.3.Value.1=140
&AUTHPARAMS
```

#### Sample Response

```
<CreateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <dhcpOptions>
      <dhcpOptionsId>dopt-096c1234cade2dabc</dhcpOptionsId>
      <dhcpConfigurationSet>
        <item>
          <key>domain-name</key>
          <valueSet>
            <item>
              <value>example.com</value>
            </item>
          </valueSet>
        </item>
        <item>
```

```
          <key>domain-name-servers</key>
          <valueSet>
            <item>
              <value>10.2.5.1</value>
            </item>
            <item>
              <value>10.2.5.2</value>
            </item>
          </valueSet>
        </item>
        <item>
          <key>ipv6-address-preferred-lease-time</key>
          <valueSet>
            <item>
              <value>140</value>
            </item>
          </valueSet>
        </item>
      </dhcpConfigurationSet>
      <tagSet/>
  </dhcpOptions>
</CreateDhcpOptionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateEgressOnlyInternetGateway

[IPv6 only] Creates an egress-only internet gateway for your VPC. An egress-only internet gateway is used to enable outbound communication over IPv6 from instances in your VPC to the internet, and prevents hosts outside of your VPC from initiating an IPv6 connection with your instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to assign to the egress-only internet gateway.

Type: Array of TagSpecification objects

Required: No

**VpcId**

The ID of the VPC for which to create the egress-only internet gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

**egressOnlyInternetGateway**

Information about the egress-only internet gateway.

Type: EgressOnlyInternetGateway object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates an egress-only internet gateway in VPC vpc-1a2b3c4d.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateEgressOnlyInternetGateway
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<CreateEgressOnlyInternetGatewayResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
```

```
    <requestId>c617595f-6c29-4a00-a941-example</requestId>
    <egressOnlyInternetGateway>
        <attachmentSet>
            <item>
                <state>attached</state>
                <vpcId>vpc-1a2b3c4d</vpcId>
            </item>
        </attachmentSet>
        <egressOnlyInternetGatewayId>eigw-01eadbd45ecd7943f</
egressOnlyInternetGatewayId>
    </egressOnlyInternetGateway>
</CreateEgressOnlyInternetGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateFleet

Creates an EC2 Fleet that contains the configuration information for On-Demand Instances and Spot Instances. Instances are launched immediately if there is available capacity.

A single EC2 Fleet can include multiple launch specifications that vary by instance type, AMI, Availability Zone, or subnet.

For more information, see EC2 Fleet in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. If you do not specify a client token, a randomly generated token is used for the request to ensure idempotency.

For more information, see Ensuring idempotency.

Type: String

Required: No

**Context**

Reserved.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ExcessCapacityTerminationPolicy**

Indicates whether running instances should be terminated if the total target capacity of the EC2 Fleet is decreased below the current size of the EC2 Fleet.

Supported only for fleets of type `maintain`.

Type: String

Valid Values: `no-termination | termination`

Required: No

**LaunchTemplateConfigs.N**

The configuration for the EC2 Fleet.

Type: Array of FleetLaunchTemplateConfigRequest objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Required: Yes

**OnDemandOptions**

Describes the configuration of On-Demand Instances in an EC2 Fleet.

Type: OnDemandOptionsRequest object

Required: No

**ReplaceUnhealthyInstances**

Indicates whether EC2 Fleet should replace unhealthy Spot Instances. Supported only for fleets of type `maintain`. For more information, see EC2 Fleet health checks in the *Amazon EC2 User Guide*.

Type: Boolean

Required: No

**ReservedCapacityOptions**

Defines EC2 Fleet preferences for utilizing reserved capacity when DefaultTargetCapacityType is set to `reserved-capacity`.

Supported only for fleets of type `instant`.

Type: ReservedCapacityOptionsRequest object

Required: No

**SpotOptions**

Describes the configuration of Spot Instances in an EC2 Fleet.

Type: SpotOptionsRequest object

Required: No

**TagSpecification.N**

The key-value pair for tagging the EC2 Fleet request on creation. For more information, see Tag your resources.

If the fleet type is `instant`, specify a resource type of `fleet` to tag the fleet or `instance` to tag the instances at launch.

If the fleet type is `maintain` or `request`, specify a resource type of `fleet` to tag the fleet. You cannot specify a resource type of `instance`. To tag instances at launch, specify the tags in a launch template.

Type: Array of TagSpecification objects

Required: No

**TargetCapacitySpecification**

The number of units to request.

Type: TargetCapacitySpecificationRequest object

Required: Yes

**TerminateInstancesWithExpiration**

Indicates whether running instances should be terminated when the EC2 Fleet expires.

Type: Boolean

Required: No

**Type**

The fleet type. The default value is `maintain`.

- `maintain` - The EC2 Fleet places an asynchronous request for your desired capacity, and continues to maintain your desired Spot capacity by replenishing interrupted Spot Instances.
- `request` - The EC2 Fleet places an asynchronous one-time request for your desired capacity, but does submit Spot requests in alternative capacity pools if Spot capacity is unavailable, and does not maintain Spot capacity if Spot Instances are interrupted.
- `instant` - The EC2 Fleet places a synchronous one-time request for your desired capacity, and returns errors for any instances that could not be launched.

For more information, see EC2 Fleet request types in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `request | maintain | instant`

Required: No

**ValidFrom**

The start date and time of the request, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). The default is to start fulfilling the request immediately.

Type: Timestamp

Required: No

**ValidUntil**

The end date and time of the request, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). At this point, no new EC2 Fleet requests are placed or able to fulfill the request. If no value is specified, the request remains until you cancel it.

Type: Timestamp

Required: No

## Response Elements

The following elements are returned by the service.

**errorSet**

Information about the instances that could not be launched by the fleet. Supported only for fleets of type `instant`.

Type: Array of CreateFleetError objects

**fleetId**

The ID of the EC2 Fleet.

Type: String

**fleetInstanceSet**

Information about the instances that were launched by the fleet. Supported only for fleets of type `instant`.

Type: Array of CreateFleetInstance objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateFlowLogs

Creates one or more flow logs to capture information about IP traffic for a specific network interface, subnet, or VPC.

Flow log data for a monitored network interface is recorded as flow log records, which are log events consisting of fields that describe the traffic flow. For more information, see Flow log records in the *Amazon VPC User Guide*.

When publishing to CloudWatch Logs, flow log records are published to a log group, and each network interface has a unique log stream in the log group. When publishing to Amazon S3, flow log records for all of the monitored network interfaces are published to a single log file object that is stored in the specified bucket.

For more information, see VPC Flow Logs in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: No

**DeliverCrossAccountRole**

The ARN of the IAM role that allows Amazon EC2 to publish flow logs across accounts.

Type: String

Required: No

**DeliverLogsPermissionArn**

The ARN of the IAM role that allows Amazon EC2 to publish flow logs to the log destination.

This parameter is required if the destination type is `cloud-watch-logs`, or if the destination type is `kinesis-data-firehose` and the delivery stream and the resources to monitor are in different accounts.

Type: String

Required: No

**DestinationOptions**

The destination options.

Type: DestinationOptionsRequest object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LogDestination**

The destination for the flow log data. The meaning of this parameter depends on the destination type.

- If the destination type is `cloud-watch-logs`, specify the ARN of a CloudWatch Logs log group. For example:

  arn:aws:logs:*region*:*account_id*:log-group:*my_group*

  Alternatively, use the `LogGroupName` parameter.
- If the destination type is `s3`, specify the ARN of an S3 bucket. For example:

  arn:aws:s3:::*my_bucket*/*my_subfolder*/

  The subfolder is optional. Note that you can't use `AWSLogs` as a subfolder name.
- If the destination type is `kinesis-data-firehose`, specify the ARN of a Kinesis Data Firehose delivery stream. For example:

arn:aws:firehose:*region*:*account_id*:deliverystream:*my_stream*

Type: String

Required: No

**LogDestinationType**

The type of destination for the flow log data.

Default: `cloud-watch-logs`

Type: String

Valid Values: `cloud-watch-logs | s3 | kinesis-data-firehose`

Required: No

**LogFormat**

The fields to include in the flow log record. List the fields in the order in which they should appear. If you omit this parameter, the flow log is created using the default format. If you specify this parameter, you must include at least one field. For more information about the available fields, see Flow log records in the *Amazon VPC User Guide* or Transit Gateway Flow Log records in the *AWS Transit Gateway Guide*.

Specify the fields using the `${field-id}` format, separated by spaces.

Type: String

Required: No

**LogGroupName**

The name of a new or existing CloudWatch Logs log group where Amazon EC2 publishes your flow logs.

This parameter is valid only if the destination type is `cloud-watch-logs`.

Type: String

Required: No

**MaxAggregationInterval**

The maximum interval of time during which a flow of packets is captured and aggregated into a flow log record. The possible values are 60 seconds (1 minute) or 600 seconds (10 minutes). This parameter must be 60 seconds for transit gateway resource types.

When a network interface is attached to a Nitro-based instance, the aggregation interval is always 60 seconds or less, regardless of the value that you specify.

Default: 600

Type: Integer

Required: No

**ResourceId.N**

The IDs of the resources to monitor. For example, if the resource type is VPC, specify the IDs of the VPCs.

Constraints: Maximum of 25 for transit gateway resource types. Maximum of 1000 for the other resource types.

Type: Array of strings

Required: Yes

**ResourceType**

The type of resource to monitor.

Type: String

Valid Values: `VPC | Subnet | NetworkInterface | TransitGateway | TransitGatewayAttachment | RegionalNatGateway`

Required: Yes

**TagFieldSpecification.N**

The tag configuration associated with the Flow Logs Amazon EC2 Tags feature fields in your custom log format.

Type: Array of TagFieldSpecificationRequest objects

Array Members: Minimum number of 1 item. Maximum number of 3 items.

Required: No

**TagSpecification.N**

The tags to apply to the flow logs.

Type: Array of TagSpecification objects

Required: No

**TrafficType**

The type of traffic to monitor (accepted traffic, rejected traffic, or all traffic). This parameter is not supported for transit gateway resource types. It is required for the other resource types.

Type: String

Valid Values: `ACCEPT | REJECT | ALL`

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

**flowLogIdSet**

The IDs of the flow logs.

Type: Array of strings

**requestId**

The ID of the request.

Type: String

**unsuccessful**

Information about the flow logs that could not be created successfully.

Type: Array of UnsuccessfulItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

(CloudWatch Logs) This example creates a flow log that captures all rejected traffic for network interface eni-aa22bb33 and publishes the data to an CloudWatch Logs log group named `my-flow-logs` in account `123456789101`, using the IAM role `publishFlowLogs`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateFlowLogs
&ResourceType=NetworkInterface
&TrafficType=REJECT
&ResourceId.1=eni-aa22bb33
&DeliverLogsPermissionArn=arn:aws:iam::123456789101:role/publishFlowLogs
&LogDestinationType=cloud-watch-logs
&LogDestination=arn:aws:logs:us-east-1:123456789101:log-group:my-flow-logs
&AUTHPARAMS
```

#### Sample Response

```
<CreateFlowLogsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>2d96dae3-504b-4fc4-bf50-266EXAMPLE</requestId>
    <unsuccessful/>
    <flowLogIdSet>
        <item>fl-1a2b3c4d</item>
    </flowLogIdSet>
</CreateFlowLogsResponse>
```

### Example 2

(Amazon S3) This example creates a flow log that captures all traffic for the specified network interface and publishes the data to an Amazon S3 bucket named amzn-s3-demo-bucket.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateFlowLogs
&ResourceType=NetworkInterface
&TrafficType=ALL
&ResourceId.1=eni-1235b8ca123456789
&LogDestinationType=s3
&LogDestination=arn:aws:s3:::amzn-s3-demo-bucket
&AUTHPARAMS
```

## Example 3

(Amazon S3) This example creates a flow log with a custom flow log format that captures the version, instance ID, network interface ID, type, packet source address, packet destination address, protocol, bytes, the start time, the end time, and the action of the traffic, in that order. The flow log is published to an Amazon S3 bucket named amzn-s3-demo-bucket.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateFlowLogs
&ResourceType=NetworkInterface
&TrafficType=ALL
&ResourceId.1=eni-1235b8ca123456789
&LogDestinationType=s3
&LogDestination=arn:aws:s3:::amzn-s3-demo-bucket
&LogFormat='${version} ${instance-id} ${interface-id} ${type} ${pkt-srcaddr} ${pkt-
dstaddr} ${protocol} ${bytes} ${start} ${end} ${action}'
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateFpgaImage

Creates an Amazon FPGA Image (AFI) from the specified design checkpoint (DCP).

The create operation is asynchronous. To verify that the AFI was successfully created and is ready for use, check the output logs.

An AFI contains the FPGA bitstream that is ready to download to an FPGA. You can securely deploy an AFI on multiple FPGA-accelerated instances. For more information, see the AWS FPGA Hardware Development Kit.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring Idempotency.

Type: String

Required: No

**Description**

A description for the AFI.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InputStorageLocation**

The location of the encrypted design checkpoint in Amazon S3. The input must be a tarball.

Type: StorageLocation object

Required: Yes

**LogsStorageLocation**

The location in Amazon S3 for the output logs.

Type: StorageLocation object

Required: No

**Name**

A name for the AFI.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the FPGA image during creation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**fpgaImageGlobalId**

The global FPGA image identifier (AGFI ID).

Type: String

**fpgaImageId**

The FPGA image identifier (AFI ID).

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates an AFI from the specified tarball in the specified bucket.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateFpgaImage
&Name=my-afi
&Description=test-afi
&InputStorageLocation.Bucket=my-fpga-bucket
&InputStorageLocation.Key=dcp/17_12_22-103226.Developer_CL.tar
&LogsStorageLocation.Bucket=my-fpga-bucket
&LogsStorageLocation.Key=logs
&AUTHPARAMS
```

#### Sample Response

```
<CreateFpgaImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d97baa5e-d3dd-4ead-9586-c68example</requestId>
    <fpgaImageId>afi-0d123e123bfc85abc</fpgaImageId>
    <fpgaImageGlobalId>agfi-123cb27b5e84a0abc</fpgaImageGlobalId>
</CreateFpgaImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateImage

Creates an Amazon EBS-backed AMI from an Amazon EBS-backed instance that is either running or stopped.

If you customized your instance with instance store volumes or Amazon EBS volumes in addition to the root device volume, the new AMI contains block device mapping information for those volumes. When you launch an instance from this new AMI, the instance automatically launches with those additional volumes.

The location of the source instance determines where you can create the snapshots of the AMI:

- If the source instance is in a Region, you must create the snapshots in the same Region as the instance.
- If the source instance is in a Local Zone, you can create the snapshots in the same Local Zone or in its parent Region.

For more information, see Create an Amazon EBS-backed AMI in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**BlockDeviceMapping.N**

The block device mappings.

When using the CreateImage action:

- You can't change the volume size using the VolumeSize parameter. If you want a different volume size, you must first change the volume size of the source instance.
- You can't modify the encryption status of existing volumes or snapshots. To create an AMI with volumes or snapshots that have a different encryption status (for example, where the source volume and snapshots are unencrypted, and you want to create an AMI with encrypted volumes or snapshots), copy the image instead.
- The only option that can be changed for existing mappings or snapshots is `DeleteOnTermination`.

Type: Array of BlockDeviceMapping objects

Required: No

**Description**

A description for the new image.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**Name**

A name for the new image.

Constraints: 3-128 alphanumeric characters, parentheses (()), square brackets ([]), spaces ( ), periods (.), slashes (/), dashes (-), single quotes ('), at-signs (@), or underscores(_)

Type: String

Required: Yes

**NoReboot**

Indicates whether or not the instance should be automatically rebooted before creating the image. Specify one of the following values:

- `true` - The instance is not rebooted before creating the image. This creates crash-consistent snapshots that include only the data that has been written to the volumes at the time the

snapshots are created. Buffered data and data in memory that has not yet been written to the volumes is not included in the snapshots.

- `false` - The instance is rebooted before creating the image. This ensures that all buffered data and data in memory is written to the volumes before the snapshots are created.

Default: `false`

Type: Boolean

Required: No

**SnapshotLocation**

> **Note**
>
> Only supported for instances in Local Zones. If the source instance is not in a Local Zone, omit this parameter.

The Amazon S3 location where the snapshots will be stored.

- To create local snapshots in the same Local Zone as the source instance, specify `local`.
- To create regional snapshots in the parent Region of the Local Zone, specify `regional` or omit this parameter.

Default: `regional`

Type: String

Valid Values: `regional | local`

Required: No

**TagSpecification.N**

The tags to apply to the AMI and snapshots on creation. You can tag the AMI, the snapshots, or both.

- To tag the AMI, the value for `ResourceType` must be `image`.
- To tag the snapshots that are created of the root volume and of other Amazon EBS volumes that are attached to the instance, the value for `ResourceType` must be `snapshot`. The same tag is applied to all of the snapshots that are created.

If you specify other values for `ResourceType`, the request fails.

To tag an AMI or snapshot after it has been created, see CreateTags.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**imageId**

The ID of the new AMI.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example request creates an AMI from the specified instance.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateImage
&Description=Standard+Web+Server+v1.0
&InstanceId=i-1234567890abcdef0
&Name=standard-web-server-v1.0
&AUTHPARAMS
```

### Sample Response

```
<CreateImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

## Example 2

This example request creates an AMI from the specified instance, and sets the NoReboot parameter to true (the instance is not rebooted before the image is created).

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateImage
&Description=Standard+Web+Server+v1.0
&InstanceId=i-1234567890abcdef0
&Name=standard-web-server-v1.0
&NoReboot=true
&AUTHPARAMS
```

### Sample Response

```
<CreateImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

## Example 3

This example request creates an AMI from the specified instance, and tags on creation the AMI and the snapshots that are created of the root volume and of other Amazon EBS volumes that are attached to the instance. In this example, the tag that is applied to the AMI and the snapshots is the same, with a key of `purpose` and a value of `test`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateImage
&InstanceId=i-1234567890abcdef0
&TagSpecification.1.ResourceType=image
```

```
&TagSpecification.1.Tag.1.Key=purpose
&TagSpecification.1.Tag.1.Value=test
&TagSpecification.2.ResourceType=snapshot
&TagSpecification.2.Tag.1.Key=purpose
&TagSpecification.2.Tag.1.Value=test
&AUTHPARAMS
```

### Sample Response

```
<CreateImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateImageUsageReport

Creates a report that shows how your image is used across other AWS accounts. The report provides visibility into which accounts are using the specified image, and how many resources (EC2 instances or launch templates) are referencing it.

For more information, see View your AMI usage in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AccountId.N**

The AWS account IDs to include in the report. To include all accounts, omit this parameter.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: No

**ClientToken**

A unique, case-sensitive identifier that you provide to ensure idempotency of the request.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the image to report on.

Type: String

Required: Yes

**ResourceType.N**

The resource types to include in the report.

Type: Array of ImageUsageResourceTypeRequest objects

Required: Yes

**TagSpecification.N**

The tags to apply to the report on creation. The `ResourceType` must be set to `image-usage-report`; any other value will cause the report creation to fail.

To tag a report after it has been created, see CreateTags.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**reportId**

The ID of the report.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateInstanceConnectEndpoint

Creates an EC2 Instance Connect Endpoint.

An EC2 Instance Connect Endpoint allows you to connect to an instance, without requiring the instance to have a public IPv4 or public IPv6 address. For more information, see Connect to your instances using EC2 Instance Connect Endpoint in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpAddressType**

The IP address type of the endpoint.

If no value is specified, the default value is determined by the IP address type of the subnet:

- `dualstack` - If the subnet has both IPv4 and IPv6 CIDRs
- `ipv4` - If the subnet has only IPv4 CIDRs
- `ipv6` - If the subnet has only IPv6 CIDRs

> **Note**
>
> `PreserveClientIp` is only supported on IPv4 EC2 Instance Connect Endpoints. To use `PreserveClientIp`, the value for `IpAddressType` must be `ipv4`.

Type: String

Valid Values: `ipv4 | dualstack | ipv6`

Required: No

**PreserveClientIp**

Indicates whether the client IP address is preserved as the source. The following are the possible values.

- `true` - Use the client IP address as the source.
- `false` - Use the network interface IP address as the source.

> **Note**
>
> `PreserveClientIp` is only supported on IPv4 EC2 Instance Connect Endpoints. To use `PreserveClientIp`, the value for `IpAddressType` must be `ipv4`.

Default: `false`

Type: Boolean

Required: No

**SecurityGroupId.N**

One or more security groups to associate with the endpoint. If you don't specify a security group, the default security group for your VPC will be associated with the endpoint.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 16 items.

Required: No

**SubnetId**

The ID of the subnet in which to create the EC2 Instance Connect Endpoint.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the EC2 Instance Connect Endpoint during creation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive idempotency token provided by the client in the the request.

Type: String

**instanceConnectEndpoint**

Information about the EC2 Instance Connect Endpoint.

Type: Ec2InstanceConnectEndpoint object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example: Create an EC2 Instance Connect Endpoint

This example creates an EC2 Instance Connect Endpoint in the specified subnet.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateInstanceConnectEndpoint
&SubnetId=subnet-0123456789example
&AUTHPARAMS
```

### Sample Response

```
<CreateInstanceConnectEndpointResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>a9effc88-e86c-4730-b1e8-30ba091babd1</requestId>
  <instanceConnectEndpoint>
    <createdAt>2023-06-06T20:01:31.000Z</createdAt>
    <instanceConnectEndpointArn>arn:aws:ec2:region:account-id:instance-connect-
endpoint/eice-0123456789example</instanceConnectEndpointArn>
    <instanceConnectEndpointId>eice-0123456789example</instanceConnectEndpointId>
    <networkInterfaceIdSet />
    <ownerId>account-id</ownerId>
    <preserveClientIp>false</preserveClientIp>
    <securityGroupIdSet>
      <item>sg-0123456789example</item>
    </securityGroupIdSet>
    <state>create-in-progress</state>
    <stateMessage />
    <subnetId>subnet-0123456789example</subnetId>
    <tagSet />
    <vpcId>vpc-0123456789example</vpcId>
  </instanceConnectEndpoint>
</CreateInstanceConnectEndpointResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateInstanceEventWindow

Creates an event window in which scheduled events for the associated Amazon EC2 instances can run.

You can define either a set of time ranges or a cron expression when creating the event window, but not both. All event window times are in UTC.

You can create up to 200 event windows per AWS Region.

When you create the event window, targets (instance IDs, Dedicated Host IDs, or tags) are not yet associated with it. To ensure that the event window can be used, you must associate one or more targets with it by using the AssociateInstanceEventWindow API.

**Important**

Event windows are applicable only for scheduled events that stop, reboot, or terminate instances.
Event windows are *not* applicable for:

- Expedited scheduled events and network maintenance events.
- Unscheduled maintenance such as AutoRecovery and unplanned reboots.

For more information, see Define event windows for scheduled events in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CronExpression**

The cron expression for the event window, for example, `* 0-4,20-23 * * 1,5`. If you specify a cron expression, you can't specify a time range.

Constraints:

- Only hour and day of the week values are supported.

- For day of the week values, you can specify either integers `0` through `6`, or alternative single values `SUN` through `SAT`.
- The minute, month, and year must be specified by `*`.
- The hour value must be one or a multiple range, for example, `0-4` or `0-4,20-23`.
- Each hour range must be >= 2 hours, for example, `0-2` or `20-23`.
- The event window must be >= 4 hours. The combined total time ranges in the event window must be >= 4 hours.

For more information about cron expressions, see cron on the *Wikipedia website*.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Name**

The name of the event window.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the event window.

Type: Array of TagSpecification objects

Required: No

**TimeRange.N**

The time range for the event window. If you specify a time range, you can't specify a cron expression.

Type: Array of InstanceEventWindowTimeRangeRequest objects

Required: No

## Response Elements

The following elements are returned by the service.

**instanceEventWindow**

Information about the event window.

Type: InstanceEventWindow object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# CreateInstanceExportTask

Exports a running or stopped instance to an Amazon S3 bucket.

For information about the prerequisites for your Amazon S3 bucket, supported operating systems, image formats, and known limitations for the types of instances you can export, see Exporting an instance as a VM Using VM Import/Export in the *VM Import/Export User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Description**

A description for the conversion task or the resource being exported. The maximum length is 255 characters.

Type: String

Required: No

**ExportToS3**

The format and location for an export instance task.

Type: ExportToS3TaskSpecification object

Required: Yes

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the export instance task during creation.

Type: Array of TagSpecification objects

Required: No

**TargetEnvironment**

The target virtualization environment.

Type: String

Valid Values: `citrix | vmware | microsoft`

Required: Yes

## Response Elements

The following elements are returned by the service.

**exportTask**

Information about the export instance task.

Type: ExportTask object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example request creates an Export VM task that makes a Windows instance available as an OVA.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateInstanceExportTask
&Description=Example%20for%20docs
&InstanceId=i-1234567890abcdef0
```

```
&TargetEnvironment=VMWare
&ExportToS3.DiskImageFormat=VMDK
&ExportToS3.ContainerFormat=OVA
&ExportToS3.S3bucket=amzn-s3-demo-for-exported-vm
&ExportToS3.S3prefix=my-exports/
&AUTHPARAMS
```

### Sample Response

```
<CreateInstanceExportTaskResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <exportTask>
   <exportTaskId>export-i-1234wxyz</exportTaskId>
   <description>Example for docs</description>
   <state>active</state>
   <statusMessage>Running</statusMessage>
    <instanceExport>
     <instanceId>i-1234567890abcdef0</instanceId>
     <targetEnvironment>VMWare</targetEnvironment>
    </instanceExport>
    <exportToS3>
     <diskImageFormat>VMDK</diskImageFormat>
     <containerFormat>OVA</containerFormat>
     <s3Bucket>amzn-s3-demo-for-exported-vm</s3Bucket>
     <s3Key>my-exports/ export-i-1234wxyz.ova</s3Key>
    </exportToS3>
  </exportTask>
</CreateInstanceExportTaskResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateInternetGateway

Creates an internet gateway for use with a VPC. After creating the internet gateway, you attach it to a VPC using AttachInternetGateway.

For more information, see Internet gateways in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to assign to the internet gateway.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**internetGateway**

Information about the internet gateway.

Type: InternetGateway object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates an internet gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateInternetGateway
&AUTHPARAMS
```

#### Sample Response

```
<CreateInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <internetGateway>
      <internetGatewayId>igw-eaad4883</internetGatewayId>
      <attachmentSet/>
      <tagSet/>
   </internetGateway>
</CreateInternetGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateInterruptibleCapacityReservationAllocation

Creates an interruptible Capacity Reservation by specifying the number of unused instances you want to allocate from your source reservation. This helps you make unused capacity available for other workloads within your account while maintaining control to reclaim it.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId**

The ID of the source Capacity Reservation from which to create the interruptible Capacity Reservation. Your Capacity Reservation must be in active state with no end date set and have available capacity for allocation.

Type: String

Required: Yes

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response.

Type: Boolean

Required: No

**InstanceCount**

The number of instances to allocate from your source reservation. You can only allocate available instances (also called unused capacity).

Type: Integer

Required: Yes

**TagSpecification.N**

The tags to apply to the interruptible Capacity Reservation during creation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**interruptionType**

The type of interruption applied to the interruptible reservation.

Type: String

Valid Values: adhoc

**requestId**

The ID of the request.

Type: String

**sourceCapacityReservationId**

The ID of the source Capacity Reservation from which the interruptible Capacity Reservation was created.

Type: String

**status**

The current status of the allocation request (creating, active, updating).

Type: String

Valid Values: `pending | active | updating | canceling | canceled | failed`

**targetInstanceCount**

The number of instances allocated to the interruptible reservation.

Type: Integer

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateIpam

Create an IPAM. Amazon VPC IP Address Manager (IPAM) is a VPC feature that you can use to automate your IP address management workflows including assigning, tracking, troubleshooting, and auditing IP addresses across AWS Regions and accounts throughout your AWS Organization.

For more information, see Create an IPAM in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the IPAM.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EnablePrivateGua**

Enable this option to use your own GUA ranges as private IPv6 addresses. This option is disabled by default.

Type: Boolean

Required: No

**MeteredAccount**

A metered account is an AWS account that is charged for active IP addresses managed in IPAM. For more information, see Enable cost distribution in the *Amazon VPC IPAM User Guide*.

Possible values:

- `ipam-owner` (default): The AWS account which owns the IPAM is charged for all active IP addresses managed in IPAM.
- `resource-owner`: The AWS account that owns the IP address is charged for the active IP address.

Type: String

Valid Values: `ipam-owner | resource-owner`

Required: No

**OperatingRegion.N**

The operating Regions for the IPAM. Operating Regions are AWS Regions where the IPAM is allowed to manage IP address CIDRs. IPAM only discovers and monitors resources in the AWS Regions you select as operating Regions.

For more information about operating Regions, see Create an IPAM in the *Amazon VPC IPAM User Guide*.

Type: Array of AddIpamOperatingRegion objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Required: No

**TagSpecification.N**

The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of TagSpecification objects

Required: No

**Tier**

IPAM is offered in a Free Tier and an Advanced Tier. For more information about the features available in each tier and the costs associated with the tiers, see Amazon VPC pricing > IPAM tab.

Type: String

Valid Values: `free | advanced`

Required: No

## Response Elements

The following elements are returned by the service.

**ipam**

Information about the IPAM created.

Type: Ipam object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateIpamExternalResourceVerificationToken

Create a verification token.

A verification token is an AWS-generated random value that you can use to prove ownership of an external resource. For example, you can use a verification token to validate that you control a public IP address range when you bring an IP address range to AWS (BYOIP).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamId**

The ID of the IPAM that will create the token.

Type: String

Required: Yes

**TagSpecification.N**

Token tags.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**ipamExternalResourceVerificationToken**

The verification token.

Type: IpamExternalResourceVerificationToken object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# CreateIpamPolicy

Creates an IPAM policy.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

For more information, see Define public IPv4 allocation strategy with IPAM policies in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive identifier to ensure the idempotency of the request.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamId**

The ID of the IPAM for which you're creating the policy.

Type: String

Required: Yes

**TagSpecification.N**

The tags to assign to the IPAM policy.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPolicy**

Information about the created IPAM policy.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

Type: IpamPolicy object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateIpamPool

Create an IP address pool for Amazon VPC IP Address Manager (IPAM). In IPAM, a pool is a collection of contiguous IP addresses CIDRs. Pools enable you to organize your IP addresses according to your routing and security needs. For example, if you have separate routing and security needs for development and production applications, you can create a pool for each.

For more information, see Create a top-level pool in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddressFamily**

The IP protocol assigned to this IPAM pool. You must choose either IPv4 or IPv6 protocol for a pool.

Type: String

Valid Values: `ipv4 | ipv6`

Required: Yes

**AllocationDefaultNetmaskLength**

The default netmask length for allocations added to this pool. If, for example, the CIDR assigned to this pool is 10.0.0.0/8 and you enter 16 here, new allocations will default to 10.0.0.0/16.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 128.

Required: No

**AllocationMaxNetmaskLength**

The maximum netmask length possible for CIDR allocations in this IPAM pool to be compliant. The maximum netmask length must be greater than the minimum netmask length. Possible netmask lengths for IPv4 addresses are 0 - 32. Possible netmask lengths for IPv6 addresses are 0 - 128.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 128.

Required: No

**AllocationMinNetmaskLength**

The minimum netmask length required for CIDR allocations in this IPAM pool to be compliant. The minimum netmask length must be less than the maximum netmask length. Possible netmask lengths for IPv4 addresses are 0 - 32. Possible netmask lengths for IPv6 addresses are 0 - 128.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 128.

Required: No

**AllocationResourceTag.N**

Tags that are required for resources that use CIDRs from this IPAM pool. Resources that do not have these tags will not be allowed to allocate space from the pool. If the resources have their tags changed after they have allocated space or if the allocation tagging requirements are changed on the pool, the resource may be marked as noncompliant.

Type: Array of RequestIpamResourceTag objects

Required: No

**AutoImport**

If selected, IPAM will continuously look for resources within the CIDR range of this pool and automatically import them as allocations into your IPAM. The CIDRs that will be allocated for these resources must not already be allocated to other resources in order for the import to succeed. IPAM will import a CIDR regardless of its compliance with the pool's allocation rules, so a resource might be imported and subsequently marked as noncompliant. If IPAM discovers multiple CIDRs that overlap, IPAM will import the largest CIDR only. If IPAM discovers multiple CIDRs with matching CIDRs, IPAM will randomly import one of them only.

A locale must be set on the pool for this feature to work.

Type: Boolean

Required: No

**AwsService**

Limits which service in AWS that the pool can be used in. "ec2", for example, allows users to use space for Elastic IP addresses and VPCs.

Type: String

Valid Values: `ec2 | global-services`

Required: No

**ClientToken**

A unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the IPAM pool.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamScopeId**

The ID of the scope in which you would like to create the IPAM pool.

Type: String

Required: Yes

**Locale**

The locale for the pool should be one of the following:

- An AWS Region where you want this IPAM pool to be available for allocations.
- The network border group for an AWS Local Zone where you want this IPAM pool to be available for allocations (supported Local Zones). This option is only available for IPAM IPv4 pools in the public scope.

Possible values: Any AWS Region or supported AWS Local Zone. Default is none and means any locale.

Type: String

Required: No

**PublicIpSource**

The IP address source for pools in the public scope. Only used for provisioning IP address CIDRs to pools in the public scope. Default is `byoip`. For more information, see Create IPv6 pools in the *Amazon VPC IPAM User Guide*. By default, you can add only one Amazon-provided IPv6 CIDR block to a top-level IPv6 pool if PublicIpSource is `amazon`. For information on increasing the default limit, see Quotas for your IPAM in the *Amazon VPC IPAM User Guide*.

Type: String

Valid Values: `amazon | byoip`

Required: No

**PubliclyAdvertisable**

Determines if the pool is publicly advertisable. The request can only contain `PubliclyAdvertisable` if `AddressFamily` is `ipv6` and `PublicIpSource` is `byoip`.

Type: Boolean

Required: No

**SourceIpamPoolId**

The ID of the source IPAM pool. Use this option to create a pool within an existing pool. Note that the CIDR you provision for the pool within the source pool must be available in the source pool's CIDR range.

Type: String

Required: No

**SourceResource**

The resource used to provision CIDRs to a resource planning pool.

Type: IpamPoolSourceResourceRequest object

Required: No

**TagSpecification.N**

The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPool**

Information about the IPAM pool created.

Type: IpamPool object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateIpamPrefixListResolver

Creates an IPAM prefix list resolver.

An IPAM prefix list resolver is a component that manages the synchronization between IPAM's CIDR selection rules and customer-managed prefix lists. It automates connectivity configurations by selecting CIDRs from IPAM's database based on your business logic and synchronizing them with prefix lists used in resources such as VPC route tables and security groups.

For more information about IPAM prefix list resolver, see Automate prefix list updates with IPAM in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddressFamily**

The address family for the IPAM prefix list resolver. Valid values are `ipv4` and `ipv6`. You must create separate resolvers for IPv4 and IPv6 CIDRs as they cannot be mixed in the same resolver.

Type: String

Valid Values: `ipv4 | ipv6`

Required: Yes

**ClientToken**

A unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the IPAM prefix list resolver to help you identify its purpose and configuration.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamId**

The ID of the IPAM that will serve as the source of the IP address database for CIDR selection. The IPAM must be in the Advanced tier to use this feature.

Type: String

Required: Yes

**Rule.N**

The CIDR selection rules for the resolver.

CIDR selection rules define the business logic for selecting CIDRs from IPAM. If a CIDR matches any of the rules, it will be included. If a rule has multiple conditions, the CIDR has to match every condition of that rule. You can create a prefix list resolver without any CIDR selection rules, but it will generate empty versions (containing no CIDRs) until you add rules.

Type: Array of IpamPrefixListResolverRuleRequest objects

Required: No

**TagSpecification.N**

The tags to apply to the IPAM prefix list resolver during creation. Tags help you organize and manage your AWS resources.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPrefixListResolver**

Information about the IPAM prefix list resolver that was created.

Type: IpamPrefixListResolver object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateIpamPrefixListResolverTarget

Creates an IPAM prefix list resolver target.

An IPAM prefix list resolver target is an association between a specific customer-managed prefix list and an IPAM prefix list resolver. The target enables the resolver to synchronize CIDRs selected by its rules into the specified prefix list, which can then be referenced in AWS resources.

For more information about IPAM prefix list resolver, see Automate prefix list updates with IPAM in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DesiredVersion**

The specific version of the prefix list to target. If not specified, the resolver will target the latest version.

Type: Long

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPrefixListResolverId**

The ID of the IPAM prefix list resolver that will manage the synchronization of CIDRs to the target prefix list.

Type: String

Required: Yes

**PrefixListId**

The ID of the managed prefix list that will be synchronized with CIDRs selected by the IPAM prefix list resolver. This prefix list becomes an IPAM managed prefix list.

An IPAM-managed prefix list is a customer-managed prefix list that has been associated with an IPAM prefix list resolver target. When a prefix list becomes IPAM managed, its CIDRs are automatically synchronized based on the IPAM prefix list resolver's CIDR selection rules, and direct CIDR modifications are restricted.

Type: String

Required: Yes

**PrefixListRegion**

The AWS Region where the prefix list is located. This is required when referencing a prefix list in a different Region.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the IPAM prefix list resolver target during creation. Tags help you organize and manage your AWS resources.

Type: Array of TagSpecification objects

Required: No

**TrackLatestVersion**

Indicates whether the resolver target should automatically track the latest version of the prefix list. When enabled, the target will always synchronize with the most current version of the prefix list.

Choose this for automatic updates when you want your prefix lists to stay current with infrastructure changes without manual intervention.

Type: Boolean

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamPrefixListResolverTarget**

Information about the IPAM prefix list resolver target that was created.

Type: IpamPrefixListResolverTarget object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateIpamResourceDiscovery

Creates an IPAM resource discovery. A resource discovery is an IPAM component that enables IPAM to manage and monitor resources that belong to the owning account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A client token for the IPAM resource discovery.

Type: String

Required: No

**Description**

A description for the IPAM resource discovery.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**OperatingRegion.N**

Operating Regions for the IPAM resource discovery. Operating Regions are AWS Regions where the IPAM is allowed to manage IP address CIDRs. IPAM only discovers and monitors resources in the AWS Regions you select as operating Regions.

Type: Array of AddIpamOperatingRegion objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Required: No

**TagSpecification.N**

Tag specifications for the IPAM resource discovery.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**ipamResourceDiscovery**

An IPAM resource discovery.

Type: IpamResourceDiscovery object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateIpamScope

Create an IPAM scope. In IPAM, a scope is the highest-level container within IPAM. An IPAM contains two default scopes. Each scope represents the IP space for a single network. The private scope is intended for all private IP address space. The public scope is intended for all public IP address space. Scopes enable you to reuse IP addresses across multiple unconnected networks without causing IP address overlap or conflict.

For more information, see Add a scope in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the scope you're creating.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ExternalAuthorityConfiguration**

The configuration that links an Amazon VPC IPAM scope to an external authority system. It specifies the type of external system and the external resource identifier that identifies your account or instance in that system.

In IPAM, an external authority is a third-party IP address management system that provides CIDR blocks when you provision address space for top-level IPAM pools. This allows you to use your existing IP management system to control which address ranges are allocated to AWS while using Amazon VPC IPAM to manage subnets within those ranges.

Type: ExternalAuthorityConfiguration object

Required: No

**IpamId**

The ID of the IPAM for which you're creating this scope.

Type: String

Required: Yes

**TagSpecification.N**

The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**ipamScope**

Information about the created scope.

Type: IpamScope object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateKeyPair

Creates an ED25519 or 2048-bit RSA key pair with the specified name and in the specified format. Amazon EC2 stores the public key and displays the private key for you to save to a file. The private key is returned as an unencrypted PEM encoded PKCS#1 private key or an unencrypted PPK formatted private key for use with PuTTY. If a key with the specified name already exists, Amazon EC2 returns an error.

The key pair returned to you is available only in the AWS Region in which you create it. If you prefer, you can create your own key pair using a third-party tool and upload it to any Region using ImportKeyPair.

You can have up to 5,000 key pairs per AWS Region.

For more information, see Amazon EC2 key pairs in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**KeyFormat**

The format of the key pair.

Default: `pem`

Type: String

Valid Values: `pem` | `ppk`

Required: No

**KeyName**

A unique name for the key pair.

Constraints: Up to 255 ASCII characters

Type: String

Required: Yes

**KeyType**

The type of key pair. Note that ED25519 keys are not supported for Windows instances.

Default: `rsa`

Type: String

Valid Values: `rsa | ed25519`

Required: No

**TagSpecification.N**

The tags to apply to the new key pair.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**keyFingerprint**

- For RSA key pairs, the key fingerprint is the SHA-1 digest of the DER encoded private key.
- For ED25519 key pairs, the key fingerprint is the base64-encoded SHA-256 digest, which is the default for OpenSSH, starting with OpenSSH 6.8.

Type: String

**keyMaterial**

An unencrypted PEM encoded RSA or ED25519 private key.

Type: String

**keyName**

The name of the key pair.

Type: String

**keyPairId**

The ID of the key pair.

Type: String

**requestId**

The ID of the request.

Type: String

**tagSet**

Any tags applied to the key pair.

Type: Array of Tag objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example request creates a key pair named `my-key-pair`, and applies a tag with a key of `purpose` and a value of `production`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateKeyPair
&KeyName=my-key-pair
&TagSpecification.1.ResourceType=key-pair
&TagSpecification.1.Tag.1.Key=purpose
```

```
&TagSpecification.1.Tag.1.Value=production
&AUTHPARAMS
```

### Sample Response

```
<CreateKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>1b5b5bcf-3670-4c16-83d7-c2c9example</requestId>
  <keyName>my-key-pair</keyName>
  <keyPairId>key-abcd12345eEXAMPLE</keyPairId>
  <keyFingerprint>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</
keyFingerprint>
  <keyMaterial>---- BEGIN RSA PRIVATE KEY ----
MIICiTCCAfICCQD6m7oRw0uXOjANBgkqhkiG9w0BAQUFADCBiDELMAkGA1UEBhMC
VVMxCzAJBgNVBAgTAldBMRAwDgYDVQQHEwdTZWF0dGxlMQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBAsTC0lBTSBDb25zb2xlMRIwEAYDVQQDEwlUZXN0Q2lsYWMxHzAd
BgkqhkiG9w0BCQEWEG5vb25lQGFtYXpvbi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI0MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAgTAldBMRAwDgYD
VQQHEwdTZWF0dGxlMQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBAsTC0lBTSBDb25z
b2xlMRIwEAYDVQQDEwlUZXN0Q2lsYWMxHzAdBgkqhkiG9w0BCQEWEG5vb25lQGFt
YXpvbi5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLYgVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzZswY6786m86gpE
Ibb3OhjZnzcvQAaRHhdlQWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntneD9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJIlJ00zbhNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvjx79LjSTb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
-----END RSA PRIVATE KEY-----</keyMaterial>
  <tagSet>
    <item>
      <key>purpose</key>
      <value>production</value>
    </item>
  </tagSet>
</CreateKeyPairResponse>
```

## Saving the file

Create a file named `my-key-pair.pem` and paste the entire key from the response into this file. Keep this file in a safe place; it is required to decrypt login information when you connect to an instance that you launched using this key pair. If you're using an SSH client on a Linux computer to connect to your instance, use the following command to set the permissions of your private key file so that only you can read it.

### Sample Request

```
chmod 400 my-key-pair.pem
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateLaunchTemplate

Creates a launch template.

A launch template contains the parameters to launch an instance. When you launch an instance using RunInstances, you can specify a launch template instead of providing the launch parameters in the request. For more information, see Store instance launch parameters in Amazon EC2 launch templates in the *Amazon EC2 User Guide*.

To clone an existing launch template as the basis for a new launch template, use the Amazon EC2 console. The API, SDKs, and CLI do not support cloning a template. For more information, see Create a launch template from an existing launch template in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. If a client token isn't specified, a randomly generated token is used in the request to ensure idempotency.

For more information, see Ensuring idempotency.

Constraint: Maximum 128 ASCII characters.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LaunchTemplateData**

The information for the launch template.

Type: RequestLaunchTemplateData object

Required: Yes

**LaunchTemplateName**

A name for the launch template.

Type: String

Required: Yes

**Operator**

Reserved for internal use.

Type: OperatorRequest object

Required: No

**TagSpecification.N**

The tags to apply to the launch template on creation. To tag the launch template, the resource type must be `launch-template`.

To specify the tags for the resources that are created when an instance is launched, you must use the `TagSpecifications` parameter in the launch template data structure.

Type: Array of TagSpecification objects

Required: No

**VersionDescription**

A description for the first version of the launch template.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 255.

Required: No

## Response Elements

The following elements are returned by the service.

**launchTemplate**

Information about the launch template.

Type: LaunchTemplate object

**requestId**

The ID of the request.

Type: String

**warning**

If the launch template contains parameters or parameter combinations that are not valid, an error code and an error message are returned for each issue that's found.

Type: ValidationWarning object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

The following example creates a launch template that specifies AMI `ami-1a2b3c4d` and an instance type of `t2.micro`.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateLaunchTemplate
&LaunchTemplateName=MyLaunchTemplate
&VersionDescription=FirstVersion
&LaunchTemplateData.ImageId=ami-1a2b3c4d
&LaunchTemplateData.InstanceType=t2.micro
&AUTHPARAMS
```

### Sample Response

```
<CreateLaunchTemplateResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>39f602bc-7580-4239-a6d8-af56example</requestId>
    <launchTemplate>
        <createTime>2017-10-31T11:38:52.000Z</createTime>
        <createdBy>arn:aws:iam::123456789012:root</createdBy>
        <defaultVersionNumber>1</defaultVersionNumber>
        <latestVersionNumber>1</latestVersionNumber>
        <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
        <launchTemplateName>MyLaunchTemplate</launchTemplateName>
    </launchTemplate>
</CreateLaunchTemplateResponse>
```

## Example 2

The following example creates a launch template that specifies the subnet in which to launch the instance (`subnet-7b16de0c`), assigns a public IP address and an IPv6 address to the instance, and creates a tag for the instance (`Name=webserver`).

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateLaunchTemplate
&LaunchTemplateName=TemplateForWebServer
&VersionDescription=WebVersion1
&LaunchTemplateData.ImageId=ami-8c1be5f6
&LaunchTemplateData.InstanceType=t2.micro
&LaunchTemplateData.NetworkInterface.1.AssociatePublicIpAddress=true
&LaunchTemplateData.NetworkInterface.1.DeviceIndex=0
&LaunchTemplateData.NetworkInterface.1.SubnetId=subnet-7b16de0c
&LaunchTemplateData.NetworkInterface.1.Ipv6AddressCount=1
&LaunchTemplateData.TagSpecification.1.ResourceType=instance
&LaunchTemplateData.TagSpecification.1.Tag.1.Key=Name
&LaunchTemplateData.TagSpecification.1.Tag.1.Value=webserver
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateLaunchTemplateVersion

Creates a new version of a launch template. You must specify an existing launch template, either by name or ID. You can determine whether the new version inherits parameters from a source version, and add or overwrite parameters as needed.

Launch template versions are numbered in the order in which they are created. You can't specify, change, or replace the numbering of launch template versions.

Launch templates are immutable; after you create a launch template, you can't modify it. Instead, you can create a new version of the launch template that includes the changes that you require.

For more information, see Modify a launch template (manage launch template versions) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. If a client token isn't specified, a randomly generated token is used in the request to ensure idempotency.

For more information, see Ensuring idempotency.

Constraint: Maximum 128 ASCII characters.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LaunchTemplateData**

The information for the launch template.

Type: RequestLaunchTemplateData object

Required: Yes

**LaunchTemplateId**

The ID of the launch template.

You must specify either the launch template ID or the launch template name, but not both.

Type: String

Required: No

**LaunchTemplateName**

The name of the launch template.

You must specify either the launch template ID or the launch template name, but not both.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: `[a-zA-Z0-9\(\)\.\-/_]+`

Required: No

**ResolveAlias**

If `true`, and if a Systems Manager parameter is specified for `ImageId`, the AMI ID is displayed in the response for `imageID`. For more information, see Use a Systems Manager parameter instead of an AMI ID in the *Amazon EC2 User Guide*.

Default: `false`

Type: Boolean

Required: No

**SourceVersion**

The version of the launch template on which to base the new version. Snapshots applied to the block device mapping are ignored when creating a new version unless they are explicitly included.

If you specify this parameter, the new version inherits the launch parameters from the source version. If you specify additional launch parameters for the new version, they overwrite any corresponding launch parameters inherited from the source version.

If you omit this parameter, the new version contains only the launch parameters that you specify for the new version.

Type: String

Required: No

**VersionDescription**

A description for the version of the launch template.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 255.

Required: No

## Response Elements

The following elements are returned by the service.

**launchTemplateVersion**

Information about the launch template version.

Type: LaunchTemplateVersion object

**requestId**

The ID of the request.

Type: String

**warning**

If the new version of the launch template contains parameters or parameter combinations that are not valid, an error code and an error message are returned for each issue that's found.

Type: ValidationWarning object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

The following example creates a new launch template version for launch template `MyLaunchTemplate` and uses version 2 of the launch template as the base for the new version. The new launch template uses `ami-aabbccdd`. All other launch template data is inherited from the source version.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateLaunchTemplate
&SourceVersion=2
&LaunchTemplateName=MyLaunchTemplate
&VersionDescription=VersionWithNewAMI
&LaunchTemplateData.ImageId=ami-aabbccdd
&AUTHPARAMS
```

#### Sample Response

```
<CreateLaunchTemplateVersionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>6657423a-2616-461a-9ce5-3c65example</requestId>
    <launchTemplateVersion>
        <createTime>2017-10-31T11:56:00.000Z</createTime>
        <createdBy>arn:aws:iam::123456789012:root</createdBy>
        <defaultVersion>false</defaultVersion>
        <launchTemplateData>
            <imageId>ami-aabbccdd</imageId>
            <instanceType>t2.micro</instanceType>
        </launchTemplateData>
```

```
        <launchTemplateId>lt-0a20c965061f6454a</launchTemplateId>
        <launchTemplateName>MyLaunchTemplate</launchTemplateName>
        <versionDescription>VersionWithNewAMI</versionDescription>
        <versionNumber>4</versionNumber>
    </launchTemplateVersion>
</CreateLaunchTemplateVersionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateLocalGatewayRoute

Creates a static route for the specified local gateway route table. You must specify one of the following targets:

- `LocalGatewayVirtualInterfaceGroupId`
- `NetworkInterfaceId`

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DestinationCidrBlock**

The CIDR range used for destination matches. Routing decisions are based on the most specific match.

Type: String

Required: No

**DestinationPrefixListId**

The ID of the prefix list. Use a prefix list in place of `DestinationCidrBlock`. You cannot use `DestinationPrefixListId` and `DestinationCidrBlock` in the same request.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: Yes

**LocalGatewayVirtualInterfaceGroupId**

The ID of the virtual interface group.

Type: String

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**route**

Information about the route.

Type: LocalGatewayRoute object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateLocalGatewayRouteTable

Creates a local gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayId**

The ID of the local gateway.

Type: String

Required: Yes

**Mode**

The mode of the local gateway route table.

Type: String

Valid Values: `direct-vpc-routing | coip`

Required: No

**TagSpecification.N**

The tags assigned to the local gateway route table.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**localGatewayRouteTable**

Information about the local gateway route table.

Type: LocalGatewayRouteTable object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateLocalGatewayRouteTableVirtualInterfaceGroupAssociation

Creates a local gateway route table virtual interface group association.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: Yes

**LocalGatewayVirtualInterfaceGroupId**

The ID of the local gateway route table virtual interface group association.

Type: String

Required: Yes

**TagSpecification.N**

The tags assigned to the local gateway route table virtual interface group association.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**localGatewayRouteTableVirtualInterfaceGroupAssociation**

Information about the local gateway route table virtual interface group association.

Type: LocalGatewayRouteTableVirtualInterfaceGroupAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateLocalGatewayRouteTableVpcAssociation

Associates the specified VPC with the specified local gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: Yes

**TagSpecification.N**

The tags to assign to the local gateway route table VPC association.

Type: Array of TagSpecification objects

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**localGatewayRouteTableVpcAssociation**

Information about the association.

Type: LocalGatewayRouteTableVpcAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateLocalGatewayVirtualInterface

Create a virtual interface for a local gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalAddress**

The IP address assigned to the local gateway virtual interface on the Outpost side. Only IPv4 is supported.

Type: String

Required: Yes

**LocalGatewayVirtualInterfaceGroupId**

The ID of the local gateway virtual interface group.

Type: String

Required: Yes

**OutpostLagId**

References the Link Aggregation Group (LAG) that connects the Outpost to on-premises network devices.

Type: String

Required: Yes

**PeerAddress**

The peer IP address for the local gateway virtual interface. Only IPv4 is supported.

Type: String

Required: Yes

**PeerBgpAsn**

The Autonomous System Number (ASN) of the Border Gateway Protocol (BGP) peer.

Type: Integer

Required: No

**PeerBgpAsnExtended**

The extended 32-bit ASN of the BGP peer for use with larger ASN values.

Type: Long

Required: No

**TagSpecification.N**

The tags to apply to a resource when the local gateway virtual interface is being created.

Type: Array of TagSpecification objects

Required: No

**Vlan**

The virtual local area network (VLAN) used for the local gateway virtual interface.

Type: Integer

Required: Yes

## Response Elements

The following elements are returned by the service.

**localGatewayVirtualInterface**

Information about the local gateway virtual interface.

Type: LocalGatewayVirtualInterface object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateLocalGatewayVirtualInterfaceGroup

Create a local gateway virtual interface group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalBgpAsn**

The Autonomous System Number(ASN) for the local Border Gateway Protocol (BGP).

Type: Integer

Required: No

**LocalBgpAsnExtended**

The extended 32-bit ASN for the local BGP configuration.

Type: Long

Required: No

**LocalGatewayId**

The ID of the local gateway.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the local gateway virtual interface group when the resource is being created.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**localGatewayVirtualInterfaceGroup**

Information about the created local gateway virtual interface group.

Type: LocalGatewayVirtualInterfaceGroup object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateMacSystemIntegrityProtectionModificationTask

Creates a System Integrity Protection (SIP) modification task to configure the SIP settings for an x86 Mac instance or Apple silicon Mac instance. For more information, see Configure SIP for Amazon EC2 instances in the *Amazon EC2 User Guide*.

When you configure the SIP settings for your instance, you can either enable or disable all SIP settings, or you can specify a custom SIP configuration that selectively enables or disables specific SIP settings.

> **Note**
>
> If you implement a custom configuration, connect to the instance and verify the settings to ensure that your requirements are properly implemented and functioning as intended. SIP configurations might change with macOS updates. We recommend that you review custom SIP settings after any macOS version upgrade to ensure continued compatibility and proper functionality of your security configurations.

To enable or disable all SIP settings, use the **MacSystemIntegrityProtectionStatus** parameter only. For example, to enable all SIP settings, specify the following:

- `MacSystemIntegrityProtectionStatus=enabled`

To specify a custom configuration that selectively enables or disables specific SIP settings, use the **MacSystemIntegrityProtectionStatus** parameter to enable or disable all SIP settings, and then use the **MacSystemIntegrityProtectionConfiguration** parameter to specify exceptions. In this case, the exceptions you specify for **MacSystemIntegrityProtectionConfiguration** override the value you specify for **MacSystemIntegrityProtectionStatus**. For example, to enable all SIP settings, except `NvramProtections`, specify the following:

- `MacSystemIntegrityProtectionStatus=enabled`
- `MacSystemIntegrityProtectionConfigurationRequest "NvramProtections=disabled"`

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the Amazon EC2 Mac instance.

Type: String

Required: Yes

**MacCredentials**

**[Apple silicon Mac instances only]** Specifies the following credentials:

- **Internal disk administrative user**
  - **Username** - Only the default administrative user (`aws-managed-user`) is supported and it is used by default. You can't specify a different administrative user.
  - **Password** - If you did not change the default password for `aws-managed-user`, specify the default password, which is *blank*. Otherwise, specify your password.
- **Amazon EBS root volume administrative user**
  - **Username** - If you did not change the default administrative user, specify `ec2-user`. Otherwise, specify the username for your administrative user.

- **Password** - Specify the password for the administrative user.

The credentials must be specified in the following JSON format:

```
{ "internalDiskPassword":"internal-disk-admin_password",
"rootVolumeUsername":"root-volume-admin_username",
"rootVolumepassword":"root-volume-admin_password" }
```

Type: String

Required: No

**MacSystemIntegrityProtectionConfiguration**

Specifies the overrides to selectively enable or disable individual SIP settings. The individual settings you specify here override the overall SIP status you specify for **MacSystemIntegrityProtectionStatus**.

Type: MacSystemIntegrityProtectionConfigurationRequest object

Required: No

**MacSystemIntegrityProtectionStatus**

Specifies the overall SIP status for the instance. To enable all SIP settings, specify `enabled`. To disable all SIP settings, specify `disabled`.

Type: String

Valid Values: `enabled | disabled`

Required: Yes

**TagSpecification.N**

Specifies tags to apply to the SIP modification task.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**macModificationTask**

Information about the SIP modification task.

Type: MacModificationTask object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateManagedPrefixList

Creates a managed prefix list. You can specify entries for the prefix list. Each entry consists of a CIDR block and an optional description.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddressFamily**

The IP address type.

Valid Values: `IPv4` | `IPv6`

Type: String

Required: Yes

**ClientToken**

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Constraints: Up to 255 UTF-8 characters in length.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Entry.N**

One or more entries for the prefix list.

Type: Array of AddPrefixListEntry objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

Required: No

**MaxEntries**

The maximum number of entries for the prefix list.

Type: Integer

Required: Yes

**PrefixListName**

A name for the prefix list.

Constraints: Up to 255 characters in length. The name cannot start with `com.amazonaws`.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the prefix list during creation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**prefixList**

Information about the prefix list.

Type: ManagedPrefixList object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a managed prefix list with a maximum of 10 entries, and adds 2 entries. The prefix list support IPv4 CIDR blocks.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateManagedPrefixList
&PrefixListName=tgw-attachments
&Entry.1.Cidr=10.0.0.0/16
&Entry.1.Description=vpc-a
&Entry.2.Cidr=10.2.0.0/16
&Entry.2.Description=vpc-b
&MaxEntries=10
&AddressFamily=IPv4
&AUTHPARAMS
```

#### Sample Response

```
<CreateManagedPrefixListResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>2989de6e-5305-49c7-809a-example</requestId>
    <prefixList>
            <addressFamily>IPv4</addressFamily>
            <maxEntries>10</maxEntries>
            <ownerId>123456789012</ownerId>
            <prefixListArn>arn:aws:ec2:us-east-1:123456789012:prefix-list/
pl-0123123123123abcd</prefixListArn>
            <prefixListId>pl-0123123123123abcd</prefixListId>
            <prefixListName>tgw-attachments</prefixListName>
            <state>create-in-progress</state>
            <tagSet/>
            <version>1</version>
    </prefixList>
```

```
</CreateManagedPrefixListResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateNatGateway

Creates a NAT gateway in the specified subnet. This action creates a network interface in the specified subnet with a private IP address from the IP address range of the subnet. You can create either a public NAT gateway or a private NAT gateway.

With a public NAT gateway, internet-bound traffic from a private subnet can be routed to the NAT gateway, so that instances in a private subnet can connect to the internet.

With a private NAT gateway, private communication is routed across VPCs and on-premises networks through a transit gateway or virtual private gateway. Common use cases include running large workloads behind a small pool of allowlisted IPv4 addresses, preserving private IPv4 addresses, and communicating between overlapping networks.

For more information, see NAT gateways in the *Amazon VPC User Guide*.

**Important**

When you create a public NAT gateway and assign it an EIP or secondary EIPs, the network border group of the EIPs must match the network border group of the Availability Zone (AZ) that the public NAT gateway is in. If it's not the same, the NAT gateway will fail to launch. You can see the network border group for the subnet's AZ by viewing the details of the subnet. Similarly, you can view the network border group of an EIP by viewing the details of the EIP address. For more information about network border groups and EIPs, see Allocate an Elastic IP address in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationId**

[Public NAT gateways only] The allocation ID of an Elastic IP address to associate with the NAT gateway. You cannot specify an Elastic IP address with a private NAT gateway. If the Elastic IP address is associated with another resource, you must first disassociate it.

Type: String

Required: No

**AvailabilityMode**

Specifies whether to create a zonal (single-AZ) or regional (multi-AZ) NAT gateway. Defaults to `zonal`.

A zonal NAT gateway is a NAT Gateway that provides redundancy and scalability within a single availability zone. A regional NAT gateway is a single NAT Gateway that works across multiple availability zones (AZs) in your VPC, providing redundancy, scalability and availability across all the AZs in a Region.

For more information, see Regional NAT gateways for automatic multi-AZ expansion in the *Amazon VPC User Guide*.

Type: String

Valid Values: `zonal | regional`

Required: No

**AvailabilityZoneAddress.N**

For regional NAT gateways only: Specifies which Availability Zones you want the NAT gateway to support and the Elastic IP addresses (EIPs) to use in each AZ. The regional NAT gateway uses these EIPs to handle outbound NAT traffic from their respective AZs. If not specified, the NAT gateway will automatically expand to new AZs and associate EIPs upon detection of an elastic network interface. If you specify this parameter, auto-expansion is disabled and you must manually manage AZ coverage.

A regional NAT gateway is a single NAT Gateway that works across multiple availability zones (AZs) in your VPC, providing redundancy, scalability and availability across all the AZs in a Region.

For more information, see Regional NAT gateways for automatic multi-AZ expansion in the *Amazon VPC User Guide*.

Type: Array of AvailabilityZoneAddress objects

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Constraint: Maximum 64 ASCII characters.

Type: String

Required: No

**ConnectivityType**

Indicates whether the NAT gateway supports public or private connectivity. The default is public connectivity.

Type: String

Valid Values: `private | public`

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PrivateIpAddress**

The private IPv4 address to assign to the NAT gateway. If you don't provide an address, a private IPv4 address will be automatically assigned.

Type: String

Required: No

**SecondaryAllocationId.N**

Secondary EIP allocation IDs. For more information, see Create a NAT gateway in the *Amazon VPC User Guide*.

Type: Array of strings

Required: No

**SecondaryPrivateIpAddress.N**

Secondary private IPv4 addresses. For more information about secondary addresses, see Create a NAT gateway in the *Amazon VPC User Guide*.

Type: Array of strings

Required: No

**SecondaryPrivateIpAddressCount**

[Private NAT gateway only] The number of secondary private IPv4 addresses you want to assign to the NAT gateway. For more information about secondary addresses, see Create a NAT gateway in the *Amazon VPC User Guide*.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 31.

Required: No

**SubnetId**

The ID of the subnet in which to create the NAT gateway.

Type: String

Required: No

**TagSpecification.N**

The tags to assign to the NAT gateway.

Type: Array of TagSpecification objects

Required: No

**VpcId**

The ID of the VPC where you want to create a regional NAT gateway.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier to ensure the idempotency of the request. Only returned if a client token was provided in the request.

Type: String

**natGateway**

Information about the NAT gateway.

Type: NatGateway object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates a public NAT gateway in the specified subnet and associates the Elastic IP address with the specified allocation ID to the NAT gateway.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateNatGateway
&SubnetId=subnet-1234567890abcdef0
&AllocationId=eipalloc-0abcdef1234567890
```

```
&AUTHPARAMS
```

### Sample Response

```
<CreateNatGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>1b74dc5c-bcda-403f-867d-example</requestId>
    <natGateway>
        <subnetId>subnet-1234567890abcdef0</subnetId>
        <natGatewayAddressSet>
            <item>
                <allocationId>eipalloc-0abcdef1234567890</allocationId>
                <networkInterfaceId>eni-0123abc456def7890</networkInterfaceId>
                <privateIp>10.0.0.191</privateIp>
                <publicIp>203.0.113.5</publicIp>
            </item>
        </natGatewayAddressSet>
        <createTime>2019-11-25T14:00:55.416Z</createTime>
        <vpcId>vpc-0598c7d356eba48d7</vpcId>
        <natGatewayId>nat-04e77a5e9c34432f9</natGatewayId>
        <connectivityType>public</connectivityType>
        <state>pending</state>
    </natGateway>
</CreateNatGatewayResponse>
```

## Example 2

This example creates a private NAT gateway in the specified subnet.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNatGateway
&SubnetId=subnet-1234567890abcdef0
&ConnectivityType=private
&AUTHPARAMS
```

### Sample Response

```
<CreateNatGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>1b74dc5c-bcda-403f-867d-example</requestId>
    <natGateway>
        <subnetId>subnet-1234567890abcdef0</subnetId>
        <natGatewayAddressSet>
```

```
            <item>
                <networkInterfaceId>eni-1a2b3c4d5e6f78901</networkInterfaceId>
                <privateIp>10.0.1.26</privateIp>
            </item>
        </natGatewayAddressSet>
        <createTime>2021-06-05T14:00:55.416Z</createTime>
        <vpcId>vpc-0598c7d356eba48d7</vpcId>
        <natGatewayId>nat-04e77a5e9c34432f9</natGatewayId>
        <connectivityType>private</connectivityType>
        <state>pending</state>
    </natGateway>
</CreateNatGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateNetworkAcl

Creates a network ACL in a VPC. Network ACLs provide an optional layer of security (in addition to security groups) for the instances in your VPC.

For more information, see Network ACLs in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to assign to the network ACL.

Type: Array of TagSpecification objects

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier to ensure the idempotency of the request. Only returned if a client token was provided in the request.

Type: String

**networkAcl**

Information about the network ACL.

Type: NetworkAcl object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a network ACL in the specified IPv6-enabled VPC. The response includes default IPv4 and IPv6 entries for egress and ingress traffic, each with a high rule number. These are the last entries we process to decide whether traffic is allowed in or out of an associated subnet. If the traffic doesn't match any rules with a lower rule number, then these default entries ultimately deny the traffic.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkAcl
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

## Sample Response

```
<CreateNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <networkAcl>
      <networkAclId>acl-5fb85d36</networkAclId>
      <vpcId>vpc-11ad4878</vpcId>
      <default>false</default>
      <entrySet>
         <item>
            <ruleNumber>32767</ruleNumber>
            <protocol>all</protocol>
            <ruleAction>deny</ruleAction>
            <egress>true</egress>
            <cidrBlock>0.0.0.0/0</cidrBlock>
         </item>
         <item>
            <ruleNumber>32767</ruleNumber>
            <protocol>all</protocol>
            <ruleAction>deny</ruleAction>
            <egress>false</egress>
            <cidrBlock>0.0.0.0/0</cidrBlock>
         </item>
        <item>
           <ruleNumber>32768</ruleNumber>
           <protocol>all</protocol>
           <ruleAction>deny</ruleAction>
           <egress>true</egress>
           <ipv6CidrBlock>::/0</ipv6CidrBlock>
        </item>
        <item>
           <ruleNumber>32768</ruleNumber>
           <protocol>all</protocol>
           <ruleAction>deny</ruleAction>
           <egress>false</egress>
           <ipv6CidrBlock>::/0</ipv6CidrBlock>
        </item>
```

```
      </entrySet>
      <associationSet/>
      <tagSet/>
   </networkAcl>
</CreateNetworkAclResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateNetworkAclEntry

Creates an entry (a rule) in a network ACL with the specified rule number. Each network ACL has a set of numbered ingress rules and a separate set of numbered egress rules. When determining whether a packet should be allowed in or out of a subnet associated with the ACL, we process the entries in the ACL according to the rule numbers, in ascending order. Each network ACL has a set of ingress rules and a separate set of egress rules.

We recommend that you leave room between the rule numbers (for example, 100, 110, 120, ...), and not number them one right after the other (for example, 101, 102, 103, ...). This makes it easier to add a rule between existing ones without having to renumber the rules.

After you add an entry, you can't modify it; you must either replace it, or create an entry and delete the old one.

For more information about network ACLs, see Network ACLs in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CidrBlock**

The IPv4 network range to allow or deny, in CIDR notation (for example `172.16.0.0/24`). We modify the specified CIDR block to its canonical form; for example, if you specify `100.68.0.18/18`, we modify it to `100.68.0.0/18`.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Egress**

Indicates whether this is an egress rule (rule is applied to traffic leaving the subnet).

Type: Boolean

Required: Yes

**Icmp**

ICMP protocol: The ICMP or ICMPv6 type and code. Required if specifying protocol 1 (ICMP) or protocol 58 (ICMPv6) with an IPv6 CIDR block.

Type: IcmpTypeCode object

Required: No

**Ipv6CidrBlock**

The IPv6 network range to allow or deny, in CIDR notation (for example `2001:db8:1234:1a00::/64`).

Type: String

Required: No

**NetworkAclId**

The ID of the network ACL.

Type: String

Required: Yes

**PortRange**

TCP or UDP protocols: The range of ports the rule applies to. Required if specifying protocol 6 (TCP) or 17 (UDP).

Type: PortRange object

Required: No

**Protocol**

The protocol number. A value of "-1" means all protocols. If you specify "-1" or a protocol number other than "6" (TCP), "17" (UDP), or "1" (ICMP), traffic on all ports is allowed, regardless

of any ports or ICMP types or codes that you specify. If you specify protocol "58" (ICMPv6) and specify an IPv4 CIDR block, traffic for all ICMP types and codes allowed, regardless of any that you specify. If you specify protocol "58" (ICMPv6) and specify an IPv6 CIDR block, you must specify an ICMP type and code.

Type: String

Required: Yes

**RuleAction**

Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: `allow | deny`

Required: Yes

**RuleNumber**

The rule number for the entry (for example, 100). ACL entries are processed in ascending order by rule number.

Constraints: Positive integer from 1 to 32766. The range 32767 to 65535 is reserved for internal use.

Type: Integer

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates an entry with rule number 110 in the specified network ACL. The rule allows ingress traffic from any IPv4 address (`0.0.0.0/0`) on UDP port 53.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=110
&Protocol="17"
&RuleAction=allow
&Egress=false
&CidrBlock=0.0.0.0/0
&PortRange.From=53
&PortRange.To=53
&AUTHPARAMS
```

#### Sample Response

```
<CreateNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</CreateNetworkAclEntryResponse>
```

### Example 2

This example creates an entry with rule number 120 in the specified network ACL. The rule allows ingress traffic from any IPv6 address (`::/0`) on TCP port 80.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkAclEntry
```

```
&NetworkAclId=acl-2cb85d45
&RuleNumber=120
&Protocol="6"
&RuleAction=allow
&Egress=false
&Ipv6CidrBlock=::/0
&PortRange.From=80
&PortRange.To=80
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateNetworkInsightsAccessScope

Creates a Network Access Scope.

AWS Network Access Analyzer enables cloud networking and cloud operations teams to verify that their networks on AWS conform to their network security and governance objectives. For more information, see the AWS Network Access Analyzer Guide.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ExcludePath.N**

The paths to exclude.

Type: Array of AccessScopePathRequest objects

Required: No

**MatchPath.N**

The paths to match.

Type: Array of AccessScopePathRequest objects

Required: No

**TagSpecification.N**

The tags to apply.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**networkInsightsAccessScope**

The Network Access Scope.

Type: NetworkInsightsAccessScope object

**networkInsightsAccessScopeContent**

The Network Access Scope content.

Type: NetworkInsightsAccessScopeContent object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateNetworkInsightsPath

Creates a path to analyze for reachability.

Reachability Analyzer enables you to analyze and debug network reachability between two resources in your virtual private cloud (VPC). For more information, see the Reachability Analyzer Guide.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: Yes

**Destination**

The ID or ARN of the destination. If the resource is in another account, you must specify an ARN.

Type: String

Required: No

**DestinationIp**

The IP address of the destination.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**DestinationPort**

The destination port.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 65535.

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FilterAtDestination**

Scopes the analysis to network paths that match specific filters at the destination. If you specify this parameter, you can't specify the parameter for the destination IP address.

Type: PathRequestFilter object

Required: No

**FilterAtSource**

Scopes the analysis to network paths that match specific filters at the source. If you specify this parameter, you can't specify the parameters for the source IP address or the destination port.

Type: PathRequestFilter object

Required: No

**Protocol**

The protocol.

Type: String

Valid Values: `tcp | udp`

Required: Yes

**Source**

The ID or ARN of the source. If the resource is in another account, you must specify an ARN.

Type: String

Required: Yes

**SourceIp**

The IP address of the source.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**TagSpecification.N**

The tags to add to the path.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**networkInsightsPath**

Information about the path.

Type: NetworkInsightsPath object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateNetworkInterface

Creates a network interface in the specified subnet.

The number of IP addresses you can assign to a network interface varies by instance type.

For more information about network interfaces, see Elastic network interfaces in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**ConnectionTrackingSpecification**

A connection tracking specification for the network interface.

Type: ConnectionTrackingSpecificationRequest object

Required: No

**Description**

A description for the network interface.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EnablePrimaryIpv6**

If you're creating a network interface in a dual-stack or IPv6-only subnet, you have the option to assign a primary IPv6 IP address. A primary IPv6 address is an IPv6 GUA address associated with an ENI that you have enabled to use a primary IPv6 address. Use this option if the instance that this ENI will be attached to relies on its IPv6 address not changing. AWS will automatically assign an IPv6 address associated with the ENI attached to your instance to be the primary IPv6 address. Once you enable an IPv6 GUA address to be a primary IPv6, you cannot disable it. When you enable an IPv6 GUA address to be a primary IPv6, the first IPv6 GUA will be made the primary IPv6 address until the instance is terminated or the network interface is detached. If you have multiple IPv6 addresses associated with an ENI attached to your instance and you enable a primary IPv6 address, the first IPv6 GUA address associated with the ENI becomes the primary IPv6 address.

Type: Boolean

Required: No

**InterfaceType**

The type of network interface. The default is `interface`.

If you specify `efa-only`, do not assign any IP addresses to the network interface. EFA-only network interfaces do not support IP addresses.

Type: String

Valid Values: `interface | efa | efa-only | trunk`

Required: No

**Ipv4Prefix.N**

The IPv4 prefixes assigned to the network interface.

You can't specify IPv4 prefixes if you've specified one of the following: a count of IPv4 prefixes, specific private IPv4 addresses, or a count of private IPv4 addresses.

Type: Array of Ipv4PrefixSpecificationRequest objects

Required: No

**Ipv4PrefixCount**

The number of IPv4 prefixes that AWS automatically assigns to the network interface.

You can't specify a count of IPv4 prefixes if you've specified one of the following: specific IPv4 prefixes, specific private IPv4 addresses, or a count of private IPv4 addresses.

Type: Integer

Required: No

**Ipv6AddressCount**

The number of IPv6 addresses to assign to a network interface. Amazon EC2 automatically selects the IPv6 addresses from the subnet range.

You can't specify a count of IPv6 addresses using this parameter if you've specified one of the following: specific IPv6 addresses, specific IPv6 prefixes, or a count of IPv6 prefixes.

If your subnet has the `AssignIpv6AddressOnCreation` attribute set, you can override that setting by specifying 0 as the IPv6 address count.

Type: Integer

Required: No

**Ipv6Addresses.N**

The IPv6 addresses from the IPv6 CIDR block range of your subnet.

You can't specify IPv6 addresses using this parameter if you've specified one of the following: a count of IPv6 addresses, specific IPv6 prefixes, or a count of IPv6 prefixes.

Type: Array of InstanceIpv6Address objects

Required: No

**Ipv6Prefix.N**

The IPv6 prefixes assigned to the network interface.

You can't specify IPv6 prefixes if you've specified one of the following: a count of IPv6 prefixes, specific IPv6 addresses, or a count of IPv6 addresses.

Type: Array of Ipv6PrefixSpecificationRequest objects

Required: No

**Ipv6PrefixCount**

The number of IPv6 prefixes that AWS automatically assigns to the network interface.

You can't specify a count of IPv6 prefixes if you've specified one of the following: specific IPv6 prefixes, specific IPv6 addresses, or a count of IPv6 addresses.

Type: Integer

Required: No

**Operator**

Reserved for internal use.

Type: OperatorRequest object

Required: No

**PrivateIpAddress**

The primary private IPv4 address of the network interface. If you don't specify an IPv4 address, Amazon EC2 selects one for you from the subnet's IPv4 CIDR range. If you specify an IP address, you cannot indicate any IP addresses specified in `privateIpAddresses` as primary (only one IP address can be designated as primary).

Type: String

Required: No

**PrivateIpAddresses.N**

The private IPv4 addresses.

You can't specify private IPv4 addresses if you've specified one of the following: a count of private IPv4 addresses, specific IPv4 prefixes, or a count of IPv4 prefixes.

Type: Array of PrivateIpAddressSpecification objects

Required: No

**SecondaryPrivateIpAddressCount**

The number of secondary private IPv4 addresses to assign to a network interface. When you specify a number of secondary IPv4 addresses, Amazon EC2 selects these IP addresses within the subnet's IPv4 CIDR range. You can't specify this option and specify more than one private IP address using `privateIpAddresses`.

You can't specify a count of private IPv4 addresses if you've specified one of the following: specific private IPv4 addresses, specific IPv4 prefixes, or a count of IPv4 prefixes.

Type: Integer

Required: No

**SecurityGroupId.N**

The IDs of the security groups.

Type: Array of strings

Required: No

**SubnetId**

The ID of the subnet to associate with the network interface.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the new network interface.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**networkInterface**

Information about the network interface.

Type: NetworkInterface object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates a network interface in the specified subnet with a primary IPv4 address that is automatically selected by Amazon EC2.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

#### Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
 <requestId>8dbe591e-5a22-48cb-b948-example</requestId>
    <networkInterface>
        <networkInterfaceId>eni-cfca76a6</networkInterfaceId>
        <subnetId>subnet-b2a249da</subnetId>
        <vpcId>vpc-c31dafaa</vpcId>
        <availabilityZone>ap-southeast-1b</availabilityZone>
        <description/>
        <ownerId>251839141158</ownerId>
        <requesterManaged>false</requesterManaged>
        <status>available</status>
        <macAddress>02:74:b0:72:79:61</macAddress>
        <privateIpAddress>10.0.2.157</privateIpAddress>
        <privateDnsName>ip-10-0-2-157.ap-southeast-1.compute.internal</privateDnsName>
        <sourceDestCheck>true</sourceDestCheck>
        <groupSet>
            <item>
```

```
                <groupId>sg-1a2b3c4d</groupId>
                <groupName>default</groupName>
            </item>
        </groupSet>
        <tagSet/>
        <privateIpAddressesSet>
            <item>
                <privateIpAddress>10.0.2.157</privateIpAddress>
                <privateDnsName>ip-10-0-2-157.ap-southeast-1.compute.internal</
privateDnsName>
                <primary>true</primary>
            </item>
        </privateIpAddressesSet>
        <ipv6AddressesSet/>
    </networkInterface>
</CreateNetworkInterfaceResponse>
```

## Example 2

This example creates a network interface in the specified subnet with a primary IPv4 address of `10.0.2.140` and four secondary private IPv4 addresses that are automatically selected by Amazon EC2.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.140
&SecondaryPrivateIpAddressCount=4
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

### Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
 <requestId>bd78c839-0895-4fac-a17f-example</requestId>
    <networkInterface>
        <networkInterfaceId>eni-1bcb7772</networkInterfaceId>
        <subnetId>subnet-a61dafcf</subnetId>
        <vpcId>vpc-c31dafaa</vpcId>
        <availabilityZone>ap-southeast-1b</availabilityZone>
        <description/>
```

```
        <ownerId>251839141158</ownerId>
        <requesterManaged>false</requesterManaged>
        <status>pending</status>
        <macAddress>02:74:b0:70:7f:1a</macAddress>
        <privateIpAddress>10.0.2.140</privateIpAddress>
        <sourceDestCheck>true</sourceDestCheck>
        <groupSet>
            <item>
                <groupId>sg-1a2b3c4d</groupId>
                <groupName>default</groupName>
            </item>
        </groupSet>
        <tagSet/>
        <privateIpAddressesSet>
            <item>
                <privateIpAddress>10.0.2.140</privateIpAddress>
                <primary>true</primary>
            </item>
            <item>
                <privateIpAddress>10.0.2.172</privateIpAddress>
                <primary>false</primary>
            </item>
            <item>
                <privateIpAddress>10.0.2.169</privateIpAddress>
                <primary>false</primary>
            </item>
            <item>
                <privateIpAddress>10.0.2.170</privateIpAddress>
                <primary>false</primary>
            </item>
            <item>
                <privateIpAddress>10.0.2.171</privateIpAddress>
                <primary>false</primary>
            </item>
        </privateIpAddressesSet>
        <ipv6AddressesSet/>
    </networkInterface>
</CreateNetworkInterfaceResponse>
```

## Example 3

This example creates a network interface with a primary private IPv4 address of 10.0.2.130 and two secondary IPv4 addresses of 10.0.2.132 and 10.0.2.133.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.130
&PrivateIpAddresses.2.Primary=false
&PrivateIpAddresses.2.PrivateIpAddress=10.0.2.132
&PrivateIpAddresses.3.Primary=false
&PrivateIpAddresses.3.PrivateIpAddress=10.0.2.133
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

## Example 4

This example creates a network interface with a primary private IPv4 address of 10.0.2.130 and two IPv6 addresses that are selected by Amazon EC2.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.130
&Ipv6AddressCount=2
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

### Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>a9565f4c-f928-4113-859b-example</requestId>
    <networkInterface>
        <networkInterfaceId>eni-41c47828</networkInterfaceId>
        <subnetId>subnet-a61dafcf</subnetId>
        <vpcId>vpc-c31dafaa</vpcId>
        <availabilityZone>ap-southeast-1b</availabilityZone>
        <description/>
        <ownerId>251839141158</ownerId>
        <requesterManaged>false</requesterManaged>
        <status>pending</status>
        <macAddress>02:74:b0:78:bf:ab</macAddress>
        <privateIpAddress>10.0.2.130</privateIpAddress>
        <sourceDestCheck>true</sourceDestCheck>
```

```
        <groupSet>
            <item>
                <groupId>sg-188d9f74</groupId>
                <groupName>default</groupName>
            </item>
        </groupSet>
        <tagSet/>
        <privateIpAddressesSet>
            <item>
                <privateIpAddress>10.0.2.130</privateIpAddress>
                <primary>true</primary>
            </item>
        </privateIpAddressesSet>
        <ipv6AddressesSet>
         <item>
           <ipv6Address>2001:db8:1234:1a00::123</ipv6Address>
         </item>
         <item>
           <ipv6Address>2001:db8:1234:1a00::456</ipv6Address>
         </item>
       </ipv6AddressesSet>
    </networkInterface>
</CreateNetworkInterfaceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateNetworkInterfacePermission

Grants an AWS-authorized account permission to attach the specified network interface to an instance in their account.

You can grant permission to a single AWS account only, and only one account at a time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AwsAccountId**

The AWS account ID.

Type: String

Required: No

**AwsService**

The AWS service. Currently not supported.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

**Permission**

The type of permission to grant.

Type: String

Valid Values: `INSTANCE-ATTACH | EIP-ASSOCIATE`

Required: Yes

## Response Elements

The following elements are returned by the service.

**interfacePermission**

Information about the permission for the network interface.

Type: NetworkInterfacePermission object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example grants permission to account `123456789012` to attach network interface `eni-1a2b3c4d` to an instance.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterfacePermission
```

```
&NetworkInterfaceId=eni-1a2b3c4d
&AwsAccountId=123456789012
&Permission=INSTANCE-ATTACH
&AUTHPARAMS
```

### Sample Response

```
<CreateNetworkInterfacePermissionResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>e9633d41-093e-4944-981b-ca7example</requestId>
    <interfacePermission>
        <awsAccountId>123456789012</awsAccountId>
        <networkInterfaceId>eni-1a2b3c4d</networkInterfaceId>
        <networkInterfacePermissionId>eni-perm-06fd19020ede149ea</
networkInterfacePermissionId>
        <permission>INSTANCE-ATTACH</permission>
        <permissionState>
            <state>GRANTED</state>
        </permissionState>
    </interfacePermission>
</CreateNetworkInterfacePermissionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreatePlacementGroup

Creates a placement group in which to launch instances. The strategy of the placement group determines how the instances are organized within the group.

A `cluster` placement group is a logical grouping of instances within a single Availability Zone that benefit from low network latency, high network throughput. A `spread` placement group places instances on distinct hardware. A `partition` placement group places groups of instances in different partitions, where instances in one partition do not share the same hardware with instances in another partition.

For more information, see Placement groups in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupName**

A name for the placement group. Must be unique within the scope of your account for the Region.

Constraints: Up to 255 ASCII characters

Type: String

Required: No

**LinkedGroupId**

Reserved for future use.

Type: String

Required: No

**Operator**

Reserved for internal use.

Type: OperatorRequest object

Required: No

**PartitionCount**

The number of partitions. Valid only when **Strategy** is set to `partition`.

Type: Integer

Required: No

**SpreadLevel**

Determines how placement groups spread instances.

- Host – You can use `host` only with Outpost placement groups.
- Rack – No usage restrictions.

Type: String

Valid Values: `host | rack`

Required: No

**Strategy**

The placement strategy.

Type: String

Valid Values: `cluster | spread | partition`

Required: No

**TagSpecification.N**

The tags to apply to the new placement group.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**placementGroup**

Information about the placement group.

Type: PlacementGroup object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a cluster placement group named `XYZ-cluster`, and applies a tag with a key of `purpose` and a value of `production`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreatePlacementGroup
&GroupName=XYZ-cluster
&Strategy=cluster
&TagSpecification.1.ResourceType=placement-group
&TagSpecification.1.Tag.1.Key=purpose
&TagSpecification.1.Tag.1.Value=production
&AUTHPARAMS
```

### Sample Response

```
<CreatePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>1bbcaf48-7155-4154-a7ac-c6031EXAMPLE</requestId>
    <return>true</return>
    <placementGroup>
        <groupName>XYZ-cluster</groupName>
        <groupId>pg-0bea00ad0bexample</groupId>
        <strategy>cluster</strategy>
        <state>available</state>
        <tagSet>
            <item>
                <key>purpose</key>
                <value>production</value>
            </item>
        </tagSet>
    </placementGroup>
</CreatePlacementGroupResponse>
```

## Example

This example creates a partition placement group named `HDFS-Group-A` with five partitions.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreatePlacementGroup
&GroupName=HDFS-Group-A
&Strategy=partition
&PartitionCount=5
&AUTHPARAMS
```

### Sample Response

```
<CreatePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>1bbcaf48-7155-4154-a7ac-c6031EXAMPLE</requestId>
    <return>true</return>
    <placementGroup>
        <groupName>HDFS-Group-A</groupName>
        <groupId>pg-0fc13f6eb3example</groupId>
        <strategy>partition</strategy>
        <state>available</state>
        <partitionCount>5</partitionCount>
```

```
    </placementGroup>
</CreatePlacementGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreatePublicIpv4Pool

Creates a public IPv4 address pool. A public IPv4 pool is an EC2 IP address pool required for the public IPv4 CIDRs that you own and bring to AWS to manage with IPAM. IPv6 addresses you bring to AWS, however, use IPAM pools only. To monitor the status of pool creation, use DescribePublicIpv4Pools.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkBorderGroup**

The Availability Zone (AZ) or Local Zone (LZ) network border group that the resource that the IP address is assigned to is in. Defaults to an AZ network border group. For more information on available Local Zones, see Local Zone availability in the *Amazon EC2 User Guide*.

Type: String

Required: No

**TagSpecification.N**

The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**poolId**

The ID of the public IPv4 pool.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateReplaceRootVolumeTask

Replaces the EBS-backed root volume for a `running` instance with a new volume that is restored to the original root volume's launch state, that is restored to a specific snapshot taken from the original root volume, or that is restored from an AMI that has the same key characteristics as that of the instance.

For more information, see Replace a root volume in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. If you do not specify a client token, a randomly generated token is used for the request to ensure idempotency. For more information, see Ensuring idempotency.

Type: String

Required: No

**DeleteReplacedRootVolume**

Indicates whether to automatically delete the original root volume after the root volume replacement task completes. To delete the original root volume, specify `true`. If you choose to keep the original root volume after the replacement task completes, you must manually delete it when you no longer need it.

Type: Boolean

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI to use to restore the root volume. The specified AMI must have the same product code, billing information, architecture type, and virtualization type as that of the instance.

If you want to restore the replacement volume from a specific snapshot, or if you want to restore it to its launch state, omit this parameter.

Type: String

Required: No

**InstanceId**

The ID of the instance for which to replace the root volume.

Type: String

Required: Yes

**SnapshotId**

The ID of the snapshot from which to restore the replacement root volume. The specified snapshot must be a snapshot that you previously created from the original root volume.

If you want to restore the replacement root volume to the initial launch state, or if you want to restore the replacement root volume from an AMI, omit this parameter.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the root volume replacement task.

Type: Array of TagSpecification objects

Required: No

**VolumeInitializationRate**

Specifies the Amazon EBS Provisioned Rate for Volume Initialization (volume initialization rate), in MiB/s, at which to download the snapshot blocks from Amazon S3 to the replacement

root volume. This is also known as *volume initialization*. Specifying a volume initialization rate ensures that the volume is initialized at a predictable and consistent rate after creation.

Omit this parameter if:

- You want to create the volume using fast snapshot restore. You must specify a snapshot that is enabled for fast snapshot restore. In this case, the volume is fully initialized at creation.

  > **Note**
  >
  > If you specify a snapshot that is enabled for fast snapshot restore and a volume initialization rate, the volume will be initialized at the specified rate instead of fast snapshot restore.

- You want to create a volume that is initialized at the default rate.

For more information, see Initialize Amazon EBS volumes in the *Amazon EC2 User Guide*.

Valid range: 100 - 300 MiB/s

Type: Long

Required: No

## Response Elements

The following elements are returned by the service.

**replaceRootVolumeTask**

Information about the root volume replacement task.

Type: ReplaceRootVolumeTask object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateReservedInstancesListing

Creates a listing for Amazon EC2 Standard Reserved Instances to be sold in the Reserved Instance Marketplace. You can submit one Standard Reserved Instance listing at a time. To get a list of your Standard Reserved Instances, you can use the DescribeReservedInstances operation.

> **Note**
>
> Only Standard Reserved Instances can be sold in the Reserved Instance Marketplace. Convertible Reserved Instances cannot be sold.

The Reserved Instance Marketplace matches sellers who want to resell Standard Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

To sell your Standard Reserved Instances, you must first register as a seller in the Reserved Instance Marketplace. After completing the registration process, you can create a Reserved Instance Marketplace listing of some or all of your Standard Reserved Instances, and specify the upfront price to receive for them. Your Standard Reserved Instance listings then become available for purchase. To view the details of your Standard Reserved Instance listing, you can use the DescribeReservedInstancesListings operation.

For more information, see Sell in the Reserved Instance Marketplace in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier you provide to ensure idempotency of your listings. This helps avoid duplicate listings. For more information, see Ensuring Idempotency.

Type: String

Required: Yes

**InstanceCount**

The number of instances that are a part of a Reserved Instance account to be listed in the Reserved Instance Marketplace. This number should be less than or equal to the instance count associated with the Reserved Instance ID specified in this call.

Type: Integer

Required: Yes

**PriceSchedules.N**

A list specifying the price of the Standard Reserved Instance for each month remaining in the Reserved Instance term.

Type: Array of PriceScheduleSpecification objects

Required: Yes

**ReservedInstancesId**

The ID of the active Standard Reserved Instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**reservedInstancesListingsSet**

Information about the Standard Reserved Instance listing.

Type: Array of ReservedInstancesListing objects

# Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example creates a Reserved Instance Marketplace listing from the specified Standard Reserved Instance, which has 11 months remaining in its term. In this example, we set the upfront price at $2.50, and the price drops over the course of the 11-month term if the instance is still not sold.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateReservedInstancesListing
&ClientToken=myIdempToken1
&InstanceCount=1
&PriceSchedules.1.Price=2.5
&PriceSchedules.1.Term=11
&PriceSchedules.2.Price=2.0
&PriceSchedules.2.Term=8
&PriceSchedules.3.Price=1.5
&PriceSchedules.3.Term=5
&PriceSchedules.4.Price=0.7
&PriceSchedules.4.Term=3
&PriceSchedules.5.Price=0.1
&PriceSchedules.5.Term=1
&ReservedInstancesId=e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE
&AUTHPARAMS
```

### Sample Response

```
<CreateReservedInstancesListingResponse>
    <requestId>a42481af-335a-4e9e-b291-bd18dexample</requestId>
    <reservedInstancesListingsSet>
        <item>
            <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-9e57dEXAMPLE</
reservedInstancesListingId>
            <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</
reservedInstancesId>
            <createDate>2012-07-17T17:11:09.449Z</createDate>
            <updateDate>2012-07-17T17:11:09.468Z</updateDate>
            <status>active</status>
```

```
            <statusMessage>ACTIVE</statusMessage>
            <instanceCounts>
                <item>
                    <state>Available</state>
                    <instanceCount>1</instanceCount>
                </item>
                <item>
                    <state>Sold</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Cancelled</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Pending</state>
                    <instanceCount>0</instanceCount>
                </item>
            </instanceCounts>
            <priceSchedules>
                <item>
                    <term>11</term>
                    <price>2.5</price>
                    <currencyCode>USD</currencyCode>
                    <active>true</active>
                </item>
                <item>
                    <term>10</term>
                    <price>2.5</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>9</term>
                    <price>2.5</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>8</term>
                    <price>2.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
```

```
                <item>
                    <term>7</term>
                    <price>2.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>6</term>
                    <price>2.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>5</term>
                    <price>1.5</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>4</term>
                    <price>1.5</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>3</term>
                    <price>0.7</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>2</term>
                    <price>0.7</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>1</term>
                    <price>0.1</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
            </priceSchedules>
            <tagSet/>
```

```
            <clientToken>myIdempToken1</clientToken>
        </item>
    </reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateRestoreImageTask

Starts a task that restores an AMI from an Amazon S3 object that was previously created by using CreateStoreImageTask.

To use this API, you must have the required permissions. For more information, see Permissions for storing and restoring AMIs using S3 in the *Amazon EC2 User Guide*.

For more information, see Store and restore an AMI using S3 in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Bucket**

The name of the Amazon S3 bucket that contains the stored AMI object.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Name**

The name for the restored AMI. The name must be unique for AMIs in the Region for this account. If you do not provide a name, the new AMI gets the same name as the original AMI.

Type: String

Required: No

**ObjectKey**

The name of the stored AMI object in the bucket.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the AMI and snapshots on restoration. You can tag the AMI, the snapshots, or both.

- To tag the AMI, the value for `ResourceType` must be `image`.
- To tag the snapshots, the value for `ResourceType` must be `snapshot`. The same tag is applied to all of the snapshots that are created.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**imageId**

The AMI ID.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateRoute

Creates a route in a route table within a VPC.

You must specify either a destination CIDR block or a prefix list ID. You must also specify exactly one of the resources from the parameter list.

When determining how to route traffic, we use the route with the most specific match. For example, traffic is destined for the IPv4 address `192.0.2.3`, and the route table includes the following two IPv4 routes:

- `192.0.2.0/24` (goes to some target A)
- `192.0.2.0/28` (goes to some target B)

Both routes apply to the traffic destined for `192.0.2.3`. However, the second route in the list covers a smaller number of IP addresses and is therefore more specific, so we use that route to determine where to target the traffic.

For more information about route tables, see Route tables in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CarrierGatewayId**

The ID of the carrier gateway.

You can only use this option when the VPC contains a subnet which is associated with a Wavelength Zone.

Type: String

Required: No

**CoreNetworkArn**

The Amazon Resource Name (ARN) of the core network.

Type: String

Required: No

**DestinationCidrBlock**

The IPv4 CIDR address block used for the destination match. Routing decisions are based on the most specific match. We modify the specified CIDR block to its canonical form; for example, if you specify `100.68.0.18/18`, we modify it to `100.68.0.0/18`.

Type: String

Required: No

**DestinationIpv6CidrBlock**

The IPv6 CIDR block used for the destination match. Routing decisions are based on the most specific match.

Type: String

Required: No

**DestinationPrefixListId**

The ID of a prefix list used for the destination match.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EgressOnlyInternetGatewayId**

[IPv6 traffic only] The ID of an egress-only internet gateway.

Type: String

Required: No

**GatewayId**

The ID of an internet gateway or virtual private gateway attached to your VPC.

Type: String

Required: No

**InstanceId**

The ID of a NAT instance in your VPC. The operation fails if you specify an instance ID unless exactly one network interface is attached.

Type: String

Required: No

**LocalGatewayId**

The ID of the local gateway.

Type: String

Required: No

**NatGatewayId**

[IPv4 traffic only] The ID of a NAT gateway.

Type: String

Required: No

**NetworkInterfaceId**

The ID of a network interface.

Type: String

Required: No

**OdbNetworkArn**

The Amazon Resource Name (ARN) of the ODB network.

Type: String

Required: No

**RouteTableId**

The ID of the route table for the route.

Type: String

Required: Yes

**TransitGatewayId**

The ID of a transit gateway.

Type: String

Required: No

**VpcEndpointId**

The ID of a VPC endpoint. Supported for Gateway Load Balancer endpoints only.

Type: String

Required: No

**VpcPeeringConnectionId**

The ID of a VPC peering connection.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates a route in the route table with the ID `rtb-1122334455667788a`. The route matches all IPv4 traffic (`0.0.0.0/0`) and routes it to the internet gateway with the ID `igw-eaad4883`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-1122334455667788a
&DestinationCidrBlock=0.0.0.0/0
&GatewayId=igw-eaad4883
&AUTHPARAMS
```

### Example 2

This example creates a route in the route table with the ID `rtb-1122334455667788a`. The route sends all IPv4 traffic (`0.0.0.0/0`) to the NAT instance with the ID `i-1234567890abcdef0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-1122334455667788a
&DestinationCidrBlock=0.0.0.0/0
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS
```

### Example 3

This example creates a route in route table `rtb-1122334455667788a`. The route matches traffic for the IPv4 CIDR block `10.0.0.0/16` and routes it to VPC peering connection, `pcx-111aaa22`.

This route enables IPv4 traffic to be directed to the other peered VPC in the VPC peering connection.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-1122334455667788a&DestinationCidrBlock=10.0.0.0/16
&vpcPeeringConnectionId=pcx-111aaa22
&AUTHPARAMS
```

## Example 4

This example creates a route in route table `rtb-1122334455667788a`. The route sends all IPv6 traffic `::/0` to an egress-only internet gateway.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-1122334455667788a
&DestinationIpv6CidrBlock=::/0
&EgressOnlyInternetGatewayId=eigw-1234567890abc1234
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# CreateRouteServer

Creates a new route server to manage dynamic routing in a VPC.

Amazon VPC Route Server simplifies routing for traffic between workloads that are deployed within a VPC and its internet gateways. With this feature, VPC Route Server dynamically updates VPC and internet gateway route tables with your preferred IPv4 or IPv6 routes to achieve routing fault tolerance for those workloads. This enables you to automatically reroute traffic within a VPC, which increases the manageability of VPC routing and interoperability with third-party workloads.

Route server supports the follow route table types:

- VPC route tables not associated with subnets
- Subnet route tables
- Internet gateway route tables

Route server does not support route tables associated with virtual private gateways. To propagate routes into a transit gateway route table, use Transit Gateway Connect.

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AmazonSideAsn**

The private Autonomous System Number (ASN) for the Amazon side of the BGP session. Valid values are from 1 to 4294967295. We recommend using a private ASN in the 64512–65534 (16-bit ASN) or 4200000000–4294967294 (32-bit ASN) range.

Type: Long

Required: Yes

**ClientToken**

Unique, case-sensitive identifier to ensure idempotency of the request.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PersistRoutes**

Indicates whether routes should be persisted after all BGP sessions are terminated.

Type: String

Valid Values: `enable | disable | reset`

Required: No

**PersistRoutesDuration**

The number of minutes a route server will wait after BGP is re-established to unpersist the routes in the FIB and RIB. Value must be in the range of 1-5. Required if PersistRoutes is `enabled`.

If you set the duration to 1 minute, then when your network appliance re-establishes BGP with route server, it has 1 minute to relearn it's adjacent network and advertise those routes to route server before route server resumes normal functionality. In most cases, 1 minute is probably sufficient. If, however, you have concerns that your BGP network may not be capable of fully re-establishing and re-learning everything in 1 minute, you can increase the duration up to 5 minutes.

Type: Long

Required: No

**SnsNotificationsEnabled**

Indicates whether SNS notifications should be enabled for route server events. Enabling SNS notifications persists BGP status changes to an SNS topic provisioned by AWS.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to apply to the route server during creation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServer**

Information about the created route server.

Type: RouteServer object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateRouteServerEndpoint

Creates a new endpoint for a route server in a specified subnet.

A route server endpoint is an AWS-managed component inside a subnet that facilitates BGP (Border Gateway Protocol) connections between your route server and your BGP peers.

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier to ensure idempotency of the request.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteServerId**

The ID of the route server for which to create an endpoint.

Type: String

Required: Yes

**SubnetId**

The ID of the subnet in which to create the route server endpoint.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the route server endpoint during creation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServerEndpoint**

Information about the created route server endpoint.

Type: RouteServerEndpoint object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateRouteServerPeer

Creates a new BGP peer for a specified route server endpoint.

A route server peer is a session between a route server endpoint and the device deployed in AWS (such as a firewall appliance or other network security function running on an EC2 instance). The device must meet these requirements:

- Have an elastic network interface in the VPC
- Support BGP (Border Gateway Protocol)
- Can initiate BGP sessions

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**BgpOptions**

The BGP options for the peer, including ASN (Autonomous System Number) and BFD (Bidirectional Forwarding Detection) settings.

Type: RouteServerBgpOptionsRequest object

Required: Yes

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PeerAddress**

The IPv4 address of the peer device.

Type: String

Required: Yes

**RouteServerEndpointId**

The ID of the route server endpoint for which to create a peer.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the route server peer during creation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServerPeer**

Information about the created route server peer.

Type: RouteServerPeer object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateRouteTable

Creates a route table for the specified VPC. After you create a route table, you can add routes and associate the table with a subnet.

For more information, see Route tables in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to assign to the route table.

Type: Array of TagSpecification objects

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier to ensure the idempotency of the request. Only returned if a client token was provided in the request.

Type: String

**requestId**

The ID of the request.

Type: String

**routeTable**

Information about the route table.

Type: RouteTable object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates a route table for the VPC with the ID `vpc-1122334455667788a`. By default, every route table includes a local route that enables traffic to flow within the VPC. The following response shows that route.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateRouteTable
&VpcId=vpc-1122334455667788a
```

```
&AUTHPARAMS
```

### Sample Response

```
<CreateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <routeTable>
      <routeTableId>rtb-029e01e661a8fffd9</routeTableId>
      <vpcId>vpc-11ad4878</vpcId>
      <routeSet>
         <item>
            <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
            <gatewayId>local</gatewayId>
            <state>active</state>
         </item>
      </routeSet>
      <associationSet/>
      <tagSet/>
   </routeTable>
</CreateRouteTableResponse>
```

## Example 2

This example creates a route table for a VPC that has an associated IPv6 CIDR block. The route table includes a local route that enables IPv6 traffic to flow within the VPC.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRouteTable
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

### Sample Response

```
<CreateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <routeTable>
        <routeTableId>rtb-8bda6cef</routeTableId>
        <vpcId>vpc-1a2b3c4d</vpcId>
        <routeSet>
            <item>
                <destinationCidrBlock>10.0.0.0/16</destinationCidrBlock>
```

```
                <gatewayId>local</gatewayId>
                <state>active</state>
                <origin>CreateRouteTable</origin>
            </item>
            <item>
                <destinationIpv6CidrBlock>2001:db8:1234:1a00::/56</
destinationIpv6CidrBlock>
                <gatewayId>local</gatewayId>
                <state>active</state>
                <origin>CreateRouteTable</origin>
            </item>
        </routeSet>
        <associationSet/>
        <propagatingVgwSet/>
        <tagSet/>
    </routeTable>
</CreateRouteTableResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateSecondaryNetwork

Creates a secondary network.

The allowed size for a secondary network CIDR block is between /28 netmask (16 IP addresses) and /12 netmask (1,048,576 IP addresses).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Ipv4CidrBlock**

The IPv4 CIDR block for the secondary network. The CIDR block size must be between /12 and /28.

Type: String

Required: Yes

**NetworkType**

The type of secondary network.

Type: String

Valid Values: `rdma`

Required: Yes

**TagSpecification.N**

The tags to assign to the secondary network.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier to ensure the idempotency of the request. Only returned if a client token was provided in the request.

Type: String

**requestId**

The ID of the request.

Type: String

**secondaryNetwork**

Information about the secondary network.

Type: SecondaryNetwork object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a rdma secondary network with a /16 CIDR block.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSecondaryNetwork
   &Ipv4CidrBlock=10.0.0.0/16
   &NetworkType=rdma
   &ClientToken=550e8400-e29b-41d4-a716-446655440000
   &TagSpecification.1.ResourceType=secondary-network
   &TagSpecification.1.Tag.1.Key=Name
   &TagSpecification.1.Tag.1.Value=Prod%20Secondary%20Network
   &AUTHPARAMS
```

### Sample Response

```
<CreateSecondaryNetworkResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <secondaryNetwork>
      <secondaryNetworkId>sn-0123456789abcdef0</secondaryNetworkId>
      <secondaryNetworkArn>arn:aws:ec2:us-east-2:123456789012:secondary-network/
sn-0123456789abcdef0</secondaryNetworkArn>
      <ownerId>123456789012</ownerId>
      <type>rdma</type>
      <state>create-in-progress</state>
      <ipv4CidrBlockAssociations>
         <item>
            <associationId>sn-cidr-assoc-56789901234abcdef0</associationId>
            <cidrBlock>10.0.0.0/16</cidrBlock>
            <state>associating</state>
         </item>
      </ipv4CidrBlockAssociations>
      <tagSet>
         <item>
            <key>Name</key>
            <value>Prod Secondary Network</value>
         </item>
      </tagSet>
   </secondaryNetwork>
   <clientToken>550e8400-e29b-41d4-a716-446655440000</clientToken>
</CreateSecondaryNetworkResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateSecondarySubnet

Creates a secondary subnet in a secondary network.

A secondary subnet CIDR block must not overlap with the CIDR block of an existing secondary subnet in the secondary network. After you create a secondary subnet, you can't change its CIDR block.

The allowed size for a secondary subnet CIDR block is between /28 netmask (16 IP addresses) and /12 netmask (1,048,576 IP addresses). Amazon reserves the first four IP addresses and the last IP address in each secondary subnet for internal use.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZone**

The Availability Zone for the secondary subnet. You cannot specify both `AvailabilityZone` and `AvailabilityZoneId` in the same request.

Type: String

Required: No

**AvailabilityZoneId**

The ID of the Availability Zone for the secondary subnet. This option is preferred over `AvailabilityZone` as it provides a consistent identifier across AWS accounts. You cannot specify both `AvailabilityZone` and `AvailabilityZoneId` in the same request.

Type: String

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Ipv4CidrBlock**

The IPv4 CIDR block for the secondary subnet. The CIDR block size must be between /12 and /28.

Type: String

Required: Yes

**SecondaryNetworkId**

The ID of the secondary network in which to create the secondary subnet.

Type: String

Required: Yes

**TagSpecification.N**

The tags to assign to the secondary subnet.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier to ensure the idempotency of the request. Only returned if a client token was provided in the request.

Type: String

**requestId**

The ID of the request.

Type: String

**secondarySubnet**

Information about the secondary subnet.

Type: SecondarySubnet object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a secondary subnet with a /24 CIDR block in the specified secondary network and Availability Zone.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSecondarySubnet
   &SecondaryNetworkId=sn-0123456789abcdef0
   &Ipv4CidrBlock=10.0.0.0/24
   &AvailabilityZoneId=use2-az1
   &ClientToken=550e8400-e29b-41d4-a716-446655440000
   &TagSpecification.1.ResourceType=secondary-subnet
   &TagSpecification.1.Tag.1.Key=Name
   &TagSpecification.1.Tag.1.Value=Prod%20Secondary%20Subnet
   &TagSpecification.1.Tag.2.Key=Environment
   &TagSpecification.1.Tag.2.Value=Production
   &AUTHPARAMS
```

#### Sample Response

```
<CreateSecondarySubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
   <secondarySubnet>
      <secondarySubnetId>ss-0123456789abcdef0</secondarySubnetId>
      <secondarySubnetArn>arn:aws:ec2:us-east-2:123456789012:secondary-subnet/
ss-0123456789abcdef0</secondarySubnetArn>
      <secondaryNetworkId>sn-0123456789abcdef0</secondaryNetworkId>
      <secondaryNetworkType>rdma</secondaryNetworkType>
      <ownerId>123456789012</ownerId>
      <availabilityZoneId>use2-az1</availabilityZoneId>
      <availabilityZone>us-east-2a</availabilityZone>
      <ipv4CidrBlockAssociations>
         <item>
            <associationId>ss-cidr-assoc-56789901234abcdef0</associationId>
            <cidrBlock>10.0.0.0/24</cidrBlock>
            <state>associating</state>
         </item>
      </ipv4CidrBlockAssociations>
      <state>create-in-progress</state>
      <tagSet>
         <item>
            <key>Name</key>
            <value>Prod Secondary Subnet</value>
         </item>
         <item>
            <key>Environment</key>
            <value>Production</value>
         </item>
      </tagSet>
   </secondarySubnet>
   <clientToken>550e8400-e29b-41d4-a716-446655440000</clientToken>
</CreateSecondarySubnetResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateSecurityGroup

Creates a security group.

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. For more information, see Amazon EC2 security groups in the *Amazon EC2 User Guide* and Security groups for your VPC in the *Amazon VPC User Guide*.

When you create a security group, you specify a friendly name of your choice. You can't have two security groups for the same VPC with the same name.

You have a default security group for use in your VPC. If you don't specify a security group when you launch an instance, the instance is launched into the appropriate default security group. A default security group includes a default rule that grants instances unrestricted network access to each other.

You can add or remove rules from your security groups using AuthorizeSecurityGroupIngress, AuthorizeSecurityGroupEgress, RevokeSecurityGroupIngress, and RevokeSecurityGroupEgress.

For more information about VPC security group limits, see Amazon VPC Limits.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupDescription**

A description for the security group.

Constraints: Up to 255 characters in length

Valid characters: a-z, A-Z, 0-9, spaces, and ._-:/()#,@[]+=&;{}!$*

Type: String

Required: Yes

**GroupName**

The name of the security group. Names are case-insensitive and must be unique within the VPC.

Constraints: Up to 255 characters in length. Can't start with `sg-`.

Valid characters: a-z, A-Z, 0-9, spaces, and ._-:/()#,@[]+=&;{}!$*

Type: String

Required: Yes

**TagSpecification.N**

The tags to assign to the security group.

Type: Array of TagSpecification objects

Required: No

**VpcId**

The ID of the VPC. Required for a nondefault VPC.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**groupId**

The ID of the security group.

Type: String

**requestId**

The ID of the request.

Type: String

**securityGroupArn**

The security group ARN.

Type: String

**tagSet**

The tags assigned to the security group.

Type: Array of Tag objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a security group named `WebServerSG` for the specified VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSecurityGroup
&GroupName=WebServerSG
&GroupDescription=Web Servers
&VpcId=vpc-3325caf2
&AUTHPARAMS
```

#### Sample Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
   <groupId>sg-0a42d66a</groupId>
```

```
</CreateSecurityGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateSnapshot

Creates a snapshot of an EBS volume and stores it in Amazon S3. You can use snapshots for backups, to make copies of EBS volumes, and to save data before shutting down an instance.

The location of the source EBS volume determines where you can create the snapshot.

- If the source volume is in a Region, you must create the snapshot in the same Region as the volume.
- If the source volume is in a Local Zone, you can create the snapshot in the same Local Zone or in its parent AWS Region.
- If the source volume is on an Outpost, you can create the snapshot on the same Outpost or in its parent AWS Region.

When a snapshot is created, any AWS Marketplace product codes that are associated with the source volume are propagated to the snapshot.

You can take a snapshot of an attached volume that is in use. However, snapshots only capture data that has been written to your Amazon EBS volume at the time the snapshot command is issued; this might exclude any data that has been cached by any applications or the operating system. If you can pause any file systems on the volume long enough to take a snapshot, your snapshot should be complete. However, if you cannot pause all file writes to the volume, you should unmount the volume from within the instance, issue the snapshot command, and then remount the volume to ensure a consistent and complete snapshot. You may remount and use your volume while the snapshot status is `pending`.

When you create a snapshot for an EBS volume that serves as a root device, we recommend that you stop the instance before taking the snapshot.

Snapshots that are taken from encrypted volumes are automatically encrypted. Volumes that are created from encrypted snapshots are also automatically encrypted. Your encrypted volumes and any associated snapshots always remain protected. For more information, see Amazon EBS encryption in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Description**

A description for the snapshot.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Location**

> **Note**
>
> Only supported for volumes in Local Zones. If the source volume is not in a Local Zone, omit this parameter.

- To create a local snapshot in the same Local Zone as the source volume, specify `local`.
- To create a regional snapshot in the parent Region of the Local Zone, specify `regional` or omit this parameter.

Default value: `regional`

Type: String

Valid Values: `regional | local`

Required: No

**OutpostArn**

> **Note**
>
> Only supported for volumes on Outposts. If the source volume is not on an Outpost, omit this parameter.

- To create the snapshot on the same Outpost as the source volume, specify the ARN of that Outpost. The snapshot must be created on the same Outpost as the volume.
- To create the snapshot in the parent Region of the Outpost, omit this parameter.

For more information, see Create local snapshots from volumes on an Outpost in the *Amazon EBS User Guide*.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the snapshot during creation.

Type: Array of TagSpecification objects

Required: No

**VolumeId**

The ID of the Amazon EBS volume.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**availabilityZone**

The Availability Zone or Local Zone of the snapshot. For example, `us-west-1a` (Availability Zone) or `us-west-2-lax-1a` (Local Zone).

Type: String

**completionDurationMinutes**

> **Note**
>
> Only for snapshot copies created with time-based snapshot copy operations.

The completion duration requested for the time-based snapshot copy operation.

Type: Integer

**completionTime**

The time stamp when the snapshot was completed.

Type: Timestamp

**dataEncryptionKeyId**

The data encryption key identifier for the snapshot. This value is a unique identifier that corresponds to the data encryption key that was used to encrypt the original volume or snapshot copy. Because data encryption keys are inherited by volumes created from snapshots, and vice versa, if snapshots share the same data encryption key identifier, then they belong to the same volume/snapshot lineage. This parameter is only returned by DescribeSnapshots.

Type: String

**description**

The description for the snapshot.

Type: String

**encrypted**

Indicates whether the snapshot is encrypted.

Type: Boolean

**fullSnapshotSizeInBytes**

The full size of the snapshot, in bytes.

> **Important**
>
> This is **not** the incremental size of the snapshot. This is the full snapshot size and represents the size of all the blocks that were written to the source volume at the time the snapshot was created.

Type: Long

**kmsKeyId**

The Amazon Resource Name (ARN) of the AWS KMS key that was used to protect the volume encryption key for the parent volume.

Type: String

**outpostArn**

The ARN of the Outpost on which the snapshot is stored. For more information, see Amazon EBS local snapshots on Outposts in the *Amazon EBS User Guide*.

Type: String

**ownerAlias**

The AWS owner alias, from an Amazon-maintained list (`amazon`). This is not the user-configured AWS account alias set using the IAM console.

Type: String

**ownerId**

The ID of the AWS account that owns the EBS snapshot.

Type: String

**progress**

The progress of the snapshot, as a percentage.

Type: String

**requestId**

The ID of the request.

Type: String

**restoreExpiryTime**

Only for archived snapshots that are temporarily restored. Indicates the date and time when a temporarily restored snapshot will be automatically re-archived.

Type: Timestamp

**snapshotId**

The ID of the snapshot. Each snapshot receives a unique identifier when it is created.

Type: String

**sseType**

Reserved for future use.

Type: String

Valid Values: `sse-ebs | sse-kms | none`

**startTime**

The time stamp when the snapshot was initiated.

Type: Timestamp

**status**

The snapshot state.

Type: String

Valid Values: `pending | completed | error | recoverable | recovering`

**statusMessage**

Encrypted Amazon EBS snapshots are copied asynchronously. If a snapshot copy operation fails (for example, if the proper AWS KMS permissions are not obtained) this field displays error state details to help you diagnose why the error occurred. This parameter is only returned by DescribeSnapshots.

Type: String

**storageTier**

The storage tier in which the snapshot is stored. `standard` indicates that the snapshot is stored in the standard snapshot storage tier and that it is ready for use. `archive` indicates that the snapshot is currently archived and that it must be restored before it can be used.

Type: String

Valid Values: `archive | standard`

**tagSet**

Any tags assigned to the snapshot.

Type: Array of Tag objects

**transferType**

> **Note**
>
> Only for snapshot copies.

Indicates whether the snapshot copy was created with a standard or time-based snapshot copy operation. Time-based snapshot copy operations complete within the completion duration specified in the request. Standard snapshot copy operations are completed on a best-effort basis.

- `standard` - The snapshot copy was created with a standard snapshot copy operation.
- `time-based` - The snapshot copy was created with a time-based snapshot copy operation.

Type: String

Valid Values: `time-based | standard`

**volumeId**

The ID of the volume that was used to create the snapshot. Snapshots created by a copy snapshot operation have an arbitrary volume ID that you should not use for any purpose.

Type: String

**volumeSize**

The size of the volume, in GiB.

Type: Integer

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example creates a snapshot of the volume with the ID `vol-1234567890abcdef0`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSnapshot
&VolumeId=vol-1234567890abcdef0
&Description=Daily+Backup
&AUTHPARAMS
```

### Sample Response

```
<CreateSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotId>snap-1234567890abcdef0</snapshotId>
  <volumeId>vol-1234567890abcdef0</volumeId>
  <status>pending</status>
  <startTime>YYYY-MM-DDTHH:MM:SS.000Z</startTime>
  <progress>60%</progress>
  <ownerId>111122223333</ownerId>
  <volumeSize>30</volumeSize>
  <description>Daily Backup</description>
</CreateSnapshotResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateSnapshots

Creates crash-consistent snapshots of multiple EBS volumes attached to an Amazon EC2 instance. Volumes are chosen by specifying an instance. Each volume attached to the specified instance will produce one snapshot that is crash-consistent across the instance. You can include all of the volumes currently attached to the instance, or you can exclude the root volume or specific data (non-root) volumes from the multi-volume snapshot set.

The location of the source instance determines where you can create the snapshots.

- If the source instance is in a Region, you must create the snapshots in the same Region as the instance.
- If the source instance is in a Local Zone, you can create the snapshots in the same Local Zone or in its parent AWS Region.
- If the source instance is on an Outpost, you can create the snapshots on the same Outpost or in its parent AWS Region.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CopyTagsFromSource**

Copies the tags from the specified volume to corresponding snapshot.

Type: String

Valid Values: `volume`

Required: No

**Description**

A description propagated to every snapshot specified by the instance.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceSpecification**

The instance to specify which volumes should be included in the snapshots.

Type: InstanceSpecification object

Required: Yes

**Location**

> **Note**
>
> Only supported for instances in Local Zones. If the source instance is not in a Local Zone, omit this parameter.

- To create local snapshots in the same Local Zone as the source instance, specify `local`.
- To create regional snapshots in the parent Region of the Local Zone, specify `regional` or omit this parameter.

Default value: `regional`

Type: String

Valid Values: `regional | local`

Required: No

**OutpostArn**

> **Note**
>
> Only supported for instances on Outposts. If the source instance is not on an Outpost, omit this parameter.

- To create the snapshots on the same Outpost as the source instance, specify the ARN of that Outpost. The snapshots must be created on the same Outpost as the instance.
- To create the snapshots in the parent Region of the Outpost, omit this parameter.

For more information, see Create local snapshots from volumes on an Outpost in the *Amazon EBS User Guide*.

Type: String

Required: No

**TagSpecification.N**

Tags to apply to every snapshot specified by the instance.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**snapshotSet**

List of snapshots.

Type: Array of SnapshotInfo objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateSpotDatafeedSubscription

Creates a data feed for Spot Instances, enabling you to view Spot Instance usage logs. You can create one data feed per AWS account. For more information, see Spot Instance data feed in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Bucket**

The name of the Amazon S3 bucket in which to store the Spot Instance data feed. For more information about bucket names, see Bucket naming rules in the *Amazon S3 User Guide*.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Prefix**

The prefix for the data feed file names.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**spotDatafeedSubscription**

The Spot Instance data feed subscription.

Type: SpotDatafeedSubscription object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a Spot Instance data feed for the account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSpotDatafeedSubscription
&Bucket=amzn-s3-demo-bucket
&AUTHPARAMS
```

#### Sample Response

```
<CreateSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotDatafeedSubscription>
    <ownerId>123456789012</ownerId>
    <bucket>amzn-s3-demo-bucket</bucket>
    <prefix>spotdata_</prefix>
    <state>Active</state>
  </spotDatafeedSubscription>
</CreateSpotDatafeedSubscriptionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateStoreImageTask

Stores an AMI as a single object in an Amazon S3 bucket.

To use this API, you must have the required permissions. For more information, see Permissions for storing and restoring AMIs using S3 in the *Amazon EC2 User Guide*.

For more information, see Store and restore an AMI using S3 in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Bucket**

The name of the Amazon S3 bucket in which the AMI object will be stored. The bucket must be in the Region in which the request is being made. The AMI object appears in the bucket only after the upload task has completed.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

**S3ObjectTag.N**

The tags to apply to the AMI object that will be stored in the Amazon S3 bucket.

Type: Array of S3ObjectTag objects

Required: No

## Response Elements

The following elements are returned by the service.

**objectKey**

The name of the stored AMI object in the S3 bucket.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# CreateSubnet

Creates a subnet in the specified VPC. For an IPv4 only subnet, specify an IPv4 CIDR block. If the VPC has an IPv6 CIDR block, you can create an IPv6 only subnet or a dual stack subnet instead. For an IPv6 only subnet, specify an IPv6 CIDR block. For a dual stack subnet, specify both an IPv4 CIDR block and an IPv6 CIDR block.

A subnet CIDR block must not overlap the CIDR block of an existing subnet in the VPC. After you create a subnet, you can't change its CIDR block.

The allowed size for an IPv4 subnet is between a /28 netmask (16 IP addresses) and a /16 netmask (65,536 IP addresses). AWS reserves both the first four and the last IPv4 address in each subnet's CIDR block. They're not available for your use.

If you've associated an IPv6 CIDR block with your VPC, you can associate an IPv6 CIDR block with a subnet when you create it.

If you add more than one subnet to a VPC, they're set up in a star topology with a logical router in the middle.

When you stop an instance in a subnet, it retains its private IPv4 address. It's therefore possible to have a subnet with no running instances (they're all stopped), but no remaining IP addresses available.

For more information, see Subnets in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZone**

The Availability Zone or Local Zone for the subnet.

Default: AWS selects one for you. If you create more than one subnet in your VPC, we do not necessarily select a different zone for each subnet.

To create a subnet in a Local Zone, set this value to the Local Zone ID, for example `us-west-2-lax-1a`. For information about the Regions that support Local Zones, see Available Local Zones.

To create a subnet in an Outpost, set this value to the Availability Zone for the Outpost and specify the Outpost ARN.

Type: String

Required: No

**AvailabilityZoneId**

The AZ ID or the Local Zone ID of the subnet.

Type: String

Required: No

**CidrBlock**

The IPv4 network range for the subnet, in CIDR notation. For example, `10.0.0.0/24`. We modify the specified CIDR block to its canonical form; for example, if you specify `100.68.0.18/18`, we modify it to `100.68.0.0/18`.

This parameter is not supported for an IPv6 only subnet.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Ipv4IpamPoolId**

An IPv4 IPAM pool ID for the subnet.

Type: String

Required: No

**Ipv4NetmaskLength**

An IPv4 netmask length for the subnet.

Type: Integer

Required: No

**Ipv6CidrBlock**

The IPv6 network range for the subnet, in CIDR notation. This parameter is required for an IPv6 only subnet.

Type: String

Required: No

**Ipv6IpamPoolId**

An IPv6 IPAM pool ID for the subnet.

Type: String

Required: No

**Ipv6Native**

Indicates whether to create an IPv6 only subnet.

Type: Boolean

Required: No

**Ipv6NetmaskLength**

An IPv6 netmask length for the subnet.

Type: Integer

Required: No

**OutpostArn**

The Amazon Resource Name (ARN) of the Outpost. If you specify an Outpost ARN, you must also specify the Availability Zone of the Outpost subnet.

Type: String

Required: No

**TagSpecification.N**

The tags to assign to the subnet.

Type: Array of TagSpecification objects

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**subnet**

Information about the subnet.

Type: Subnet object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates a subnet with CIDR block `10.0.1.0/24` in the VPC with the ID `vpc-1a2b3c4d`.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateSubnet
&VpcId=vpc-1a2b3c4d
```

```
&CidrBlock=10.0.1.0/24
&AUTHPARAMS
```

### Sample Response

```
<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>e6cb93f0-eb09-40ee-b9aa-16db90a0524f</requestId>
    <subnet>
        <subnetId>subnet-0397b6c47c42e4dc0</subnetId>
        <subnetArn>arn:aws:ec2:us-east-2:111122223333:subnet/subnet-0397b6c47cEXAMPLE</
subnetArn>
        <state>pending</state>
        <ownerId>111122223333</ownerId>
        <vpcId>vpc-06b7830650EXAMPLE</vpcId>
        <cidrBlock>10.0.0.0/24</cidrBlock>
        <ipv6CidrBlockAssociationSet/>
        <availableIpAddressCount>251</availableIpAddressCount>
        <availabilityZone>us-east-2a</availabilityZone>
        <availabilityZoneId>use2-az1</availabilityZoneId>
        <defaultForAz>false</defaultForAz>
        <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
        <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation>
    </subnet>
</CreateSubnetResponse>
```

## Example 2

This example creates a subnet with an IPv6 CIDR block in the VPC `vpc-1a2b3c4d`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSubnet
&VpcId=vpc-07e8ffd50fEXAMPLE
&CidrBlock=10.0.1.0/24
&Ipv6CidrBlock=2600:1f16:115:200::/64
&AUTHPARAMS
```

### Sample Response

```
<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <subnet>
```

```
   <subnetId>subnet-02bf4c428bEXAMPLE</subnetId>
   <subnetArn>arn:aws:ec2:us-east-2:111122223333:subnet/subnet-02bf4c428bEXAMPLE</
subnetArn>
   <state>available</state>
   <ownerId>111122223333</ownerId>
   <vpcId>vpc-07e8ffd50fEXAMPLE</vpcId>
   <cidrBlock>10.0.0.0/24</cidrBlock>
   <ipv6CidrBlockAssociationSet>
      <item>
       <ipv6CidrBlock>2600:1f16:115:200::/64</ipv6CidrBlock>
       <associationId>subnet-cidr-assoc-002afb9f3cEXAMPLE</associationId>
       <ipv6CidrBlockState>
          <state>associated</state>
       </ipv6CidrBlockState>
    </item>
    </ipv6CidrBlockAssociationSet>
    <availableIpAddressCount>251</availableIpAddressCount>
    <availabilityZone>us-east-2b</availabilityZone>
    <availabilityZoneId>use2-az2</availabilityZoneId>
    <defaultForAz>false</defaultForAz>
    <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
    <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation
  </subnet>
</CreateSubnetResponse>
```

## Example 3

This example creates a subnet with an IPv6 CIDR block in the specified Local Zone.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSubnet
&VpcId=vpc-07e8ffd50fEXAMPLE
&CidrBlock=10.0.1.0/24
&Ipv6CidrBlock=2600:1f16:115:200::/64
&AvailabilityZone=us-west-2-lax-1a
&AUTHPARAMS
```

### Sample Response

```
<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
 <subnet>
```

```
    <subnetId>subnet-093cb4a1ecEXAMPLE</subnetId>
    <subnetArn>arn:aws:ec2:us-west-2:111122223333:subnet/subnet-093cb4a1ecEXAMPLE</
subnetArn><subnetArn>
   <state>available</state>
   <ownerId>111122223333</ownerId>
   <vpcId>vpc-07d80fe1a43298172</vpcId>
   <cidrBlock>10.0.0.0/24</cidrBlock>
   <ipv6CidrBlockAssociationSet>
      <item>
       <ipv6CidrBlock>2600:1f16:115:200::/64</ipv6CidrBlock>
       <associationId>subnet-cidr-assoc-002afb9f3cEXAMPLE</associationId>
       <ipv6CidrBlockState>
          <state>associated</state>
       </ipv6CidrBlockState>
    </item>
    </ipv6CidrBlockAssociationSet>
    <availableIpAddressCount>251</availableIpAddressCount>
    <availabilityZone>us-west-2-lax-1a</availabilityZone>
     <availabilityZoneId>usw2-lax1-az1</availabilityZoneId>
    <defaultForAz>false</defaultForAz>
    <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
    <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation
  </subnet>
</CreateSubnetResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# CreateSubnetCidrReservation

Creates a subnet CIDR reservation. For more information, see Subnet CIDR reservations in the *Amazon VPC User Guide* and Manage prefixes for your network interfaces in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

The IPv4 or IPV6 CIDR range to reserve.

Type: String

Required: Yes

**Description**

The description to assign to the subnet CIDR reservation.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ReservationType**

The type of reservation. The reservation type determines how the reserved IP addresses are assigned to resources.

- `prefix` - AWS assigns the reserved IP addresses to network interfaces.

- `explicit` - You assign the reserved IP addresses to network interfaces.

Type: String

Valid Values: `prefix | explicit`

Required: Yes

**SubnetId**

The ID of the subnet.

Type: String

Required: Yes

**TagSpecification.N**

The tags to assign to the subnet CIDR reservation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**subnetCidrReservation**

Information about the created subnet CIDR reservation.

Type: SubnetCidrReservation object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTags

Adds or overwrites only the specified tags for the specified Amazon EC2 resource or resources. When you specify an existing tag key, the value is overwritten with the new value. Each resource can have a maximum of 50 tags. Each tag consists of a key and optional value. Tag keys must be unique per resource.

For more information about tags, see Tag your Amazon EC2 resources in the *Amazon Elastic Compute Cloud User Guide*. For more information about creating IAM policies that control users' access to resources based on tags, see Supported resource-level permissions for Amazon EC2 API actions in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ResourceId.N**

The IDs of the resources, separated by spaces.

Constraints: Up to 1000 resource IDs. We recommend breaking up this request into smaller batches.

Type: Array of strings

Required: Yes

**Tag.N**

The tags. The `value` parameter is required, but if you don't want the tag to have a value, specify the parameter with no value, and we set the value to an empty string.

Type: Array of Tag objects

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example request adds (or overwrites) two tags for an AMI and an instance. One of the tags is a key (`webserver`), with no value (we set the value to an empty string). The other tag consists of a key (`stack`) and value (`Production`).

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateTags
&ResourceId.1=ami-1a2b3c4d
&ResourceId.2=i-1234567890abcdef0
&Tag.1.Key=webserver
&Tag.1.Value=
&Tag.2.Key=stack
&Tag.2.Value=Production
```

```
&AUTHPARAMS
```

### Sample Response

```
<CreateTagsResponse
xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</CreateTagsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTrafficMirrorFilter

Creates a Traffic Mirror filter.

A Traffic Mirror filter is a set of rules that defines the traffic to mirror.

By default, no traffic is mirrored. To mirror traffic, use CreateTrafficMirrorFilterRule to add Traffic Mirror rules to the filter. The rules you add define what traffic gets mirrored. You can also use ModifyTrafficMirrorFilterNetworkServices to mirror supported network services.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: No

**Description**

The description of the Traffic Mirror filter.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to assign to a Traffic Mirror filter.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorFilter**

Information about the Traffic Mirror filter.

Type: TrafficMirrorFilter object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTrafficMirrorFilterRule

Creates a Traffic Mirror filter rule.

A Traffic Mirror rule defines the Traffic Mirror source traffic to mirror.

You need the Traffic Mirror filter ID when you create the rule.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: No

**Description**

The description of the Traffic Mirror rule.

Type: String

Required: No

**DestinationCidrBlock**

The destination CIDR block to assign to the Traffic Mirror rule.

Type: String

Required: Yes

**DestinationPortRange**

The destination port range.

Type: TrafficMirrorPortRangeRequest object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Protocol**

The protocol, for example UDP, to assign to the Traffic Mirror rule.

For information about the protocol value, see Protocol Numbers on the Internet Assigned Numbers Authority (IANA) website.

Type: Integer

Required: No

**RuleAction**

The action to take on the filtered traffic.

Type: String

Valid Values: `accept | reject`

Required: Yes

**RuleNumber**

The number of the Traffic Mirror rule. This number must be unique for each Traffic Mirror rule in a given direction. The rules are processed in ascending order by rule number.

Type: Integer

Required: Yes

**SourceCidrBlock**

The source CIDR block to assign to the Traffic Mirror rule.

Type: String

Required: Yes

**SourcePortRange**

The source port range.

Type: TrafficMirrorPortRangeRequest object

Required: No

**TagSpecification.N**

Traffic Mirroring tags specifications.

Type: Array of TagSpecification objects

Required: No

**TrafficDirection**

The type of traffic.

Type: String

Valid Values: `ingress | egress`

Required: Yes

**TrafficMirrorFilterId**

The ID of the filter that this rule is associated with.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorFilterRule**

The Traffic Mirror rule.

Type: TrafficMirrorFilterRule object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTrafficMirrorSession

Creates a Traffic Mirror session.

A Traffic Mirror session actively copies packets from a Traffic Mirror source to a Traffic Mirror target. Create a filter, and then assign it to the session to define a subset of the traffic to mirror, for example all TCP traffic.

The Traffic Mirror source and the Traffic Mirror target (monitoring appliances) can be in the same VPC, or in a different VPC connected via VPC peering or a transit gateway.

By default, no traffic is mirrored. Use CreateTrafficMirrorFilter to create filter rules that specify the traffic to mirror.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: No

**Description**

The description of the Traffic Mirror session.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkInterfaceId**

The ID of the source network interface.

Type: String

Required: Yes

**PacketLength**

The number of bytes in each packet to mirror. These are bytes after the VXLAN header. Do not specify this parameter when you want to mirror the entire packet. To mirror a subset of the packet, set this to the length (in bytes) that you want to mirror. For example, if you set this value to 100, then the first 100 bytes that meet the filter criteria are copied to the target.

If you do not want to mirror the entire packet, use the `PacketLength` parameter to specify the number of bytes in each packet to mirror.

For sessions with Network Load Balancer (NLB) Traffic Mirror targets the default `PacketLength` will be set to 8500. Valid values are 1-8500. Setting a `PacketLength` greater than 8500 will result in an error response.

Type: Integer

Required: No

**SessionNumber**

The session number determines the order in which sessions are evaluated when an interface is used by multiple sessions. The first session with a matching filter is the one that mirrors the packets.

Valid values are 1-32766.

Type: Integer

Required: Yes

**TagSpecification.N**

The tags to assign to a Traffic Mirror session.

Type: Array of TagSpecification objects

Required: No

**TrafficMirrorFilterId**

The ID of the Traffic Mirror filter.

Type: String

Required: Yes

**TrafficMirrorTargetId**

The ID of the Traffic Mirror target.

Type: String

Required: Yes

**VirtualNetworkId**

The VXLAN ID for the Traffic Mirror session. For more information about the VXLAN protocol, see RFC 7348. If you do not specify a `VirtualNetworkId`, an account-wide unique ID is chosen at random.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorSession**

Information about the Traffic Mirror session.

Type: TrafficMirrorSession object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTrafficMirrorTarget

Creates a target for your Traffic Mirror session.

A Traffic Mirror target is the destination for mirrored traffic. The Traffic Mirror source and the Traffic Mirror target (monitoring appliances) can be in the same VPC, or in different VPCs connected via VPC peering or a transit gateway.

A Traffic Mirror target can be a network interface, a Network Load Balancer, or a Gateway Load Balancer endpoint.

To use the target in a Traffic Mirror session, use CreateTrafficMirrorSession.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: No

**Description**

The description of the Traffic Mirror target.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GatewayLoadBalancerEndpointId**

The ID of the Gateway Load Balancer endpoint.

Type: String

Required: No

**NetworkInterfaceId**

The network interface ID that is associated with the target.

Type: String

Required: No

**NetworkLoadBalancerArn**

The Amazon Resource Name (ARN) of the Network Load Balancer that is associated with the target.

Type: String

Required: No

**TagSpecification.N**

The tags to assign to the Traffic Mirror target.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorTarget**

Information about the Traffic Mirror target.

Type: TrafficMirrorTarget object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGateway

Creates a transit gateway.

You can use a transit gateway to interconnect your virtual private clouds (VPC) and on-premises networks. After the transit gateway enters the `available` state, you can attach your VPCs and VPN connections to the transit gateway.

To attach your VPCs, use CreateTransitGatewayVpcAttachment.

To attach a VPN connection, use CreateCustomerGateway to create a customer gateway and specify the ID of the customer gateway and the ID of the transit gateway in a call to CreateVpnConnection.

When you create a transit gateway, we create a default transit gateway route table and use it as the default association route table and the default propagation route table. You can use CreateTransitGatewayRouteTable to create additional transit gateway route tables. If you disable automatic route propagation, we do not create a default transit gateway route table. You can use EnableTransitGatewayRouteTablePropagation to propagate routes from a resource attachment to a transit gateway route table. If you disable automatic associations, you can use AssociateTransitGatewayRouteTable to associate a resource attachment with a transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Description**

A description of the transit gateway.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Options**

The transit gateway options.

Type: TransitGatewayRequestOptions object

Required: No

**TagSpecification.N**

The tags to apply to the transit gateway.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGateway**

Information about the transit gateway.

Type: TransitGateway object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGatewayConnect

Creates a Connect attachment from a specified transit gateway attachment. A Connect attachment is a GRE-based tunnel attachment that you can use to establish a connection between a transit gateway and an appliance.

A Connect attachment uses an existing VPC or AWS Direct Connect attachment as the underlying transport mechanism.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Options**

The Connect attachment options.

Type: CreateTransitGatewayConnectRequestOptions object

Required: Yes

**TagSpecification.N**

The tags to apply to the Connect attachment.

Type: Array of TagSpecification objects

Required: No

**TransportTransitGatewayAttachmentId**

The ID of the transit gateway attachment. You can specify a VPC attachment or AWS Direct Connect attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayConnect**

Information about the Connect attachment.

Type: TransitGatewayConnect object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# CreateTransitGatewayConnectPeer

Creates a Connect peer for a specified transit gateway Connect attachment between a transit gateway and an appliance.

The peer address and transit gateway address must be the same IP address family (IPv4 or IPv6).

For more information, see Connect peers in the *AWS Transit Gateways Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**BgpOptions**

The BGP options for the Connect peer.

Type: TransitGatewayConnectRequestBgpOptions object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InsideCidrBlocks.N**

The range of inside IP addresses that are used for BGP peering. You must specify a size /29 IPv4 CIDR block from the `169.254.0.0/16` range. The first address from the range must be configured on the appliance as the BGP IP address. You can also optionally specify a size /125 IPv6 CIDR block from the `fd00::/8` range.

Type: Array of strings

Required: Yes

**PeerAddress**

The peer IP address (GRE outer IP address) on the appliance side of the Connect peer.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the Connect peer.

Type: Array of TagSpecification objects

Required: No

**TransitGatewayAddress**

The peer IP address (GRE outer IP address) on the transit gateway side of the Connect peer, which must be specified from a transit gateway CIDR block. If not specified, Amazon automatically assigns the first available IP address from the transit gateway CIDR block.

Type: String

Required: No

**TransitGatewayAttachmentId**

The ID of the Connect attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayConnectPeer**

Information about the Connect peer.

Type: TransitGatewayConnectPeer object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGatewayMeteringPolicy

Creates a metering policy for a transit gateway to track and measure network traffic.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MiddleboxAttachmentId.N**

The IDs of the middlebox attachments to include in the metering policy.

Type: Array of strings

Required: No

**TagSpecifications.N**

The tags to assign to the metering policy.

Type: Array of TagSpecification objects

Required: No

**TransitGatewayId**

The ID of the transit gateway for which to create the metering policy.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayMeteringPolicy**

Information about the created transit gateway metering policy.

Type: TransitGatewayMeteringPolicy object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGatewayMeteringPolicyEntry

Creates an entry in a transit gateway metering policy to define traffic measurement rules.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DestinationCidrBlock**

The destination CIDR block for traffic matching.

Type: String

Required: No

**DestinationPortRange**

The destination port range for traffic matching.

Type: String

Required: No

**DestinationTransitGatewayAttachmentId**

The ID of the destination transit gateway attachment for traffic matching.

Type: String

Required: No

**DestinationTransitGatewayAttachmentType**

The type of the destination transit gateway attachment for traffic matching. Note that the `tgw-peering` resource type has been deprecated. To configure metering policies for Connect, use the transport attachment type.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MeteredAccount**

The AWS account ID to which the metered traffic should be attributed.

Type: String

Valid Values: `source-attachment-owner | destination-attachment-owner | transit-gateway-owner`

Required: Yes

**PolicyRuleNumber**

The rule number for the metering policy entry. Rules are processed in order from lowest to highest number.

Type: Integer

Required: Yes

**Protocol**

The protocol for traffic matching (1, 6, 17, etc.).

Type: String

Required: No

**SourceCidrBlock**

The source CIDR block for traffic matching.

Type: String

Required: No

**SourcePortRange**

The source port range for traffic matching.

Type: String

Required: No

**SourceTransitGatewayAttachmentId**

The ID of the source transit gateway attachment for traffic matching.

Type: String

Required: No

**SourceTransitGatewayAttachmentType**

The type of the source transit gateway attachment for traffic matching. Note that the `tgw-peering` resource type has been deprecated. To configure metering policies for Connect, use the transport attachment type.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**TransitGatewayMeteringPolicyId**

The ID of the transit gateway metering policy to add the entry to.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayMeteringPolicyEntry**

Information about the created transit gateway metering policy entry.

Type: TransitGatewayMeteringPolicyEntry object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGatewayMulticastDomain

Creates a multicast domain using the specified transit gateway.

The transit gateway must be in the available state before you create a domain. Use DescribeTransitGateways to see the state of transit gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Options**

The options for the transit gateway multicast domain.

Type: CreateTransitGatewayMulticastDomainRequestOptions object

Required: No

**TagSpecification.N**

The tags for the transit gateway multicast domain.

Type: Array of TagSpecification objects

Required: No

**TransitGatewayId**

The ID of the transit gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayMulticastDomain**

Information about the transit gateway multicast domain.

Type: TransitGatewayMulticastDomain object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates a multicast domain for the specified transit gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTransitMulticastDomain
&TransitGatewayId=tgw-0d88d2d0d5EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<CreateTransitGatewayMulticastDomainResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>763fb04b-258f-4710-8f91-b202aEXAMPLE</requestId>
    <transitGatewayMulticastDomain>
        <creationTime>2019-11-20T22:02:03.000Z</creationTime>
```

```
        <state>pending</state>
        <transitGatewayId>tgw-0d88d2d0d5EXAMPLE</transitGatewayId>
        <transitGatewayMulticastDomainId>tgw-mcast-domain-02bb79002EXAMPLE</
transitGatewayMulticastDomainId>
    </transitGatewayMulticastDomain>
</CreateTransitGatewayMulticastDomainResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGatewayPeeringAttachment

Requests a transit gateway peering attachment between the specified transit gateway (requester) and a peer transit gateway (accepter). The peer transit gateway can be in your account or a different AWS account.

After you create the peering attachment, the owner of the accepter transit gateway must accept the attachment request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Options**

Requests a transit gateway peering attachment.

Type: CreateTransitGatewayPeeringAttachmentRequestOptions object

Required: No

**PeerAccountId**

The ID of the AWS account that owns the peer transit gateway.

Type: String

Required: Yes

**PeerRegion**

The Region where the peer transit gateway is located.

Type: String

Required: Yes

**PeerTransitGatewayId**

The ID of the peer transit gateway with which to create the peering attachment.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the transit gateway peering attachment.

Type: Array of TagSpecification objects

Required: No

**TransitGatewayId**

The ID of the transit gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayPeeringAttachment**

The transit gateway peering attachment.

Type: TransitGatewayPeeringAttachment object

# Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example creates a transit gateway peering attachment for the specified transit gateways. The accepter (peer) transit gateway is in the `us-west-2` Region.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTransitGatewayPeeringAttachment
&TransitGatewayId=tgw-11223344aabbcc112
&PeerTransitGatewayId=tgw-1234567890abc1234
&PeerAccountId=123456789012
&PeerRegion=us-west-2
&AUTHPARAMS
```

### Sample Response

```
<CreateTransitGatewayPeeringAttachmentResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>701859fa-6a57-4e55-858c-e63example</requestId>
    <transitGatewayPeeringAttachment>
        <accepterTgwInfo>
            <ownerId>123456789012</ownerId>
            <region>us-west-2</region>
            <transitGatewayId>tgw-1234567890abc1234</transitGatewayId>
        </accepterTgwInfo>
        <creationTime>2019-11-11T11:36:30.000Z</creationTime>
        <requesterTgwInfo>
            <ownerId>123456789012</ownerId>
            <region>us-east-1</region>
            <transitGatewayId>tgw-11223344aabbcc112</transitGatewayId>
        </requesterTgwInfo>
        <state>initiatingRequest</state>
        <transitGatewayAttachmentId>tgw-attach-0a73702c5c7123123</
transitGatewayAttachmentId>
    </transitGatewayPeeringAttachment>
</CreateTransitGatewayPeeringAttachmentResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGatewayPolicyTable

Creates a transit gateway policy table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecifications.N**

The tags specification for the transit gateway policy table created during the request.

Type: Array of TagSpecification objects

Required: No

**TransitGatewayId**

The ID of the transit gateway used for the policy table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayPolicyTable**

Describes the created transit gateway policy table.

Type: TransitGatewayPolicyTable object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGatewayPrefixListReference

Creates a reference (route) to a prefix list in a specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Blackhole**

Indicates whether to drop traffic that matches this route.

Type: Boolean

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PrefixListId**

The ID of the prefix list that is used for destination matches.

Type: String

Required: Yes

**TransitGatewayAttachmentId**

The ID of the attachment to which traffic is routed.

Type: String

Required: No

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayPrefixListReference**

Information about the prefix list reference.

Type: TransitGatewayPrefixListReference object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a reference to a prefix list in the specified transit gateway route table.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTransitGatewayPrefixListReference
&TransitGatewayRouteTableId=tgw-rtb-0f98a0a5d09abcabc
&PrefixListId=pl-001122334455aabbc
&TransitGatewayAttachmentId=tgw-attach-01234567abcabcabc
&AUTHPARAMS
```

#### Sample Response

```
<CreateTransitGatewayPrefixListReferenceResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
```

```
    <requestId>326fdc31-cd8d-491a-824a-example</requestId>
    <transitGatewayPrefixListReference>
        <blackhole>false</blackhole>
        <prefixListId>pl-001122334455aabbc</prefixListId>
        <prefixListOwnerId>123456789012</prefixListOwnerId>
        <state>pending</state>
        <transitGatewayAttachment>
            <resourceId>vpn-12312312312312312</resourceId>
            <resourceType>vpn</resourceType>
            <transitGatewayAttachmentId>tgw-attach-01234567abcabcabc</
transitGatewayAttachmentId>
        </transitGatewayAttachment>
        <transitGatewayRouteTableId>tgw-rtb-0f98a0a5d09abcabc</
transitGatewayRouteTableId>
    </transitGatewayPrefixListReference>
</CreateTransitGatewayPrefixListReferenceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGatewayRoute

Creates a static route for the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Blackhole**

Indicates whether to drop traffic that matches this route.

Type: Boolean

Required: No

**DestinationCidrBlock**

The CIDR range used for destination matches. Routing decisions are based on the most specific match.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**route**

Information about the route.

Type: TransitGatewayRoute object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGatewayRouteTable

Creates a route table for the specified transit gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecifications.N**

The tags to apply to the transit gateway route table.

Type: Array of TagSpecification objects

Required: No

**TransitGatewayId**

The ID of the transit gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayRouteTable**

Information about the transit gateway route table.

Type: TransitGatewayRouteTable object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a transit gateway route table for the specified transit gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTransitGatewayRouteTable
&TransitGatewayId=tgw-02f776b1a7EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<CreateTransitGatewayRouteTableResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>9c6751fa-a1ee-4006-92a8-c6cc1816a0f5</requestId>
    <transitGatewayRouteTable>
        <creationTime>2019-07-17T20:27:26.000Z</creationTime>
        <defaultAssociationRouteTable>false</defaultAssociationRouteTable>
        <defaultPropagationRouteTable>false</defaultPropagationRouteTable>
        <state>pending</state>
        <transitGatewayId>tgw-02f776b1a7EXAMPLE</transitGatewayId>
        <transitGatewayRouteTableId>tgw-rtb-0b6f6aaa01EXAMPLE</
transitGatewayRouteTableId>
    </transitGatewayRouteTable>
</CreateTransitGatewayRouteTableResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGatewayRouteTableAnnouncement

Advertises a new transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PeeringAttachmentId**

The ID of the peering attachment.

Type: String

Required: Yes

**TagSpecification.N**

The tags specifications applied to the transit gateway route table announcement.

Type: Array of TagSpecification objects

Required: No

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayRouteTableAnnouncement**

Provides details about the transit gateway route table announcement.

Type: TransitGatewayRouteTableAnnouncement object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateTransitGatewayVpcAttachment

Attaches the specified VPC to the specified transit gateway.

If you attach a VPC with a CIDR range that overlaps the CIDR range of a VPC that is already attached, the new VPC CIDR range is not propagated to the default propagation route table.

To send VPC traffic to an attached transit gateway, add a route to the VPC route table using CreateRoute.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Options**

The VPC attachment options.

Type: CreateTransitGatewayVpcAttachmentRequestOptions object

Required: No

**SubnetIds.N**

The IDs of one or more subnets. You can specify only one subnet per Availability Zone. You must specify at least one subnet, but we recommend that you specify two subnets for better availability. The transit gateway uses one IP address from each specified subnet.

Type: Array of strings

Required: Yes

**TagSpecifications.N**

The tags to apply to the VPC attachment.

Type: Array of TagSpecification objects

Required: No

**TransitGatewayId**

The ID of the transit gateway.

Type: String

Required: Yes

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayVpcAttachment**

Information about the VPC attachment.

Type: TransitGatewayVpcAttachment object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example creates a transit gateway VPC attachment for the specified transit gateway.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTransitGatewayVpcAttachment
&TransitGatewayId=tgw-02f776b1a7EXAMPLE
&VpcID=vpc-0065acced4EXAMPLE
&SubnetIds.1=subnet-0187aff814EXAMPLE
&Options.DnsSupport=enable
&Options.Ipv6Support=disable
&AUTHPARAMS
```

### Sample Response

```
<CreateTransitGatewayVpcAttachmentResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>374ab4fd-5ccd-4d98-93f5-034c80f67d79</requestId>
    <transitGatewayVpcAttachment>
        <creationTime>2019-07-17T16:04:27.000Z</creationTime>
        <options>
            <dnsSupport>enable</dnsSupport>
            <ipv6Support>disable</ipv6Support>
        </options>
        <state>pending</state>
        <subnetIds>
            <item>subnet-0187aff814EXAMPLE</item>
        </subnetIds>
        <transitGatewayAttachmentId>tgw-attach-0d2c54bdb3EXAMPLE</
transitGatewayAttachmentId>
        <transitGatewayId>tgw-02f776b1a7EXAMPLE</transitGatewayId>
        <vpcId>vpc-0065acced4EXAMPLE</vpcId>
        <vpcOwnerId>111122223333</vpcOwnerId>
    </transitGatewayVpcAttachment>
</CreateTransitGatewayVpcAttachmentResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVerifiedAccessEndpoint

An AWS Verified Access endpoint is where you define your application along with an optional endpoint-level access policy.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ApplicationDomain**

The DNS name for users to reach your application.

Type: String

Required: No

**AttachmentType**

The type of attachment.

Type: String

Valid Values: `vpc`

Required: Yes

**CidrOptions**

The CIDR options. This parameter is required if the endpoint type is `cidr`.

Type: CreateVerifiedAccessEndpointCidrOptions object

Required: No

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the Verified Access endpoint.

Type: String

Required: No

**DomainCertificateArn**

The ARN of the public TLS/SSL certificate in AWS Certificate Manager to associate with the endpoint. The CN in the certificate must match the DNS name your end users will use to reach your application.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndpointDomainPrefix**

A custom identifier that is prepended to the DNS name that is generated for the endpoint.

Type: String

Required: No

**EndpointType**

The type of Verified Access endpoint to create.

Type: String

Valid Values: `load-balancer | network-interface | rds | cidr`

Required: Yes

**LoadBalancerOptions**

The load balancer details. This parameter is required if the endpoint type is `load-balancer`.

Type: CreateVerifiedAccessEndpointLoadBalancerOptions object

Required: No

**NetworkInterfaceOptions**

The network interface details. This parameter is required if the endpoint type is `network-interface`.

Type: CreateVerifiedAccessEndpointEniOptions object

Required: No

**PolicyDocument**

The Verified Access policy document.

Type: String

Required: No

**RdsOptions**

The RDS details. This parameter is required if the endpoint type is `rds`.

Type: CreateVerifiedAccessEndpointRdsOptions object

Required: No

**SecurityGroupId.N**

The IDs of the security groups to associate with the Verified Access endpoint. Required if `AttachmentType` is set to `vpc`.

Type: Array of strings

Required: No

**SseSpecification**

The options for server side encryption.

Type: VerifiedAccessSseSpecificationRequest object

Required: No

**TagSpecification.N**

The tags to assign to the Verified Access endpoint.

Type: Array of TagSpecification objects

Required: No

**VerifiedAccessGroupId**

The ID of the Verified Access group to associate the endpoint with.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessEndpoint**

Details about the Verified Access endpoint.

Type: VerifiedAccessEndpoint object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVerifiedAccessGroup

An AWS Verified Access group is a collection of AWS Verified Access endpoints who's associated applications have similar security requirements. Each instance within a Verified Access group shares an Verified Access policy. For example, you can group all Verified Access instances associated with "sales" applications together and use one common Verified Access policy.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the Verified Access group.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PolicyDocument**

The Verified Access policy document.

Type: String

Required: No

**SseSpecification**

The options for server side encryption.

Type: VerifiedAccessSseSpecificationRequest object

Required: No

**TagSpecification.N**

The tags to assign to the Verified Access group.

Type: Array of TagSpecification objects

Required: No

**VerifiedAccessInstanceId**

The ID of the Verified Access instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessGroup**

Details about the Verified Access group.

Type: VerifiedAccessGroup object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVerifiedAccessInstance

An AWS Verified Access instance is a regional entity that evaluates application requests and grants access only when your security requirements are met.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CidrEndpointsCustomSubDomain**

The custom subdomain.

Type: String

Required: No

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the Verified Access instance.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FIPSEnabled**

Enable or disable support for Federal Information Processing Standards (FIPS) on the instance.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to assign to the Verified Access instance.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessInstance**

Details about the Verified Access instance.

Type: VerifiedAccessInstance object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVerifiedAccessTrustProvider

A trust provider is a third-party entity that creates, maintains, and manages identity information for users and devices. When an application request is made, the identity information sent by the trust provider is evaluated by Verified Access before allowing or denying the application request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the Verified Access trust provider.

Type: String

Required: No

**DeviceOptions**

The options for a device-based trust provider. This parameter is required when the provider type is `device`.

Type: CreateVerifiedAccessTrustProviderDeviceOptions object

Required: No

**DeviceTrustProviderType**

The type of device-based trust provider. This parameter is required when the provider type is `device`.

Type: String

Valid Values: `jamf | crowdstrike | jumpcloud`

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NativeApplicationOidcOptions**

The OpenID Connect (OIDC) options.

Type: CreateVerifiedAccessNativeApplicationOidcOptions object

Required: No

**OidcOptions**

The options for a OpenID Connect-compatible user-identity trust provider. This parameter is required when the provider type is `user`.

Type: CreateVerifiedAccessTrustProviderOidcOptions object

Required: No

**PolicyReferenceName**

The identifier to be used when working with policy rules.

Type: String

Required: Yes

**SseSpecification**

The options for server side encryption.

Type: VerifiedAccessSseSpecificationRequest object

Required: No

**TagSpecification.N**

The tags to assign to the Verified Access trust provider.

Type: Array of TagSpecification objects

Required: No

**TrustProviderType**

The type of trust provider.

Type: String

Valid Values: `user | device`

Required: Yes

**UserTrustProviderType**

The type of user-based trust provider. This parameter is required when the provider type is `user`.

Type: String

Valid Values: `iam-identity-center | oidc`

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessTrustProvider**

Details about the Verified Access trust provider.

Type: VerifiedAccessTrustProvider object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVolume

Creates an EBS volume that can be attached to an instance in the same Availability Zone.

You can create a new empty volume or restore a volume from an EBS snapshot. Any AWS Marketplace product codes from the snapshot are propagated to the volume.

You can create encrypted volumes. Encrypted volumes must be attached to instances that support Amazon EBS encryption. Volumes that are created from encrypted snapshots are also automatically encrypted. For more information, see Amazon EBS encryption in the *Amazon EBS User Guide*.

You can tag your volumes during creation. For more information, see Tag your Amazon EC2 resources in the *Amazon EC2 User Guide*.

For more information, see Create an Amazon EBS volume in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZone**

The ID of the Availability Zone in which to create the volume. For example, `us-east-1a`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified, but not both.

Type: String

Required: No

**AvailabilityZoneId**

The ID of the Availability Zone in which to create the volume. For example, `use1-az1`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified, but not both.

Type: String

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Encrypted**

Indicates whether the volume should be encrypted. The effect of setting the encryption state to `true` depends on the volume origin (new or from a snapshot), starting encryption state, ownership, and whether encryption by default is enabled. For more information, see Encryption by default in the *Amazon EBS User Guide*.

Encrypted Amazon EBS volumes must be attached to instances that support Amazon EBS encryption. For more information, see Supported instance types.

Type: Boolean

Required: No

**Iops**

The number of I/O operations per second (IOPS) to provision for the volume. Required for `io1` and `io2` volumes. Optional for `gp3` volumes. Omit for all other volume types.

Valid ranges:

- gp3: `3,000` (*default*) - `80,000` IOPS
- io1: `100` - `64,000` IOPS
- io2: `100` - `256,000` IOPS

> **Note**
>
> Instances built on the Nitro System can support up to 256,000 IOPS. Other instances can support up to 32,000 IOPS.

Type: Integer

Required: No

**KmsKeyId**

The identifier of the AWS KMS key to use for Amazon EBS encryption. If this parameter is not specified, your AWS KMS key for Amazon EBS is used. If `KmsKeyId` is specified, the encrypted state must be `true`.

You can specify the KMS key using any of the following:

- Key ID. For example, 1234abcd-12ab-34cd-56ef-1234567890ab.
- Key alias. For example, alias/ExampleAlias.
- Key ARN. For example, arn:aws:kms:us-east-1:012345678910:key/1234abcd-12ab-34cd-56ef-1234567890ab.
- Alias ARN. For example, arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias.

AWS authenticates the KMS key asynchronously. Therefore, if you specify an ID, alias, or ARN that is not valid, the action can appear to complete, but eventually fails.

Type: String

Required: No

**MultiAttachEnabled**

Indicates whether to enable Amazon EBS Multi-Attach. If you enable Multi-Attach, you can attach the volume to up to 16 Instances built on the Nitro System in the same Availability Zone. This parameter is supported with `io1` and `io2` volumes only. For more information, see Amazon EBS Multi-Attach in the *Amazon EBS User Guide*.

Type: Boolean

Required: No

**Operator**

Reserved for internal use.

Type: OperatorRequest object

Required: No

**OutpostArn**

The Amazon Resource Name (ARN) of the Outpost on which to create the volume.

If you intend to use a volume with an instance running on an outpost, then you must create the volume on the same outpost as the instance. You can't use a volume created in an AWS Region with an instance on an AWS outpost, or the other way around.

Type: String

Required: No

**Size**

The size of the volume, in GiBs. You must specify either a snapshot ID or a volume size. If you specify a snapshot, the default is the snapshot size, and you can specify a volume size that is equal to or larger than the snapshot size.

Valid sizes:

- gp2: `1 - 16,384` GiB
- gp3: `1 - 65,536` GiB
- io1: `4 - 16,384` GiB
- io2: `4 - 65,536` GiB
- st1 and sc1: `125 - 16,384` GiB
- standard: `1 - 1024` GiB

Type: Integer

Required: No

**SnapshotId**

The snapshot from which to create the volume. You must specify either a snapshot ID or a volume size.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the volume during creation.

Type: Array of TagSpecification objects

Required: No

**Throughput**

The throughput to provision for the volume, in MiB/s. Supported for gp3 volumes only. Omit for all other volume types.

Valid Range: `125 - 2000` MiB/s

Type: Integer

Required: No

**VolumeInitializationRate**

Specifies the Amazon EBS Provisioned Rate for Volume Initialization (volume initialization rate), in MiB/s, at which to download the snapshot blocks from Amazon S3 to the volume. This is also known as *volume initialization*. Specifying a volume initialization rate ensures that the volume is initialized at a predictable and consistent rate after creation.

This parameter is supported only for volumes created from snapshots. Omit this parameter if:

- You want to create the volume using fast snapshot restore. You must specify a snapshot that is enabled for fast snapshot restore. In this case, the volume is fully initialized at creation.

  > **Note**
  >
  > If you specify a snapshot that is enabled for fast snapshot restore and a volume initialization rate, the volume will be initialized at the specified rate instead of fast snapshot restore.

- You want to create a volume that is initialized at the default rate.

For more information, see Initialize Amazon EBS volumes in the *Amazon EC2 User Guide*.

Valid range: 100 - 300 MiB/s

Type: Integer

Required: No

**VolumeType**

The volume type. This parameter can be one of the following values:

- General Purpose SSD: gp2 | gp3
- Provisioned IOPS SSD: io1 | io2
- Throughput Optimized HDD: st1
- Cold HDD: sc1
- Magnetic: standard

> **Important**
>
> Throughput Optimized HDD (st1) and Cold HDD (sc1) volumes can't be used as boot volumes.

For more information, see Amazon EBS volume types in the *Amazon EBS User Guide*.

Default: gp2

Type: String

Valid Values: standard | io1 | io2 | gp2 | sc1 | st1 | gp3

Required: No

## Response Elements

The following elements are returned by the service.

**attachmentSet**

> **Note**
>
> This parameter is not returned by CreateVolume.

Information about the volume attachments.

Type: Array of VolumeAttachment objects

**availabilityZone**

The Availability Zone for the volume.

Type: String

**availabilityZoneId**

The ID of the Availability Zone for the volume.

Type: String

**createTime**

The time stamp when volume creation was initiated.

Type: Timestamp

**encrypted**

Indicates whether the volume is encrypted.

Type: Boolean

**fastRestored**

> **Note**
>
> This parameter is not returned by CreateVolume.

Indicates whether the volume was created using fast snapshot restore.

Type: Boolean

**iops**

The number of I/O operations per second (IOPS). For `gp3`, `io1`, and `io2` volumes, this represents the number of IOPS that are provisioned for the volume. For `gp2` volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting.

Type: Integer

**kmsKeyId**

The Amazon Resource Name (ARN) of the AWS KMS key that was used to protect the volume encryption key for the volume.

Type: String

**multiAttachEnabled**

Indicates whether Amazon EBS Multi-Attach is enabled.

Type: Boolean

**operator**

The service provider that manages the volume.

Type: OperatorResponse object

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

**requestId**

The ID of the request.

Type: String

**size**

The size of the volume, in GiBs.

Type: Integer

**snapshotId**

The snapshot from which the volume was created, if applicable.

Type: String

**sourceVolumeId**

The ID of the source volume from which the volume copy was created. Only for volume copies.

Type: String

**sseType**

> **Note**
>
> This parameter is not returned by CreateVolume.

Reserved for future use.

Type: String

Valid Values: `sse-ebs | sse-kms | none`

**status**

The volume state.

Type: String

Valid Values: `creating | available | in-use | deleting | deleted | error`

**tagSet**

Any tags assigned to the volume.

Type: Array of Tag objects

**throughput**

The throughput that the volume supports, in MiB/s.

Type: Integer

**volumeId**

The ID of the volume.

Type: String

**volumeInitializationRate**

The Amazon EBS Provisioned Rate for Volume Initialization (volume initialization rate) specified for the volume during creation, in MiB/s. If no volume initialization rate was specified, the value is `null`.

Type: Integer

**volumeType**

The volume type.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example request creates an 150 GiB Multi-Attach enabled `io1` volume in the `us-east-1a` Availability Zone.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=CreateVolume
&VolumeType=io1
&Size=150
&Iops=7500
&AvailabilityZone=us-east-1a
&MultiAttachEnabled=true
&AUTHPARAMS
```

**Sample Response**

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1234567890abcdef0</volumeId>
  <size>150</size>
  <iops>7500</iops>
  <snapshotId/>
  <availabilityZone>us-east-1a</availabilityZone>
  <status>creating</status>
  <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
  <volumeType>io1;</volumeType>
  <encrypted>true</encrypted>
```

```
  <multiAttachEnabled>true</multiAttachEnabled>
</CreateVolumeResponse>
```

## Example 2

This example request creates an 80 GiB encrypted volume in the Availability Zone `us-east-1a`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVolume
&Size=80
&AvailabilityZone=us-east-1a
&Encrypted=true
&AUTHPARAMS
```

### Sample Response

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>248f69ab-c7a9-4ad2-8e7c-b7556EXAMPLE</requestId>
    <volumeId>vol-08bf1d00afabcdef0</volumeId>
    <size>80</size>
    <snapshotId></snapshotId>
    <availabilityZone>us-east-1a</availabilityZone>
    <status>creating</status>
    <createTime>2020-11-30T10:39:56.000Z</createTime>
    <volumeType>gp2</volumeType>
    <iops>189</iops>
    <encrypted>true</encrypted>
    <kmsKeyId>arn:aws:kms:us-east-1:123456789012:key/237eb1a7-2fa1-44dc-
b95e-6c526EXAMPLE</kmsKeyId>
    <tagSet/>
    <multiAttachEnabled>false</multiAttachEnabled>
</CreateVolumeResponse>
```

## Example 3

This example request creates a volume and applies a tag with a key of `stack` and a value of `production`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVolume
```

```
&Size=80
&AvailabilityZone=us-east-1a
&TagSpecification.1.ResourceType=volume
&TagSpecification.1.Tag.1.Key=stack
&TagSpecification.1.Tag.1.Value=production
&AUTHPARAMS
```

### Sample Response

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>bb216d10-54b9-4bc2-958d-fcfe2EXAMPLE</requestId>
    <volumeId>vol-043c91f2fa4abcdef</volumeId>
    <size>80</size>
    <snapshotId></snapshotId>
    <availabilityZone>us-east-1a</availabilityZone>
    <status>creating</status>
    <createTime>2020-11-30T10:47:43.000Z</createTime>
    <volumeType>gp2</volumeType>
    <iops>189</iops>
    <encrypted>true</encrypted>
    <kmsKeyId>arn:aws:kms:us-east-1:123456789012:key/237eb1a7-2fa1-44dc-
b95e-6c526EXAMPLE</kmsKeyId>
    <tagSet>
        <item>
            <key>stack</key>
            <value>production</value>
        </item>
    </tagSet>
    <multiAttachEnabled>false</multiAttachEnabled>
</CreateVolumeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVpc

Creates a VPC with the specified CIDR blocks.

A VPC must have an associated IPv4 CIDR block. You can choose an IPv4 CIDR block or an IPAM-allocated IPv4 CIDR block. You can optionally associate an IPv6 CIDR block with a VPC. You can choose an IPv6 CIDR block, an Amazon-provided IPv6 CIDR block, an IPAM-allocated IPv6 CIDR block, or an IPv6 CIDR block that you brought to AWS. For more information, see IP addressing for your VPCs and subnets in the *Amazon VPC User Guide*.

By default, each instance that you launch in the VPC has the default DHCP options, which include only a default DNS server that we provide (AmazonProvidedDNS). For more information, see DHCP option sets in the *Amazon VPC User Guide*.

You can specify DNS options and tenancy for a VPC when you create it. You can't change the tenancy of a VPC after you create it. For more information, see VPC configuration options in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AmazonProvidedIpv6CidrBlock**

Requests an Amazon-provided IPv6 CIDR block with a /56 prefix length for the VPC. You cannot specify the range of IP addresses, or the size of the CIDR block.

Type: Boolean

Required: No

**CidrBlock**

The IPv4 network range for the VPC, in CIDR notation. For example, `10.0.0.0/16`. We modify the specified CIDR block to its canonical form; for example, if you specify `100.68.0.18/18`, we modify it to `100.68.0.0/18`.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceTenancy**

The tenancy options for instances launched into the VPC. For `default`, instances are launched with shared tenancy by default. You can launch instances with any tenancy into a shared tenancy VPC. For `dedicated`, instances are launched as dedicated tenancy instances by default. You can only launch instances with a tenancy of `dedicated` or `host` into a dedicated tenancy VPC.

**Important:** The `host` value cannot be used with this parameter. Use the `default` or `dedicated` values only.

Default: `default`

Type: String

Valid Values: `default | dedicated | host`

Required: No

**Ipv4IpamPoolId**

The ID of an IPv4 IPAM pool you want to use for allocating this VPC's CIDR. For more information, see What is IPAM? in the *Amazon VPC IPAM User Guide*.

Type: String

Required: No

**Ipv4NetmaskLength**

The netmask length of the IPv4 CIDR you want to allocate to this VPC from an Amazon VPC IP Address Manager (IPAM) pool. For more information about IPAM, see What is IPAM? in the *Amazon VPC IPAM User Guide*.

Type: Integer

Required: No

**Ipv6CidrBlock**

The IPv6 CIDR block from the IPv6 address pool. You must also specify `Ipv6Pool` in the request.

To let Amazon choose the IPv6 CIDR block for you, omit this parameter.

Type: String

Required: No

**Ipv6CidrBlockNetworkBorderGroup**

The name of the location from which we advertise the IPV6 CIDR block. Use this parameter to limit the address to this location.

You must set `AmazonProvidedIpv6CidrBlock` to `true` to use this parameter.

Type: String

Required: No

**Ipv6IpamPoolId**

The ID of an IPv6 IPAM pool which will be used to allocate this VPC an IPv6 CIDR. IPAM is a VPC feature that you can use to automate your IP address management workflows including assigning, tracking, troubleshooting, and auditing IP addresses across AWS Regions and accounts throughout your AWS Organization. For more information, see What is IPAM? in the *Amazon VPC IPAM User Guide*.

Type: String

Required: No

**Ipv6NetmaskLength**

The netmask length of the IPv6 CIDR you want to allocate to this VPC from an Amazon VPC IP Address Manager (IPAM) pool. For more information about IPAM, see What is IPAM? in the *Amazon VPC IPAM User Guide*.

Type: Integer

Required: No

**Ipv6Pool**

The ID of an IPv6 address pool from which to allocate the IPv6 CIDR block.

Type: String

Required: No

**TagSpecification.N**

The tags to assign to the VPC.

Type: Array of TagSpecification objects

Required: No

**VpcEncryptionControl**

Specifies the encryption control configuration to apply to the VPC during creation. VPC Encryption Control enables you to enforce encryption for all data in transit within and between VPCs to meet compliance requirements.

For more information, see Enforce VPC encryption in transit in the *Amazon VPC User Guide*.

Type: VpcEncryptionControlConfiguration object

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpc**

Information about the VPC.

Type: Vpc object

# Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example creates a VPC with the IPv4 CIDR block `10.0.0.0/16` and a tag with the key set to `tag` and the value set to `example`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.0.0.0/16
&TagSpecification.1.ResourceType=vpc
&TagSpecification.1.Key=vpc
&TagSpecification.1.Value=example
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>63c5a2ed-4195-4445-b841-294629e7d8bd</requestId>
    <vpc>
        <vpcId>vpc-06b7830650EXAMPLE</vpcId>
        <ownerId>111122223333</ownerId>
        <state>pending</state>
        <cidrBlock>10.0.0.0/16</cidrBlock>
        <cidrBlockAssociationSet>
            <item>
                <cidrBlock>10.0.0.0/16</cidrBlock>
                <associationId>vpc-cidr-assoc-017043e963EXAMPLE</associationId>
                <cidrBlockState>
                    <state>associated</state>
                </cidrBlockState>
            </item>
        </cidrBlockAssociationSet>
        <ipv6CidrBlockAssociationSet/>
        <dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
        <tagSet/>
        <instanceTenancy>default</instanceTenancy>
```

```
        <isDefault>false</isDefault>
        <tagSet>
            <item>
                <key>example</key>
                <value>tag</value>
            </item>
        </tagSet>
    </vpc>
</CreateVpcResponse>
```

## Example 2

This example creates a VPC with the `dedicated` tenancy option.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.32.0.0/16
&InstanceTenancy=dedicated
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>1d536f17-5a03-4030-95b4-4d051e65e7bb</requestId>
    <vpc>
        <vpcId>vpc-07ddea827dEXAMPLE</vpcId>
        <ownerId>111122223333</ownerId>
        <state>pending</state>
        <cidrBlock>10.32.0.0/16</cidrBlock>
        <cidrBlockAssociationSet>
            <item>
                <cidrBlock>10.32.0.0/16</cidrBlock>
                <associationId>vpc-cidr-assoc-0cc7b90dfeEXAMPLE</associationId>
                <cidrBlockState>
                    <state>associated</state>
                </cidrBlockState>
            </item>
        </cidrBlockAssociationSet>
        <ipv6CidrBlockAssociationSet/>
        <dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
        <tagSet/>
        <instanceTenancy>dedicated</instanceTenancy>
```

```
        <isDefault>false</isDefault>
    </vpc>
</CreateVpcResponse>
```

## Example 3

This example creates a VPC and requests an IPv6 CIDR block for the VPC.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.0.0.0/16
&AmazonProvidedIpv6CidrBlock=true
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>b1a2b2b5-5806-4e24-824b-0c8996c608c1</requestId>
    <vpc>
        <vpcId>vpc-03914afb3ed6c7632</vpcId>
        <ownerId>111122223333</ownerId>
        <state>pending</state>
        <cidrBlock>10.0.0.0/16</cidrBlock>
        <cidrBlockAssociationSet>
            <item>
                <cidrBlock>10.0.0.0/16</cidrBlock>
                <associationId>vpc-cidr-assoc-03ca48bbbeEXAMPLE</associationId>
                <cidrBlockState>
                    <state>associated</state>
                </cidrBlockState>
            </item>
        </cidrBlockAssociationSet>
        <ipv6CidrBlockAssociationSet>
            <item>
                <ipv6CidrBlock></ipv6CidrBlock>
                <associationId>vpc-cidr-assoc-0bd6cc7621EXAMPLE</associationId>
                <ipv6CidrBlockState>
                    <state>associating</state>
                </ipv6CidrBlockState>
            </item>
        </ipv6CidrBlockAssociationSet>
        <dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
```

```
        <tagSet/>
        <instanceTenancy>default</instanceTenancy>
        <isDefault>false</isDefault>
    </vpc>
</CreateVpcResponse>
```

## Example 4

This example creates a VPC and requests an IPv6 CIDR block for the VPC for the specified Network Border Group.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.0.0.0/16
&AmazonProvidedIpv6CidrBlock=true
&Ipv6CidrBlockNetworkBorderGroup=us-west-2-lax-1
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>b1a2b2b5-5806-4e24-824b-0c8996c608c1</requestId>
    <vpc>
        <vpcId>vpc-03914afb3ed6c7632</vpcId>
        <ownerId>111122223333</ownerId>
        <state>pending</state>
        <cidrBlock>10.0.0.0/16</cidrBlock>
        <cidrBlockAssociationSet>
            <item>
                <cidrBlock>10.0.0.0/16</cidrBlock>
                <associationId>vpc-cidr-assoc-03ca48bbbeEXAMPLE</associationId>
                <cidrBlockState>
                    <state>associated</state>
                </cidrBlockState>
            </item>
        </cidrBlockAssociationSet>
        <ipv6CidrBlockAssociationSet>
            <item>
                <ipv6CidrBlock></ipv6CidrBlock>
                <associationId>vpc-cidr-assoc-0bd6cc7621EXAMPLE</associationId>
                <ipv6CidrBlockState>
```

```
                    <state>associating</state>
                </ipv6CidrBlockState>
                <Ipv6CidrBlockNetworkBorderGroup>us-west-2-lax-1</
Ipv6CidrBlockNetworkBorderGroup>
            </item>
        </ipv6CidrBlockAssociationSet>
        <dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
        <tagSet/>
        <instanceTenancy>default</instanceTenancy>
        <isDefault>false</isDefault>
        <availabilityZone>us-west-2-lax-1a</availabilityZone>
    </vpc>
</CreateVpcResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVpcBlockPublicAccessExclusion

Create a VPC Block Public Access (BPA) exclusion. A VPC BPA exclusion is a mode that can be applied to a single VPC or subnet that exempts it from the account's BPA mode and will allow bidirectional or egress-only access. You can create BPA exclusions for VPCs and subnets even when BPA is not enabled on the account to ensure that there is no traffic disruption to the exclusions when VPC BPA is turned on. To learn more about VPC BPA, see Block public access to VPCs and subnets in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InternetGatewayExclusionMode**

The exclusion mode for internet gateway traffic.

- `allow-bidirectional`: Allow all internet traffic to and from the excluded VPCs and subnets.
- `allow-egress`: Allow outbound internet traffic from the excluded VPCs and subnets. Block inbound internet traffic to the excluded VPCs and subnets. Only applies when VPC Block Public Access is set to Bidirectional.

Type: String

Valid Values: `allow-bidirectional | allow-egress`

Required: Yes

**SubnetId**

A subnet ID.

Type: String

Required: No

**TagSpecification.N**

`tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of TagSpecification objects

Required: No

**VpcId**

A VPC ID.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpcBlockPublicAccessExclusion**

Details about an exclusion.

Type: VpcBlockPublicAccessExclusion object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVpcEncryptionControl

Creates a VPC Encryption Control configuration for a specified VPC. VPC Encryption Control enables you to enforce encryption for all data in transit within and between VPCs to meet compliance requirements for standards like HIPAA, FedRAMP, and PCI DSS.

For more information, see Enforce VPC encryption in transit in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to apply to the VPC Encryption Control resource.

Type: Array of TagSpecification objects

Required: No

**VpcId**

The ID of the VPC for which to create the encryption control configuration.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpcEncryptionControl**

Information about the VPC Encryption Control configuration.

Type: VpcEncryptionControl object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVpcEndpoint

Creates a VPC endpoint. A VPC endpoint provides a private connection between the specified VPC and the specified endpoint service. You can use an endpoint service provided by AWS, an AWS Marketplace Partner, or another AWS account. For more information, see the AWS PrivateLink User Guide.

Use DescribeVpcEndpointServices to list the supported services.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: No

**DnsOptions**

The DNS options for the endpoint.

Type: DnsOptionsSpecification object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpAddressType**

The IP address type for the endpoint.

Type: String

Valid Values: `ipv4 | dualstack | ipv6`

Required: No

**PolicyDocument**

(Interface and gateway endpoints) A policy to attach to the endpoint that controls access to the service. The policy must be in valid JSON format. If this parameter is not specified, we attach a default policy that allows full access to the service.

Type: String

Required: No

**PrivateDnsEnabled**

(Interface endpoint) Indicates whether to associate a private hosted zone with the specified VPC. The private hosted zone contains a record set for the default public DNS name for the service for the Region (for example, `kinesis.us-east-1.amazonaws.com`), which resolves to the private IP addresses of the endpoint network interfaces in the VPC. This enables you to make requests to the default public DNS name for the service instead of the public DNS names that are automatically generated by the VPC endpoint service.

To use a private hosted zone, you must set the following VPC attributes to `true`: `enableDnsHostnames` and `enableDnsSupport`. Use ModifyVpcAttribute to set the VPC attributes.

Type: Boolean

Required: No

**ResourceConfigurationArn**

The Amazon Resource Name (ARN) of a resource configuration that will be associated with the VPC endpoint of type resource.

Type: String

Required: No

**RouteTableId.N**

(Gateway endpoint) The route table IDs.

Type: Array of strings

Required: No

**SecurityGroupId.N**

(Interface endpoint) The IDs of the security groups to associate with the endpoint network interfaces. If this parameter is not specified, we use the default security group for the VPC.

Type: Array of strings

Required: No

**ServiceName**

The name of the endpoint service.

Type: String

Required: No

**ServiceNetworkArn**

The Amazon Resource Name (ARN) of a service network that will be associated with the VPC endpoint of type service-network.

Type: String

Required: No

**ServiceRegion**

The Region where the service is hosted. The default is the current Region.

Type: String

Required: No

**SubnetConfiguration.N**

The subnet configurations for the endpoint.

Type: Array of SubnetConfiguration objects

Required: No

**SubnetId.N**

(Interface and Gateway Load Balancer endpoints) The IDs of the subnets in which to create endpoint network interfaces. For a Gateway Load Balancer endpoint, you can specify only one subnet.

Type: Array of strings

Required: No

**TagSpecification.N**

The tags to associate with the endpoint.

Type: Array of TagSpecification objects

Required: No

**VpcEndpointType**

The type of endpoint.

Default: Gateway

Type: String

Valid Values: `Interface | Gateway | GatewayLoadBalancer | Resource | ServiceNetwork`

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

**requestId**

The ID of the request.

Type: String

**vpcEndpoint**

Information about the endpoint.

Type: VpcEndpoint object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates a gateway endpoint between `vpc-1a2b3c4d` and Amazon S3 in us-east-1, and associates route table `rtb-11aa22bb` with the endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpoint
&VpcId=vpc-1a2b3c4d
&ServiceName=com.amazonaws.us-east-1.s3
&RouteTableId.1=rtb-11aa22bb
&AUTHPARAMS
```

#### Sample Response

```
<CreateVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <vpcEndpoint>
        <vpcId>vpc-1a2b3c4d</vpcId>
        <state>available</state>
        <routeTableIdSet>
            <item>rtb-11aa22bb</item>
        </routeTableIdSet>
       <vpcEndpointId>vpce-abc12345</vpcEndpointId>
        <creationTimestamp>2015-02-20T16:46:40Z</creationTimestamp>
```

```
        <policyDocument>{"Version":"2008-10-17",       "Statement":
[{"Sid":"","Effect":"Allow","Principal":"*","Action":"*","Resource":"*"}]}</
policyDocument>
        <serviceName>com.amazonaws.us-west-1.s3</serviceName>
    </vpcEndpoint>
    <requestId>4b373100-473a-46a0-9006-example</requestId>
</CreateVpcEndpointResponse>
```

## Example 2

This example creates an interface endpoint between `vpc-1a2b3c4d` and Elastic Load Balancing in us-east-1 in subnet `subnet-1a2b3c4d`, and associates security group `sg-11aa22bb` with the network interface.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpoint
&VpcId=vpc-1a2b3c4d
&ServiceName=com.amazonaws.us-east-1.elasticloadbalancing
&VpcEndpointType=Interface
&SubnetId.1=subnet-1a2b3c4d
&SecurityGroupId.1=sg-11aa22bb
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>bf5a49f9-4c36-41c9-a4be-13dexample</requestId>
    <vpcEndpoint>
        <policyDocument>{
  "Statement": [
    {
      "Action": "*",
      "Effect": "Allow",
      "Principal": "*",
      "Resource": "*"
    }
  ]
}</policyDocument>
        <routeTableIdSet/>
        <dnsEntrySet>
            <item>
                <hostedZoneId>Z7HUB22UULQXV</hostedZoneId>
```

```
                <dnsName>vpce-0324151a02f327ff5-3k8nfxtt.elasticloadbalancing.us-
east-1.vpce.amazonaws.com</dnsName>
            </item>
            <item>
                <hostedZoneId>Z7HUB22UULQXV</hostedZoneId>
                <dnsName>vpce-0324151a02f327ff5-3k8nfxtt-us-
east-1a.elasticloadbalancing.us-east-1.vpce.amazonaws.com</dnsName>
            </item>
            <item>
                <hostedZoneId>Z2THV5YBYUN78V</hostedZoneId>
                <dnsName>elasticloadbalancing.us-east-1.amazonaws.com</dnsName>
            </item>
        </dnsEntrySet>
        <serviceName>com.amazonaws.us-east-1.elasticloadbalancing</serviceName>
        <privateDnsEnabled>true</privateDnsEnabled>
        <groupSet>
            <item>
                <groupName>default</groupName>
                <groupId>sg-11aa22bb</groupId>
            </item>
        </groupSet>
        <vpcEndpointId>vpce-0324151a02f327ff5</vpcEndpointId>
        <subnetIdSet>
            <item>subnet-1a2b3c4d</item>
        </subnetIdSet>
        <networkInterfaceIdSet>
            <item>eni-cd1a3319</item>
        </networkInterfaceIdSet>
        <vpcEndpointType>Interface</vpcEndpointType>
        <vpcId>vpc-1a2b3c4d</vpcId>
        <creationTimestamp>2017-09-05T20:57:46.307Z</creationTimestamp>
        <state>pending</state>
    </vpcEndpoint>
</CreateVpcEndpointResponse>
```

## Example 3

This example creates a Gateway Load Balancer endpoint between `vpc-11122223333344445` and a VPC endpoint service that's configured using a Gateway Load Balancer.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpoint
```

```
&VpcId=vpc-11122223333344445
&ServiceName=com.amazonaws.vpce.us-east-1.vpce-svc-123abcc1298abc123
&VpcEndpointType=GatewayLoadBalancer
&SubnetId.1=subnet-aaaa1111bbbb22233
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>bf5a49f9-4c36-41c9-a4be-13dexample</requestId>
    <vpcEndpoint>
        <ownerId>123456789012</ownerId>
        <requesterManaged>false</requesterManaged>
        <serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-123abcc1298abc123</
serviceName>
        <vpcEndpointId>vpce-bbbbbb2222222333</vpcEndpointId>
        <subnetIdSet>
            <item>subnet-aaaa1111bbbb22233</item>
        </subnetIdSet>
        <networkInterfaceIdSet>
            <item>eni-11111111222222aaa</item>
        </networkInterfaceIdSet>
        <vpcEndpointType>GatewayLoadBalancer</vpcEndpointType>
        <vpcId>vpc-11122223333344445</vpcId>
        <creationTimestamp>2020-11-11T08:06:03.522Z</creationTimestamp>
        <state>pending</state>
    </vpcEndpoint>
</CreateVpcEndpointResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVpcEndpointConnectionNotification

Creates a connection notification for a specified VPC endpoint or VPC endpoint service. A connection notification notifies you of specific endpoint events. You must create an SNS topic to receive notifications. For more information, see Creating an Amazon SNS topic in the *Amazon SNS Developer Guide*.

You can create a connection notification for interface endpoints only.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: No

**ConnectionEvents.N**

The endpoint events for which to receive notifications. Valid values are `Accept`, `Connect`, `Delete`, and `Reject`.

Type: Array of strings

Required: Yes

**ConnectionNotificationArn**

The ARN of the SNS topic for the notifications.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ServiceId**

The ID of the endpoint service.

Type: String

Required: No

**VpcEndpointId**

The ID of the endpoint.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

**connectionNotification**

Information about the notification.

Type: ConnectionNotification object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example creates a notification for the endpoint `vpce-1234151a02f327123`. The notification is sent when the endpoint is rejected or deleted.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpointConnectionNotification
&VpcEndpointId=vpce-1234151a02f327123
&ConnectionNotificationArn=arn:aws:sns:us-east-1:123456789012:endpointtopic
&ConnectionEvents.1=Reject
&ConnectionEvents.2=Delete
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcEndpointConnectionNotificationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>6bf51e2a-a99e-4839-af31-a0d72example</requestId>
    <connectionNotification>
        <connectionNotificationArn>arn:aws:sns:us-east-1:123456789012:endpointtopic</
connectionNotificationArn>
        <connectionEvents>
            <item>Delete</item>
            <item>Reject</item>
        </connectionEvents>
        <connectionNotificationType>Topic</connectionNotificationType>
        <connectionNotificationState>Enabled</connectionNotificationState>
        <connectionNotificationId>vpce-nfn-04bcb952bc8af759b</connectionNotificationId>
        <vpcEndpointId>vpce-1234151a02f327123</vpcEndpointId>
    </connectionNotification>
</CreateVpcEndpointConnectionNotificationResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVpcEndpointServiceConfiguration

Creates a VPC endpoint service to which service consumers (AWS accounts, users, and IAM roles) can connect.

Before you create an endpoint service, you must create one of the following for your service:

- A Network Load Balancer. Service consumers connect to your service using an interface endpoint.
- A Gateway Load Balancer. Service consumers connect to your service using a Gateway Load Balancer endpoint.

If you set the private DNS name, you must prove that you own the private DNS domain name.

For more information, see the AWS PrivateLink Guide.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AcceptanceRequired**

Indicates whether requests from service consumers to create an endpoint to your service must be accepted manually.

To accept a request manually, use AcceptVpcEndpointConnections. To reject a request, use RejectVpcEndpointConnections.

Type: Boolean

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GatewayLoadBalancerArn.N**

The Amazon Resource Names (ARNs) of the Gateway Load Balancers.

Type: Array of strings

Required: No

**NetworkLoadBalancerArn.N**

The Amazon Resource Names (ARNs) of the Network Load Balancers.

Type: Array of strings

Required: No

**PrivateDnsName**

(Interface endpoint configuration) The private DNS name to assign to the VPC endpoint service.

Type: String

Required: No

**SupportedIpAddressType.N**

The supported IP address types. The possible values are `ipv4` and `ipv6`.

Type: Array of strings

Required: No

**SupportedRegion.N**

The Regions from which service consumers can access the service.

Type: Array of strings

Required: No

**TagSpecification.N**

The tags to associate with the service.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

**requestId**

The ID of the request.

Type: String

**serviceConfiguration**

Information about the service configuration.

Type: ServiceConfiguration object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates a VPC endpoint service configuration using the specified Network Load Balancer. This example also specifies that requests to connect to the service through a VPC endpoint must be accepted or rejected manually.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpointServiceConfiguration
&NetworkLoadBalancerArn.1=arn:aws:elasticloadbalancing:us-
east-1:123456789012:loadbalancer/net/my-nlb/e94221227f1ba532
&AcceptanceRequired=true
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcEndpointServiceConfigurationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>1b2f25d4-9d9f-4256-a8e3-297f7example</requestId>
    <serviceConfiguration>
        <serviceState>Available</serviceState>
        <serviceType>
            <item>
                <serviceType>Interface</serviceType>
            </item>
        </serviceType>
        <baseEndpointDnsNameSet>
            <item>vpce-svc-0552b9c1298c4f123.us-east-1.vpce.amazonaws.com</item>
        </baseEndpointDnsNameSet>
        <acceptanceRequired>true</acceptanceRequired>
        <availabilityZoneSet>
            <item>us-east-1d</item>
        </availabilityZoneSet>
        <serviceId>vpce-svc-0552b9c1298c4f123</serviceId>
        <serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-0552b9c1298c4f123</
serviceName>
        <networkLoadBalancerArnSet>
            <item>arn:aws:elasticloadbalancing:us-east-1:123456789012:loadbalancer/net/
my-nlb/e94221227f1ba532</item>
        </networkLoadBalancerArnSet>
    </serviceConfiguration>
</CreateVpcEndpointServiceConfigurationResponse>
```

## Example 2

This example creates a VPC endpoint service configuration using the specified Gateway Load Balancer. This example also specifies that all requests to connect to the service are accepted automatically.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpointServiceConfiguration
&GatewayLoadBalancerArn.1=arn:aws:elasticloadbalancing:us-
east-1:123456789012:loadbalancer/gwy/GWLBService/abc210844e429abc
&AcceptanceRequired=false
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcEndpointServiceConfigurationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>1b2f25d4-9d9f-4256-a8e3-297f7example</requestId>
    <serviceConfiguration>
        <serviceState>Available</serviceState>
        <serviceType>
            <item>
                <serviceType>GatewayLoadBalancer</serviceType>
            </item>
        </serviceType>
        <acceptanceRequired>false</acceptanceRequired>
        <availabilityZoneSet>
            <item>us-east-1d</item>
        </availabilityZoneSet>
        <serviceId>vpce-svc-123abcc1298abc123</serviceId>
        <serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-123abcc1298abc123</
serviceName>
        <gatewayLoadBalancerArnSet>
            <item>arn:aws:elasticloadbalancing:us-east-1:123456789012:loadbalancer/gwy/
GWLBService/abc210844e429abc</item>
        </gatewayLoadBalancerArnSet>
    </serviceConfiguration>
</CreateVpcEndpointServiceConfigurationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVpcPeeringConnection

Requests a VPC peering connection between two VPCs: a requester VPC that you own and an accepter VPC with which to create the connection. The accepter VPC can belong to another AWS account and can be in a different Region to the requester VPC. The requester VPC and accepter VPC cannot have overlapping CIDR blocks.

> **Note**
>
> Limitations and rules apply to a VPC peering connection. For more information, see the VPC peering limitations in the *VPC Peering Guide*.

The owner of the accepter VPC must accept the peering request to activate the peering connection. The VPC peering connection request expires after 7 days, after which it cannot be accepted or rejected.

If you create a VPC peering connection request between VPCs with overlapping CIDR blocks, the VPC peering connection has a status of `failed`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PeerOwnerId**

The AWS account ID of the owner of the accepter VPC.

Default: Your AWS account ID

Type: String

Required: No

**PeerRegion**

The Region code for the accepter VPC, if the accepter VPC is located in a Region other than the Region in which you make the request.

Default: The Region in which you make the request.

Type: String

Required: No

**PeerVpcId**

The ID of the VPC with which you are creating the VPC peering connection. You must specify this parameter in the request.

Type: String

Required: No

**TagSpecification.N**

The tags to assign to the peering connection.

Type: Array of TagSpecification objects

Required: No

**VpcId**

The ID of the requester VPC. You must specify this parameter in the request.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpcPeeringConnection**

Information about the VPC peering connection.

Type: VpcPeeringConnection object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example requests a peering connection between your VPC (vpc-1a2b3c4d), and a VPC (vpc-a1b2c3d4) that belongs to AWS account 123456789012.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection
&VpcId=vpc-1a2b3c4d
&PeerVpcId=vpc-a1b2c3d4
&PeerOwnerId=123456789012
&AUTHPARAMS
```

#### Sample Response

```
<CreateVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
 <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
 <vpcPeeringConnection>
  <vpcPeeringConnectionId>pcx-73a5401a</vpcPeeringConnectionId>
    <requesterVpcInfo>
     <ownerId>777788889999</ownerId>
     <vpcId>vpc-1a2b3c4d</vpcId>
     <cidrBlock>10.0.0.0/28</cidrBlock>
     <peeringOptions>
```

```
       <allowEgressFromLocalClassicLinkToRemoteVpc>false</
allowEgressFromLocalClassicLinkToRemoteVpc>
       <allowEgressFromLocalVpcToRemoteClassicLink>false</
allowEgressFromLocalVpcToRemoteClassicLink>
       <allowDnsResolutionFromRemoteVpc>false</allowDnsResolutionFromRemoteVpc>
     </peeringOptions>
    </requesterVpcInfo>
    <accepterVpcInfo>
      <ownerId>123456789012</ownerId>
      <vpcId>vpc-a1b2c3d4</vpcId>
    </accepterVpcInfo>
    <status>
     <code>initiating-request</code>
     <message>Initiating Request to 123456789012</message>
    </status>
    <expirationTime>2014-02-18T14:37:25.000Z</expirationTime>
    <tagSet/>
 </vpcPeeringConnection>
</CreateVpcPeeringConnectionResponse>
```

## Example 2

This example requests a peering connection between your VPCs `vpc-1a2b3c4d` and `vpc-11122233`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection
&VpcId=vpc-1a2b3c4d
&PeerVpcId=vpc-11122233
&AUTHPARAMS
```

## Example 3

This example requests an inter-region peering connection between two VPCs in your account. VPC `vpc-1a2b3c4d` is located in the US East (N. Virginia) Region (`us-east-1`), and accepter VPC `vpc-a1b2c3d4` is located in the US West (Oregon) Region (`us-west-2`). The VPC peering connection must be accepted in the `us-west-2` Region.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection
```

```
&VpcId=vpc-1a2b3c4d
&PeerVpcId=vpc-a1b2c3d4
&PeerRegion=us-west-2
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVpnConcentrator

Creates a VPN concentrator that aggregates multiple VPN connections to a transit gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to apply to the VPN concentrator during creation.

Type: Array of TagSpecification objects

Required: No

**TransitGatewayId**

The ID of the transit gateway to attach the VPN concentrator to.

Type: String

Required: No

**Type**

The type of VPN concentrator to create.

Type: String

Valid Values: `ipsec.1`

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpnConcentrator**

Information about the VPN concentrator.

Type: VpnConcentrator object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a VPN Concentrator on the Transit Gateway `tgw-0eae06e326d7c27d8`.

#### Sample Request

```
https://ec2.us-east-1.amazonaws.com/?Version=2016-11-15&Action=CreateVpnConcentrator
                   &Type=ipsec.1
                   &TransitGatewayId=tgw-0eae06e326d7c27d8
```

#### Sample Response

```
<CreateVpnConcentratorResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>c875a725-2eb7-4deb-ad8f-4445c071460f</requestId>
    <vpnConcentrator>
        <state>pending</state>
        <transitGatewayAttachmentId>tgw-attach-04a445da95a6814cc</
transitGatewayAttachmentId>
        <transitGatewayId>tgw-0eae06e326d7c27d8</transitGatewayId>
        <type>ipsec.1</type>
```

```
        <vpnConcentratorId>vcn-0767cb7521c5c4945</vpnConcentratorId>
    </vpnConcentrator>
</CreateVpnConcentratorResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVpnConnection

Creates a VPN connection between an existing virtual private gateway or transit gateway and a customer gateway. The supported connection type is `ipsec.1`.

The response includes information that you need to give to your network administrator to configure your customer gateway.

> **Important**
>
> We strongly recommend that you use HTTPS when calling this operation because the response contains sensitive cryptographic information for configuring your customer gateway device.

If you decide to shut down your VPN connection for any reason and later create a new VPN connection, you must reconfigure your customer gateway with the new information returned from this call.

This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn't return an error.

For more information, see AWS Site-to-Site VPN in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CustomerGatewayId**

The ID of the customer gateway.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Options**

The options for the VPN connection.

Type: VpnConnectionOptionsSpecification object

Required: No

**PreSharedKeyStorage**

Specifies the storage mode for the pre-shared key (PSK). Valid values are `Standard`" (stored in the Site-to-Site VPN service) or `SecretsManager` (stored in AWS Secrets Manager).

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the VPN connection.

Type: Array of TagSpecification objects

Required: No

**TransitGatewayId**

The ID of the transit gateway. If you specify a transit gateway, you cannot specify a virtual private gateway.

Type: String

Required: No

**Type**

The type of VPN connection (`ipsec.1`).

Type: String

Required: Yes

**VpnConcentratorId**

The ID of the VPN concentrator to associate with the VPN connection.

Type: String

Required: No

**VpnGatewayId**

The ID of the virtual private gateway. If you specify a virtual private gateway, you cannot specify a transit gateway.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpnConnection**

Information about the VPN connection.

Type: VpnConnection object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates a VPN connection between the specified virtual private gateway and the specified customer gateway. The response includes configuration information for configuring the customer gateway device. Because it's a long set of information, we haven't included the complete response here. To see an example of the configuration information, see the Your customer gateway device.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-112233445566aabbc
&VpnGatewayId=vgw-aabbccddee1234567
&AUTHPARAMS
```

### Sample Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>22896b9b-e2fe-4574-9a20-example</requestId>
    <vpnConnection>
        <vpnConnectionId>vpn-01234abcabc123456</vpnConnectionId>
        <state>pending</state>
        <customerGatewayConfiguration>...Customer gateway configuration data in escaped
 XML format...</customerGatewayConfiguration>
        <customerGatewayId>cgw-112233445566aabbc</customerGatewayId>
        <vpnGatewayId>vgw-aabbccddee1234567</vpnGatewayId>
        <tagSet/>
        <options>
            <enableAcceleration>false</enableAcceleration>
            <staticRoutesOnly>false</staticRoutesOnly>
            <localIpv4NetworkCidr>0.0.0.0/0</localIpv4NetworkCidr>
            <remoteIpv4NetworkCidr>0.0.0.0/0</remoteIpv4NetworkCidr>
            <tunnelInsideIpVersion>ipv4</tunnelInsideIpVersion>
            <tunnelOptionSet>
                <item/>
                <item/>
            </tunnelOptionSet>
        </options>
        <routes/>
        <category>VPN</category>
    </vpnConnection>
</CreateVpnConnectionResponse>
```

## Example 2

This example creates a VPN connection with the static routes option between the virtual private gateway with the ID `vgw-8db04f81`, and the customer gateway with the ID `cgw-b4dc3961`, for a device that does not support the Border Gateway Protocol (BGP).

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-b4dc3961
&VpnGatewayId=vgw-8db04f81
&Options.StaticRoutesOnly=true
&AUTHPARAMS
```

## Example 3

This example creates a VPN connection between the virtual private gateway with the ID `vgw-8db04f81` and the customer gateway with the ID `cgw-b4dc3961` and specifies the inside IP address CIDR block and a custom pre-shared key for each tunnel.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-b4dc3961
&VpnGatewayId=vgw-8db04f81
&Options.TunnelOptions.1.PreSharedKey=wMp_IGfO1d1o9AT4lF6tJLFN4EXAMPLE
&Options.TunnelOptions.1.TunnelInsideCidr=169.254.44.110/30
&Options.TunnelOptions.2.PreSharedKey=HAM8lcnFYEvfl6gUrOatJLFN4EXAMPLE
&Options.TunnelOptions.2.TunnelInsideCidr=169.254.44.240/30
&AUTHPARAMS
```

## Example 4

This example creates a VPN connection between the specified transit gateway and the specified customer gateway. The VPN connection processes IPv6 traffic inside the tunnels, and the tunnel options for both tunnels specify that AWS must initiate the IKE negotiation. A tag with a key of `Location` and a value of `NewYorkVPN` is applied to the VPN connection.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-112233445566aabbc
&TransitGatewayId=tgw-0123f96e7b3f5babc
&Options.StaticRoutesOnly=false
```

```
&Options.TunnelInsideIpVersion=ipv6
&Options.TunnelOptions.1.StartupAction=start
&Options.TunnelOptions.2.StartupAction=start
&TagSpecification.1.ResourceType=vpn-connection
&TagSpecification.1.Tag.1.Key=Location
&TagSpecification.1.Tag.1.Value=NewYorkVPN
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVpnConnectionRoute

Creates a static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

For more information, see AWS Site-to-Site VPN in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DestinationCidrBlock**

The CIDR block associated with the local subnet of the customer network.

Type: String

Required: Yes

**VpnConnectionId**

The ID of the VPN connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a static route to the VPN connection for the VPN connection with the ID vpn-83ad48ea to the destination CIDR block 11.12.0.0/16. Note that when using the Query API the "/" is denoted as "%2F".

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
&VpnConnectionId=vpn-83ad48ea
&AUTHPARAMS
```

#### Sample Response

```
<CreateVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
    <return>true</return>
</CreateVpnConnectionRouteResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# CreateVpnGateway

Creates a virtual private gateway. A virtual private gateway is the endpoint on the VPC side of your VPN connection. You can create a virtual private gateway before creating the VPC itself.

For more information, see AWS Site-to-Site VPN in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AmazonSideAsn**

A private Autonomous System Number (ASN) for the Amazon side of a BGP session. If you're using a 16-bit ASN, it must be in the 64512 to 65534 range. If you're using a 32-bit ASN, it must be in the 4200000000 to 4294967294 range.

Default: 64512

Type: Long

Required: No

**AvailabilityZone**

The Availability Zone for the virtual private gateway.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TagSpecification.N**

The tags to apply to the virtual private gateway.

Type: Array of TagSpecification objects

Required: No

**Type**

The type of VPN connection this virtual private gateway supports.

Type: String

Valid Values: `ipsec.1`

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpnGateway**

Information about the virtual private gateway.

Type: VpnGateway object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates a virtual private gateway.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnGateway
&Type=ipsec.1
&AUTHPARAMS
```

### Sample Response

```
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnGateway>
        <vpnGatewayId>vgw-fe4aa197</vpnGatewayId>
        <state>available</state>
        <type>ipsec.1</type>
        <amazonSideAsn>64512</amazonSideAsn>
        <attachments/>
    </vpnGateway>
</CreateVpnGatewayResponse>
```

## Example 2

This example creates a virtual private gateway and specifies a private ASN of 65001 for the Amazon side of the gateway.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnGateway
&Type=ipsec.1
&AmazonSideAsn=65001
&AUTHPARAMS
```

### Sample Response

```
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>fe90b404-d4e5-4153-8677-31dexample</requestId>
    <vpnGateway>
        <vpnGatewayId>vgw-f74aa19e</vpnGatewayId>
        <state>available</state>
        <type>ipsec.1</type>
        <amazonSideAsn>65001</amazonSideAsn>
        <attachments/>
```

```
    </vpnGateway>
</CreateVpnGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteCapacityManagerDataExport

Deletes an existing Capacity Manager data export configuration. This stops future scheduled exports but does not delete previously exported files from S3.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityManagerDataExportId**

The unique identifier of the data export configuration to delete.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**capacityManagerDataExportId**

The unique identifier of the deleted data export configuration.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes a data export configuration.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteCapacityManagerDataExport
&CapacityManagerDataExportId=cmde-0abcd1234EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DeleteCapacityManagerDataExportResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <capacityManagerDataExportId>cmde-0abcd1234EXAMPLE</capacityManagerDataExportId>
</DeleteCapacityManagerDataExportResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteCarrierGateway

Deletes a carrier gateway.

> **Important**
>
> If you do not delete the route that contains the carrier gateway as the Target, the route is a blackhole route. For information about how to delete a route, see DeleteRoute.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CarrierGatewayId**

The ID of the carrier gateway.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**carrierGateway**

Information about the carrier gateway.

Type: CarrierGateway object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteClientVpnEndpoint

Deletes the specified Client VPN endpoint. You must disassociate all target networks before you can delete a Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientVpnEndpointId**

The ID of the Client VPN to be deleted.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**status**

The current state of the Client VPN endpoint.

Type: ClientVpnEndpointStatus object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example applies a security group to a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteClientVpnEndpoint
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DeleteClientVpnEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>f1e0fdfc-96a4-4d7d-bc78-22eb0EXAMPLE</requestId>
    <status>
        <code>deleting</code>
    </status>
</DeleteClientVpnEndpointResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteClientVpnRoute

Deletes a route from a Client VPN endpoint. You can only delete routes that you manually added using the **CreateClientVpnRoute** action. You cannot delete routes that were automatically added when associating a subnet. To remove routes that have been automatically added, disassociate the target subnet from the Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientVpnEndpointId**

The ID of the Client VPN endpoint from which the route is to be deleted.

Type: String

Required: Yes

**DestinationCidrBlock**

The IPv4 address range, in CIDR notation, of the route to be deleted.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TargetVpcSubnetId**

The ID of the target subnet used by the route.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**status**

The current state of the route.

Type: ClientVpnRouteStatus object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes a route from a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteClientVpnRoute
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&DestinationCidrBlock=0.0.0.0/0
&TargetVpcSubnetId=subnet-057fa0918fEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DeleteClientVpnRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>00d80748-708d-40f7-8635-f34acEXAMPLE</requestId>
    <status>
```

```
        <code>deleting</code>
    </status>
</DeleteClientVpnRouteResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteCoipCidr

Deletes a range of customer-owned IP addresses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

A customer-owned IP address range that you want to delete.

Type: String

Required: Yes

**CoipPoolId**

The ID of the customer-owned address pool.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**coipCidr**

Information about a range of customer-owned IP addresses.

Type: CoipCidr object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteCoipPool

Deletes a pool of customer-owned IP (CoIP) addresses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CoipPoolId**

The ID of the CoIP pool that you want to delete.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**coipPool**

Information about the CoIP address pool.

Type: CoipPool object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteCustomerGateway

Deletes the specified customer gateway. You must delete the VPN connection before you can delete the customer gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CustomerGatewayId**

The ID of the customer gateway.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified customer gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteCustomerGateway
&CustomerGatewayId=cgw-b4dc3961
&AUTHPARAMS
```

#### Sample Response

```
<DeleteCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteCustomerGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteDhcpOptions

Deletes the specified set of DHCP options. You must disassociate the set of DHCP options before you can delete it. You can disassociate the set of DHCP options by associating either a new set of options or the default set of options with the VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DhcpOptionsId**

The ID of the DHCP options set.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified set of DHCP options.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteDhcpOptions
&DhcpOptionsId=dopt-7a8b9c2d
&AUTHPARAMS
```

#### Sample Response

```
<DeleteDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteDhcpOptionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteEgressOnlyInternetGateway

Deletes an egress-only internet gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EgressOnlyInternetGatewayId**

The ID of the egress-only internet gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**returnCode**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified egress-only internet gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteEgressOnlyInternetGateway
&EgressOnlyInternetGatewayId=eigw-015e0e244e24dfe8a
&AUTHPARAMS
```

#### Sample Response

```
<DeleteEgressOnlyInternetGateway xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <returnCode>true</returnCode>
</DeleteEgressOnlyInternetGateway>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteFleets

Deletes the specified EC2 Fleet request.

After you delete an EC2 Fleet request, it launches no new instances.

You must also specify whether a deleted EC2 Fleet request should terminate its instances. If you choose to terminate the instances, the EC2 Fleet request enters the `deleted_terminating` state. Otherwise, it enters the `deleted_running` state, and the instances continue to run until they are interrupted or you terminate them manually.

A deleted `instant` fleet with running instances is not supported. When you delete an `instant` fleet, Amazon EC2 automatically terminates all its instances. For fleets with more than 1000 instances, the deletion request might fail. If your fleet has more than 1000 instances, first terminate most of the instances manually, leaving 1000 or fewer. Then delete the fleet, and the remaining instances will be terminated automatically.

> **Important**
>
> **Terminating an instance is permanent and irreversible.**
> After you terminate an instance, you can no longer connect to it, and it can't be recovered. All attached Amazon EBS volumes that are configured to be deleted on termination are also permanently deleted and can't be recovered. All data stored on instance store volumes is permanently lost. For more information, see How instance termination works.
> Before you terminate an instance, ensure that you have backed up all data that you need to retain after the termination to persistent storage.

### Restrictions

- You can delete up to 25 fleets of type `instant` in a single request.
- You can delete up to 100 fleets of type `maintain` or `request` in a single request.
- You can delete up to 125 fleets in a single request, provided you do not exceed the quota for each fleet type, as specified above.
- If you exceed the specified number of fleets to delete, no fleets are deleted.

For more information, see Delete an EC2 Fleet request and the instances in the fleet in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FleetId.N**

The IDs of the EC2 Fleets.

Constraints: In a single request, you can specify up to 25 `instant` fleet IDs and up to 100 `maintain` or `request` fleet IDs.

Type: Array of strings

Required: Yes

**TerminateInstances**

Indicates whether to terminate the associated instances when the EC2 Fleet is deleted. The default is to terminate the instances.

To let the instances continue to run after the EC2 Fleet is deleted, specify `no-terminate-instances`. Supported only for fleets of type `maintain` and `request`.

For `instant` fleets, you cannot specify `NoTerminateInstances`. A deleted `instant` fleet with running instances is not supported.

Type: Boolean

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**successfulFleetDeletionSet**

Information about the EC2 Fleets that are successfully deleted.

Type: Array of DeleteFleetSuccessItem objects

**unsuccessfulFleetDeletionSet**

Information about the EC2 Fleets that are not successfully deleted.

Type: Array of DeleteFleetErrorItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteFlowLogs

Deletes one or more flow logs.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FlowLogId.N**

One or more flow log IDs.

Constraint: Maximum of 1000 flow log IDs.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**unsuccessful**

Information about the flow logs that could not be deleted successfully.

Type: Array of UnsuccessfulItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes flow log fl-1a2b3c4d.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteFlowLogs
&FlowLogId.1=fl-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<DeleteFlowLogsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>c5c4f51f-f4e9-42bc-8700-EXAMPLE</requestId>
    <unsuccessful/>
</DeleteFlowLogsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteFpgaImage

Deletes the specified Amazon FPGA Image (AFI).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FpgaImageId**

The ID of the AFI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified AFI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteFpgaImage
&FpgaImageId=afi-0d123e21abcc85abc
&AUTHPARAMS
```

#### Sample Response

```
<DeleteFpgaImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>dd3bf051-468e-4490-ad8a-2ffexample</requestId>
    <return>true</return>
</DeleteFpgaImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteImageUsageReport

Deletes the specified image usage report.

For more information, see View your AMI usage in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ReportId**

The ID of the report to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteInstanceConnectEndpoint

Deletes the specified EC2 Instance Connect Endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceConnectEndpointId**

The ID of the EC2 Instance Connect Endpoint to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceConnectEndpoint**

Information about the EC2 Instance Connect Endpoint.

Type: Ec2InstanceConnectEndpoint object

**requestId**

The ID of the request.

Type: String

# Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example: Delete an EC2 Instance Connect Endpoint

This example deletes the specified EC2 Instance Connect Endpoint.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteInstanceConnectEndpoint
&InstanceConnectEndpointId=eice-0123456789example
&AUTHPARAMS
```

### Sample Response

```
<DeleteInstanceConnectEndpointResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>d732c12a-2f0c-49b4-b2a9-f2922e5f5635</requestId>
  <instanceConnectEndpoint>
    <availabilityZone>availability-zone</availabilityZone>
    <availabilityZoneId>availability-zone-id</availabilityZoneId>
    <createdAt>2023-06-06T20:01:31.000Z</createdAt>
    <instanceConnectEndpointArn>arn:aws:ec2:region:account-id:instance-connect-
endpoint/eice-0123456789example</instanceConnectEndpointArn>
    <instanceConnectEndpointId>eice-0123456789example</instanceConnectEndpointId>
    <networkInterfaceIdSet />
    <ownerId>account-id</ownerId>
    <preserveClientIp>false</preserveClientIp>
    <securityGroupIdSet>
      <item>sg-0123456789example</item>
    </securityGroupIdSet>
    <state>delete-in-progress</state>
    <stateMessage />
    <subnetId>subnet-0123456789example</subnetId>
    <vpcId>vpc-0123456789example</vpcId>
  </instanceConnectEndpoint>
</DeleteInstanceConnectEndpointResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteInstanceEventWindow

Deletes the specified event window.

For more information, see Define event windows for scheduled events in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ForceDelete**

Specify `true` to force delete the event window. Use the force delete parameter if the event window is currently associated with targets.

Type: Boolean

Required: No

**InstanceEventWindowId**

The ID of the event window.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceEventWindowState**

The state of the event window.

Type: InstanceEventWindowStateChange object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteInternetGateway

Deletes the specified internet gateway. You must detach the internet gateway from the VPC before you can delete it.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InternetGatewayId**

The ID of the internet gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified internet gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteInternetGateway
&InternetGatewayId=igw-eaad4883
&AUTHPARAMS
```

#### Sample Response

```
<DeleteInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteInternetGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteIpam

Delete an IPAM. Deleting an IPAM removes all monitored data associated with the IPAM including the historical data for CIDRs.

For more information, see Delete an IPAM in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cascade**

Enables you to quickly delete an IPAM, private scopes, pools in private scopes, and any allocations in the pools in private scopes. You cannot delete the IPAM with this option if there is a pool in your public scope. If you use this option, IPAM does the following:

- Deallocates any CIDRs allocated to VPC resources (such as VPCs) in pools in private scopes.

  > **Note**
  >
  > No VPC resources are deleted as a result of enabling this option. The CIDR associated with the resource will no longer be allocated from an IPAM pool, but the CIDR itself will remain unchanged.

- Deprovisions all IPv4 CIDRs provisioned to IPAM pools in private scopes.
- Deletes all IPAM pools in private scopes.
- Deletes all non-default private scopes in the IPAM.
- Deletes the default public and private scopes and the IPAM.

Type: Boolean

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamId**

The ID of the IPAM to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipam**

Information about the results of the deletion.

Type: Ipam object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteIpamExternalResourceVerificationToken

Delete a verification token.

A verification token is an AWS-generated random value that you can use to prove ownership of an external resource. For example, you can use a verification token to validate that you control a public IP address range when you bring an IP address range to AWS (BYOIP).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamExternalResourceVerificationTokenId**

The token ID.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamExternalResourceVerificationToken**

The verification token.

Type: IpamExternalResourceVerificationToken object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteIpamPolicy

Deletes an IPAM policy.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPolicyId**

The ID of the IPAM policy to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamPolicy**

Information about the deleted IPAM policy.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

Type: IpamPolicy object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteIpamPool

Delete an IPAM pool.

> **Note**
>
> You cannot delete an IPAM pool if there are allocations in it or CIDRs provisioned to it. To release allocations, see ReleaseIpamPoolAllocation. To deprovision pool CIDRs, see DeprovisionIpamPoolCidr.

For more information, see Delete a pool in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cascade**

Enables you to quickly delete an IPAM pool and all resources within that pool, including provisioned CIDRs, allocations, and other pools.

> **Important**
>
> You can only use this option to delete pools in the private scope or pools in the public scope with a source resource. A source resource is a resource used to provision CIDRs to a resource planning pool.

Type: Boolean

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPoolId**

The ID of the pool to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamPool**

Information about the results of the deletion.

Type: IpamPool object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteIpamPrefixListResolver

Deletes an IPAM prefix list resolver. Before deleting a resolver, you must first delete all resolver targets associated with it.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPrefixListResolverId**

The ID of the IPAM prefix list resolver to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamPrefixListResolver**

Information about the IPAM prefix list resolver that was deleted.

Type: IpamPrefixListResolver object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteIpamPrefixListResolverTarget

Deletes an IPAM prefix list resolver target. This removes the association between the resolver and the managed prefix list, stopping automatic CIDR synchronization.

For more information about IPAM prefix list resolver, see Automate prefix list updates with IPAM in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPrefixListResolverTargetId**

The ID of the IPAM prefix list resolver target to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamPrefixListResolverTarget**

Information about the IPAM prefix list resolver target that was deleted.

Type: IpamPrefixListResolverTarget object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteIpamResourceDiscovery

Deletes an IPAM resource discovery. A resource discovery is an IPAM component that enables IPAM to manage and monitor resources that belong to the owning account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamResourceDiscoveryId**

The IPAM resource discovery ID.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamResourceDiscovery**

The IPAM resource discovery.

Type: IpamResourceDiscovery object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteIpamScope

Delete the scope for an IPAM. You cannot delete the default scopes.

For more information, see Delete a scope in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamScopeId**

The ID of the scope to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamScope**

Information about the results of the deletion.

Type: IpamScope object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteKeyPair

Deletes the specified key pair, by removing the public key from Amazon EC2.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**KeyName**

The name of the key pair.

Type: String

Required: No

**KeyPairId**

The ID of the key pair.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**keyPairId**

The ID of the key pair.

Type: String

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example request deletes the key pair named `my-key-pair`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteKeyPair
&KeyName=my-key-pair
&AUTHPARAMS
```

#### Sample Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <return>true</return>
  <keyPairId>key-12345abcdeEXAMPLE</keyPairId>
</DeleteKeyPairResponse>
```

### Example 2

This example request deletes a key pair with the ID `key-abcd12345eEXAMPLE`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteKeyPair
```

```
&KeyPairId=key-abcd12345eEXAMPLE
&AUTHPARAMS
```

### Sample Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <return>true</return>
  <keyPairId>key-abcd12345eEXAMPLE</keyPairId>
</DeleteKeyPairResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteLaunchTemplate

Deletes a launch template. Deleting a launch template deletes all of its versions.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LaunchTemplateId**

The ID of the launch template.

You must specify either the launch template ID or the launch template name, but not both.

Type: String

Required: No

**LaunchTemplateName**

The name of the launch template.

You must specify either the launch template ID or the launch template name, but not both.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: `[a-zA-Z0-9\(\)\.\-/_]+`

Required: No

## Response Elements

The following elements are returned by the service.

**launchTemplate**

Information about the launch template.

Type: LaunchTemplate object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes launch template `lt-0a20c965061f64abc`.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DeleteLaunchTemplate
&LaunchTemplateId=lt-0a20c965061f64abc
&AUTHPARAMS
```

**Sample Response**

```
<DeleteLaunchTemplateResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>c12605de-c470-4eaa-a4d0-ab4dexample</requestId>
    <launchTemplate>
        <createTime>2017-10-31T11:38:52.000Z</createTime>
        <createdBy>arn:aws:iam::123456789012:root</createdBy>
        <defaultVersionNumber>2</defaultVersionNumber>
        <latestVersionNumber>2</latestVersionNumber>
        <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
```

```
        <launchTemplateName>MyLaunchTemplate</launchTemplateName>
    </launchTemplate>
</DeleteLaunchTemplateResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteLaunchTemplateVersions

Deletes one or more versions of a launch template.

You can't delete the default version of a launch template; you must first assign a different version as the default. If the default version is the only version for the launch template, you must delete the entire launch template using DeleteLaunchTemplate.

You can delete up to 200 launch template versions in a single request. To delete more than 200 versions in a single request, use DeleteLaunchTemplate, which deletes the launch template and all of its versions.

For more information, see Delete a launch template version in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LaunchTemplateId**

The ID of the launch template.

You must specify either the launch template ID or the launch template name, but not both.

Type: String

Required: No

**LaunchTemplateName**

The name of the launch template.

You must specify either the launch template ID or the launch template name, but not both.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: `[a-zA-Z0-9\(\)\.\-/_]+`

Required: No

**LaunchTemplateVersion.N**

The version numbers of one or more launch template versions to delete. You can specify up to 200 launch template version numbers.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**successfullyDeletedLaunchTemplateVersionSet**

Information about the launch template versions that were successfully deleted.

Type: Array of DeleteLaunchTemplateVersionsResponseSuccessItem objects

**unsuccessfullyDeletedLaunchTemplateVersionSet**

Information about the launch template versions that could not be deleted.

Type: Array of DeleteLaunchTemplateVersionsResponseErrorItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example deletes version 3 of launch template `lt-0a20c965061f64abc`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteLaunchTemplateVersions
&LaunchTemplateId=lt-0a20c965061f64abc
&LaunchTemplateVersion.1=3
&AUTHPARAMS
```

### Sample Response

```
<DeleteLaunchTemplateVersionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>67fc746a-1b3f-467e-8583-7061cexample</requestId>
    <unsuccessfullyDeletedLaunchTemplateVersionSet/>
    <successfullyDeletedLaunchTemplateVersionSet>
        <item>
            <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
            <launchTemplateName>MyLaunchTemplate</launchTemplateName>
            <versionNumber>3</versionNumber>
        </item>
    </successfullyDeletedLaunchTemplateVersionSet>
</DeleteLaunchTemplateVersionsResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteLocalGatewayRoute

Deletes the specified route from the specified local gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DestinationCidrBlock**

The CIDR range for the route. This must match the CIDR for the route exactly.

Type: String

Required: No

**DestinationPrefixListId**

Use a prefix list in place of `DestinationCidrBlock`. You cannot use `DestinationPrefixListId` and `DestinationCidrBlock` in the same request.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**route**

Information about the route.

Type: LocalGatewayRoute object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteLocalGatewayRouteTable

Deletes a local gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**localGatewayRouteTable**

Information about the local gateway route table.

Type: LocalGatewayRouteTable object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteLocalGatewayRouteTableVirtualInterfaceGroupAssociation

Deletes a local gateway route table virtual interface group association.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayRouteTableVirtualInterfaceGroupAssociationId**

The ID of the local gateway route table virtual interface group association.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**localGatewayRouteTableVirtualInterfaceGroupAssociation**

Information about the association.

Type: LocalGatewayRouteTableVirtualInterfaceGroupAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteLocalGatewayRouteTableVpcAssociation

Deletes the specified association between a VPC and local gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayRouteTableVpcAssociationId**

The ID of the association.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**localGatewayRouteTableVpcAssociation**

Information about the association.

Type: LocalGatewayRouteTableVpcAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteLocalGatewayVirtualInterface

Deletes the specified local gateway virtual interface.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayVirtualInterfaceId**

The ID of the local virtual interface to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**localGatewayVirtualInterface**

Information about the deleted local gateway virtual interface.

Type: LocalGatewayVirtualInterface object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteLocalGatewayVirtualInterfaceGroup

Delete the specified local gateway interface group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayVirtualInterfaceGroupId**

The ID of the local gateway virtual interface group to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**localGatewayVirtualInterfaceGroup**

Information about the deleted local gateway virtual interface group.

Type: LocalGatewayVirtualInterfaceGroup object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteManagedPrefixList

Deletes the specified managed prefix list. You must first remove all references to the prefix list in your resources.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PrefixListId**

The ID of the prefix list.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**prefixList**

Information about the prefix list.

Type: ManagedPrefixList object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified prefix list.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteManagedPrefixList
&PrefixListId=pl-0123123123123aabb
&AUTHPARAMS
```

#### Sample Response

```
<DeleteManagedPrefixListResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>06152571-575a-49aa-af95-example</requestId>
    <prefixList>
        <addressFamily>IPv6</addressFamily>
        <maxEntries>25</maxEntries>
        <ownerId>123456789012</ownerId>
        <prefixListArn>arn:aws:ec2:us-east-1:123456789012:prefix-list/
pl-0123123123123aabb</prefixListArn>
        <prefixListId>pl-0123123123123aabb</prefixListId>
        <prefixListName>test-pl</prefixListName>
        <state>delete-in-progress</state>
        <version>1</version>
    </prefixList>
</DeleteManagedPrefixListResponse>'
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteNatGateway

Deletes the specified NAT gateway. Deleting a public NAT gateway disassociates its Elastic IP address, but does not release the address from your account. Deleting a NAT gateway does not delete any NAT gateway routes in your route tables.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NatGatewayId**

The ID of the NAT gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**natGatewayId**

The ID of the NAT gateway.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes NAT gateway nat-04ae55e711cec5680.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNatGateway
&NatGatewayId=nat-04ae55e711cec5680
&AUTHPARAMS
```

#### Sample Response

```
<DeleteNatGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>741fc8ab-6ebe-452b-b92b-example</requestId>
    <natGatewayId>nat-04ae55e711cec5680</natGatewayId>
</DeleteNatGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteNetworkAcl

Deletes the specified network ACL. You can't delete the ACL if it's associated with any subnets. You can't delete the default network ACL.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkAclId**

The ID of the network ACL.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified network ACL.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAcl
&NetworkAclId=acl-2cb85d45
&AUTHPARAMS
```

#### Sample Response

```
<DeleteNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DeleteNetworkAclResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteNetworkAclEntry

Deletes the specified ingress or egress entry (rule) from the specified network ACL.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Egress**

Indicates whether the rule is an egress rule.

Type: Boolean

Required: Yes

**NetworkAclId**

The ID of the network ACL.

Type: String

Required: Yes

**RuleNumber**

The rule number of the entry to delete.

Type: Integer

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes ingress rule number 100 from the specified network ACL.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=100
&AUTHPARAMS
```

#### Sample Response

```
<DeleteNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DeleteNetworkAclEntryResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteNetworkInsightsAccessScope

Deletes the specified Network Access Scope.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkInsightsAccessScopeId**

The ID of the Network Access Scope.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**networkInsightsAccessScopeId**

The ID of the Network Access Scope.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteNetworkInsightsAccessScopeAnalysis

Deletes the specified Network Access Scope analysis.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkInsightsAccessScopeAnalysisId**

The ID of the Network Access Scope analysis.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**networkInsightsAccessScopeAnalysisId**

The ID of the Network Access Scope analysis.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteNetworkInsightsAnalysis

Deletes the specified network insights analysis.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkInsightsAnalysisId**

The ID of the network insights analysis.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**networkInsightsAnalysisId**

The ID of the network insights analysis.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteNetworkInsightsPath

Deletes the specified path.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkInsightsPathId**

The ID of the path.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**networkInsightsPathId**

The ID of the path.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteNetworkInterface

Deletes the specified network interface. You must detach the network interface before you can delete it.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified network interface.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkInterface
&NetworkInterfaceId=eni-ffda3197
&AUTHPARAMS
```

#### Sample Response

```
<DeleteNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>e1c6d73b-edaa-4e62-9909-6611404e1739</requestId>
    <return>true</return>
</DeleteNetworkInterfaceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteNetworkInterfacePermission

Deletes a permission for a network interface. By default, you cannot delete the permission if the account for which you're removing the permission has attached the network interface to an instance. However, you can force delete the permission, regardless of any attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Force**

Specify `true` to remove the permission even if the network interface is attached to an instance.

Type: Boolean

Required: No

**NetworkInterfacePermissionId**

The ID of the network interface permission.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified network interface permission.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkInterfacePermission
&NetworkInterfacePermissionId=eni-perm-06fd19020ede149ea
&AUTHPARAMS
```

#### Sample Response

```
<DeleteNetworkInterfacePermissionResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>7a296942-8fa0-45a3-8406-09e9example</requestId>
    <return>true</return>
</DeleteNetworkInterfacePermissionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeletePlacementGroup

Deletes the specified placement group. You must terminate all instances in the placement group before you can delete the placement group. For more information, see Placement groups in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupName**

The name of the placement group.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the placement group named `XYZ-cluster`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeletePlacementGroup
&GroupName=XYZ-cluster
&AUTHPARAMS
```

#### Sample Response

```
<DeletePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
   <return>true</return>
</DeletePlacementGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeletePublicIpv4Pool

Delete a public IPv4 pool. A public IPv4 pool is an EC2 IP address pool required for the public IPv4 CIDRs that you own and bring to AWS to manage with IPAM. IPv6 addresses you bring to AWS, however, use IPAM pools only.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkBorderGroup**

The Availability Zone (AZ) or Local Zone (LZ) network border group that the resource that the IP address is assigned to is in. Defaults to an AZ network border group. For more information on available Local Zones, see Local Zone availability in the *Amazon EC2 User Guide*.

Type: String

Required: No

**PoolId**

The ID of the public IPv4 pool you want to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**returnValue**

Information about the result of deleting the public IPv4 pool.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteQueuedReservedInstances

Deletes the queued purchases for the specified Reserved Instances.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ReservedInstancesId.N**

The IDs of the Reserved Instances.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Required: Yes

## Response Elements

The following elements are returned by the service.

**failedQueuedPurchaseDeletionSet**

Information about the queued purchases that could not be deleted.

Type: Array of FailedQueuedPurchaseDeletion objects

**requestId**

The ID of the request.

Type: String

**successfulQueuedPurchaseDeletionSet**

Information about the queued purchases that were successfully deleted.

Type: Array of SuccessfulQueuedPurchaseDeletion objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteRoute

Deletes the specified route from the specified route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DestinationCidrBlock**

The IPv4 CIDR range for the route. The value you specify must match the CIDR for the route exactly.

Type: String

Required: No

**DestinationIpv6CidrBlock**

The IPv6 CIDR range for the route. The value you specify must match the CIDR for the route exactly.

Type: String

Required: No

**DestinationPrefixListId**

The ID of the prefix list for the route.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteTableId**

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example deletes the route with destination IPv4 CIDR `172.16.1.0/24` from the specified route table.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DeleteRoute
&RouteTableId=rtb-1122334455667788a
&DestinationCidrBlock=172.16.1.0/24
&AUTHPARAMS
```

### Sample Response

```
<DeleteRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DeleteRouteResponse>
```

## Example 2

This example deletes the route with destination IPv6 CIDR `::/0` from the specified route table.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteRoute
&RouteTableId=rtb-1122334455667788a
&DestinationIpv6CidrBlock=::/0
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteRouteServer

Deletes the specified route server.

Amazon VPC Route Server simplifies routing for traffic between workloads that are deployed within a VPC and its internet gateways. With this feature, VPC Route Server dynamically updates VPC and internet gateway route tables with your preferred IPv4 or IPv6 routes to achieve routing fault tolerance for those workloads. This enables you to automatically reroute traffic within a VPC, which increases the manageability of VPC routing and interoperability with third-party workloads.

Route server supports the follow route table types:

- VPC route tables not associated with subnets
- Subnet route tables
- Internet gateway route tables

Route server does not support route tables associated with virtual private gateways. To propagate routes into a transit gateway route table, use Transit Gateway Connect.

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteServerId**

The ID of the route server to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServer**

Information about the deleted route server.

Type: RouteServer object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteRouteServerEndpoint

Deletes the specified route server endpoint.

A route server endpoint is an AWS-managed component inside a subnet that facilitates BGP (Border Gateway Protocol) connections between your route server and your BGP peers.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteServerEndpointId**

The ID of the route server endpoint to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServerEndpoint**

Information about the deleted route server endpoint.

Type: RouteServerEndpoint object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteRouteServerPeer

Deletes the specified BGP peer from a route server.

A route server peer is a session between a route server endpoint and the device deployed in AWS (such as a firewall appliance or other network security function running on an EC2 instance). The device must meet these requirements:

- Have an elastic network interface in the VPC
- Support BGP (Border Gateway Protocol)
- Can initiate BGP sessions

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteServerPeerId**

The ID of the route server peer to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServerPeer**

Information about the deleted route server peer.

Type: RouteServerPeer object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteRouteTable

Deletes the specified route table. You must disassociate the route table from any subnets before you can delete it. You can't delete the main route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteTableId**

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified route table.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteRouteTable
&RouteTableId=rtb-1122334455667788a
&AUTHPARAMS
```

#### Sample Response

```
<DeleteRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DeleteRouteTableResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteSecondaryNetwork

Deletes a secondary network. You must delete all secondary subnets in the secondary network before you can delete the secondary network.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SecondaryNetworkId**

The ID of the secondary network.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier to ensure the idempotency of the request. Only returned if a client token was provided in the request.

Type: String

**requestId**

The ID of the request.

Type: String

**secondaryNetwork**

Information about the secondary network.

Type: SecondaryNetwork object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes a secondary network.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSecondaryNetwork
   &SecondaryNetworkId=sn-0123456789abcdef0
   &ClientToken=550e8400-e29b-41d4-a716-446655440000
   &AUTHPARAMS
```

#### Sample Response

```
<DeleteSecondaryNetworkResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <secondaryNetwork>
      <secondaryNetworkId>sn-0123456789abcdef0</secondaryNetworkId>
```

```
      <secondaryNetworkArn>arn:aws:ec2:us-east-2:123456789012:secondary-network/
sn-0123456789abcdef0</secondaryNetworkArn>
      <ownerId>123456789012</ownerId>
      <type>rdma</type>
      <state>delete-in-progress</state>
      <ipv4CidrBlockAssociations>
         <item>
            <associationId>sn-cidr-assoc-56789901234abcdef0</associationId>
            <cidrBlock>10.0.0.0/16</cidrBlock>
            <state>disassociating</state>
         </item>
      </ipv4CidrBlockAssociations>
      <tagSet>
         <item>
            <key>Name</key>
            <value>Prod Secondary Network</value>
         </item>
      </tagSet>
   </secondaryNetwork>
   <clientToken>550e8400-e29b-41d4-a716-446655440000</clientToken>
</DeleteSecondaryNetworkResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteSecondarySubnet

Deletes a secondary subnet. A secondary subnet must not contain any secondary interfaces prior to deletion.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SecondarySubnetId**

The ID of the secondary subnet to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier to ensure the idempotency of the request. Only returned if a client token was provided in the request.

Type: String

**requestId**

The ID of the request.

Type: String

**secondarySubnet**

Information about the secondary subnet being deleted.

Type: SecondarySubnet object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes a secondary subnet.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSecondarySubnet
   &SecondarySubnetId=ss-0123456789abcdef0
   &ClientToken=550e8400-e29b-41d4-a716-446655440000
   &AUTHPARAMS
```

#### Sample Response

```
<DeleteSecondarySubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <secondarySubnet>
      <secondarySubnetId>ss-0123456789abcdef0</secondarySubnetId>
```

```
      <secondarySubnetArn>arn:aws:ec2:us-east-2:123456789012:secondary-subnet/
ss-0123456789abcdef0</secondarySubnetArn>
      <secondaryNetworkId>sn-0123456789abcdef0</secondaryNetworkId>
      <secondaryNetworkType>rdma</secondaryNetworkType>
      <ownerId>123456789012</ownerId>
      <availabilityZoneId>use2-az1</availabilityZoneId>
      <availabilityZone>us-east-2a</availabilityZone>
      <ipv4CidrBlockAssociations>
         <item>
            <associationId>ss-cidr-assoc-56789901234abcdef0</associationId>
            <cidrBlock>10.0.0.0/24</cidrBlock>
            <state>disassociating</state>
         </item>
      </ipv4CidrBlockAssociations>
      <state>delete-in-progress</state>
      <tagSet>
         <item>
            <key>Name</key>
            <value>Prod Secondary Subnet</value>
         </item>
      </tagSet>
   </secondarySubnet>
   <clientToken>550e8400-e29b-41d4-a716-446655440000</clientToken>
</DeleteSecondarySubnetResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteSecurityGroup

Deletes a security group.

If you attempt to delete a security group that is associated with an instance or network interface, is referenced by another security group in the same VPC, or has a VPC association, the operation fails with `DependencyViolation`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupId**

The ID of the security group.

Type: String

Required: No

**GroupName**

[Default VPC] The name of the security group. You can specify either the security group name or the security group ID. For security groups in a nondefault VPC, you must specify the security group ID.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**groupId**

The ID of the deleted security group.

Type: String

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified security group.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupId=sg-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
  <return>true</return>
</DeleteSecurityGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteSnapshot

Deletes the specified snapshot.

When you make periodic snapshots of a volume, the snapshots are incremental, and only the blocks on the device that have changed since your last snapshot are saved in the new snapshot. When you delete a snapshot, only the data not needed for any other snapshot is removed. So regardless of which prior snapshots have been deleted, all active snapshots will have access to all the information needed to restore the volume.

You cannot delete a snapshot of the root device of an EBS volume used by a registered AMI. You must first deregister the AMI before you can delete the snapshot.

For more information, see Delete an Amazon EBS snapshot in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SnapshotId**

The ID of the EBS snapshot.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example request deletes the snapshot with the ID `snap-1234567890abcdef0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSnapshot

&SnapshotId.1=snap-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<DeleteSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteSpotDatafeedSubscription

Deletes the data feed for Spot Instances.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example request deletes the data feed for the AWS account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSpotDatafeedSubscription
&AUTHPARAMS
```

### Sample Response

```
<DeleteSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteSpotDatafeedSubscriptionResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteSubnet

Deletes the specified subnet. You must terminate all running instances in the subnet before you can delete the subnet.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SubnetId**

The ID of the subnet.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified subnet.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSubnet
&SubnetId=subnet-9d4a7b6c
&AUTHPARAMS
```

#### Sample Response

```
<DeleteSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteSubnetResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteSubnetCidrReservation

Deletes a subnet CIDR reservation.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SubnetCidrReservationId**

The ID of the subnet CIDR reservation.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**deletedSubnetCidrReservation**

Information about the deleted subnet CIDR reservation.

Type: SubnetCidrReservation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTags

Deletes the specified set of tags from the specified set of resources.

To list the current tags, use DescribeTags. For more information about tags, see Tag your Amazon EC2 resources in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ResourceId.N**

The IDs of the resources, separated by spaces.

Constraints: Up to 1000 resource IDs. We recommend breaking up this request into smaller batches.

Type: Array of strings

Required: Yes

**Tag.N**

The tags to delete. Specify a tag key and an optional tag value to delete specific tags. If you specify a tag key without a tag value, we delete any tag with this key regardless of its value. If you specify a tag key with an empty string as the tag value, we delete the tag only if its value is an empty string.

If you omit this parameter, we delete all user-defined tags for the specified resources. We do not delete AWS-generated tags (tags that have the `aws:` prefix).

Constraints: Up to 1000 tags.

Type: Array of Tag objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes all the user-defined tags for the AMI with the ID `ami-1a2b3c4d`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=ami-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<DeleteTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteTagsResponse>
```

## Example

This example deletes the `stack` and `webserver` tags for two particular instances.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-1234567890abcdef0
&ResourceId.2=i-0598c7d356eba48d7
&Tag.1.Key=stack
&Tag.2.Key=webserver
&AUTHPARAMS
```

## Example

You can specify a tag key without a corresponding tag value to delete the tag regardless of its value. This example request deletes all tags that have a key of `Purpose`, regardless of the tag value.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-0598c7d356eba48d7
&Tag.1.Key=Purpose
&AUTHPARAMS
```

## Example

When you create a tag, you can set the tag value to the empty string. Correspondingly, you can delete only tags that have a specific key and whose value is the empty string. This example request deletes all tags for the specified instance where the key is `Purpose` and the tag value is the empty string.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
```

```
&ResourceId.1=i-1234567890abcdef0
&Tag.1.Key=Purpose
&Tag.2.Value=
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTrafficMirrorFilter

Deletes the specified Traffic Mirror filter.

You cannot delete a Traffic Mirror filter that is in use by a Traffic Mirror session.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TrafficMirrorFilterId**

The ID of the Traffic Mirror filter.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**trafficMirrorFilterId**

The ID of the Traffic Mirror filter.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTrafficMirrorFilterRule

Deletes the specified Traffic Mirror rule.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TrafficMirrorFilterRuleId**

The ID of the Traffic Mirror rule.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**trafficMirrorFilterRuleId**

The ID of the deleted Traffic Mirror rule.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTrafficMirrorSession

Deletes the specified Traffic Mirror session.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TrafficMirrorSessionId**

The ID of the Traffic Mirror session.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**trafficMirrorSessionId**

The ID of the deleted Traffic Mirror session.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTrafficMirrorTarget

Deletes the specified Traffic Mirror target.

You cannot delete a Traffic Mirror target that is in use by a Traffic Mirror session.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TrafficMirrorTargetId**

The ID of the Traffic Mirror target.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**trafficMirrorTargetId**

The ID of the deleted Traffic Mirror target.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGateway

Deletes the specified transit gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayId**

The ID of the transit gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGateway**

Information about the deleted transit gateway.

Type: TransitGateway object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayClientVpnAttachment

Deletes a Transit Gateway attachment for a Client VPN endpoint. The Transit Gateway owner can delete the attachment to remove the association between the Client VPN endpoint and the Transit Gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the Transit Gateway attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayClientVpnAttachment**

Information about the Transit Gateway Client VPN attachment.

Type: TransitGatewayClientVpnAttachment object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes a Transit Gateway Client VPN attachment.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTransitGatewayClientVpnAttachment
&TransitGatewayAttachmentId=tgw-attach-0a34fe6b4fEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DeleteTransitGatewayClientVpnAttachmentResult xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>00d80748-708d-40f7-8635-f34acEXAMPLE</requestId>
    <transitGatewayClientVpnAttachment>
        <transitGatewayAttachmentId>tgw-attach-0a34fe6b4fEXAMPLE</
transitGatewayAttachmentId>
        <transitGatewayId>tgw-0262a0e521EXAMPLE</transitGatewayId>
        <clientVpnEndpointId>cvpn-endpoint-00c5d11fc4EXAMPLE</clientVpnEndpointId>
        <state>deleting</state>
    </transitGatewayClientVpnAttachment>
</DeleteTransitGatewayClientVpnAttachmentResult>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayConnect

Deletes the specified Connect attachment. You must first delete any Connect peers for the attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the Connect attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayConnect**

Information about the deleted Connect attachment.

Type: TransitGatewayConnect object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayConnectPeer

Deletes the specified Connect peer.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayConnectPeerId**

The ID of the Connect peer.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayConnectPeer**

Information about the deleted Connect peer.

Type: TransitGatewayConnectPeer object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayMeteringPolicy

Deletes a transit gateway metering policy.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayMeteringPolicyId**

The ID of the transit gateway metering policy to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayMeteringPolicy**

Information about the deleted transit gateway metering policy.

Type: TransitGatewayMeteringPolicy object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayMeteringPolicyEntry

Deletes an entry from a transit gateway metering policy.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PolicyRuleNumber**

The rule number of the metering policy entry to delete.

Type: Integer

Required: Yes

**TransitGatewayMeteringPolicyId**

The ID of the transit gateway metering policy containing the entry to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayMeteringPolicyEntry**

Information about the deleted transit gateway metering policy entry.

Type: TransitGatewayMeteringPolicyEntry object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayMulticastDomain

Deletes the specified transit gateway multicast domain.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayMulticastDomain**

Information about the deleted transit gateway multicast domain.

Type: TransitGatewayMulticastDomain object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example deletes the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTransitGatewayMulticastDomain
&TransitGatewayMulticastDomainId=tgw-mcast-domain-02bb79002bEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DeleteTransitGatewayMulticastDomainResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>19914ba0-eb6c-43aa-9381-0bdafEXAMPLE</requestId>
    <transitGatewayMulticastDomain>
        <creationTime>2019-11-20T22:02:03.000Z</creationTime>
        <state>deleting</state>
        <transitGatewayId>tgw-0d88d2d0d5EXAMPLE</transitGatewayId>
        <transitGatewayMulticastDomainId>tgw-mcast-domain-02bb79002bEXAMPLE</
transitGatewayMulticastDomainId>
    </transitGatewayMulticastDomain>
</DeleteTransitGatewayMulticastDomainResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayPeeringAttachment

Deletes a transit gateway peering attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the transit gateway peering attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayPeeringAttachment**

The transit gateway peering attachment.

Type: TransitGatewayPeeringAttachment object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified transit gateway peering attachment by specifying its attachment ID.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTransitGatewayPeeringAttachment
&TransitGatewayAttachmentId=tgw-attach-12345678901abcd12
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayPolicyTable

Deletes the specified transit gateway policy table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayPolicyTableId**

The transit gateway policy table to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayPolicyTable**

Provides details about the deleted transit gateway policy table.

Type: TransitGatewayPolicyTable object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayPrefixListReference

Deletes a reference (route) to a prefix list in a specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PrefixListId**

The ID of the prefix list.

Type: String

Required: Yes

**TransitGatewayRouteTableId**

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayPrefixListReference**

Information about the deleted prefix list reference.

Type: TransitGatewayPrefixListReference object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified prefix list reference in the specified transit gateway route table.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTransitGatewayPrefixListReference
&TransitGatewayRouteTableId=tgw-rtb-0f98a0a5d09abcabc
&PrefixListId=pl-001122334455aabbc
&AUTHPARAMS
```

#### Sample Response

```
<DeleteTransitGatewayPrefixListReferenceResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>482823e8-8165-4312-86ee-example</requestId>
    <transitGatewayPrefixListReference>
        <blackhole>false</blackhole>
        <prefixListId>pl-001122334455aabbc</prefixListId>
        <prefixListOwnerId>123456789012</prefixListOwnerId>
        <state>deleting</state>
        <transitGatewayRouteTableId>tgw-rtb-0f98a0a5d09abcabc</
transitGatewayRouteTableId>
    </transitGatewayPrefixListReference>
</DeleteTransitGatewayPrefixListReferenceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayRoute

Deletes the specified route from the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DestinationCidrBlock**

The CIDR range for the route. This must match the CIDR for the route exactly.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**route**

Information about the route.

Type: TransitGatewayRoute object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayRouteTable

Deletes the specified transit gateway route table. If there are any route tables associated with the transit gateway route table, you must first run DisassociateRouteTable before you can delete the transit gateway route table. This removes any route tables associated with the transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayRouteTable**

Information about the deleted transit gateway route table.

Type: TransitGatewayRouteTable object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayRouteTableAnnouncement

Advertises to the transit gateway that a transit gateway route table is deleted.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayRouteTableAnnouncementId**

The transit gateway route table ID that's being deleted.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayRouteTableAnnouncement**

Provides details about a deleted transit gateway route table.

Type: TransitGatewayRouteTableAnnouncement object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteTransitGatewayVpcAttachment

Deletes the specified VPC attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayVpcAttachment**

Information about the deleted VPC attachment.

Type: TransitGatewayVpcAttachment object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVerifiedAccessEndpoint

Delete an AWS Verified Access endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessEndpointId**

The ID of the Verified Access endpoint.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessEndpoint**

Details about the Verified Access endpoint.

Type: VerifiedAccessEndpoint object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVerifiedAccessGroup

Delete an AWS Verified Access group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessGroupId**

The ID of the Verified Access group.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessGroup**

Details about the Verified Access group.

Type: VerifiedAccessGroup object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVerifiedAccessInstance

Delete an AWS Verified Access instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessInstanceId**

The ID of the Verified Access instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessInstance**

Details about the Verified Access instance.

Type: VerifiedAccessInstance object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVerifiedAccessTrustProvider

Delete an AWS Verified Access trust provider.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessTrustProviderId**

The ID of the Verified Access trust provider.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessTrustProvider**

Details about the Verified Access trust provider.

Type: VerifiedAccessTrustProvider object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVolume

Deletes the specified EBS volume. The volume must be in the `available` state (not attached to an instance).

The volume can remain in the `deleting` state for several minutes.

For more information, see Delete an Amazon EBS volume in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VolumeId**

The ID of the volume.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example request deletes the volume with the ID `vol-1234567890abcdef0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVolume
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteVolumeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVpc

Deletes the specified VPC. You must detach or delete all gateways and resources that are associated with the VPC before you can delete it. For example, you must terminate all instances running in the VPC, delete all security groups associated with the VPC (except the default one), delete all route tables associated with the VPC (except the default one), and so on. When you delete the VPC, it deletes the default security group, network ACL, and route table for the VPC.

If you created a flow log for the VPC that you are deleting, note that flow logs for deleted VPCs are eventually automatically removed.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpc
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteVpcResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVpcBlockPublicAccessExclusion

Delete a VPC Block Public Access (BPA) exclusion. A VPC BPA exclusion is a mode that can be applied to a single VPC or subnet that exempts it from the account's BPA mode and will allow bidirectional or egress-only access. You can create BPA exclusions for VPCs and subnets even when BPA is not enabled on the account to ensure that there is no traffic disruption to the exclusions when VPC BPA is turned on. To learn more about VPC BPA, see Block public access to VPCs and subnets in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ExclusionId**

The ID of the exclusion.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpcBlockPublicAccessExclusion**

Details about an exclusion.

Type: VpcBlockPublicAccessExclusion object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVpcEncryptionControl

Deletes a VPC Encryption Control configuration. This removes the encryption policy enforcement from the specified VPC.

For more information, see Enforce VPC encryption in transit in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcEncryptionControlId**

The ID of the VPC Encryption Control resource to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpcEncryptionControl**

Information about the deleted VPC Encryption Control configuration.

Type: VpcEncryptionControl object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVpcEndpointConnectionNotifications

Deletes the specified VPC endpoint connection notifications.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ConnectionNotificationId.N**

The IDs of the notifications.

Type: Array of strings

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**unsuccessful**

Information about the notifications that could not be deleted successfully.

Type: Array of UnsuccessfulItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes connection notification `vpce-nfn-04bcb952bc8af7123`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpcEndpointConnectionNotifications
&ConnectionNotificationId.1=vpce-nfn-04bcb952bc8af7123
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVpcEndpointConnectionNotificationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>2bf45d2e-a871-4375-9a93-f4188example</requestId>
    <unsuccessful/>
</DeleteVpcEndpointConnectionNotificationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DeleteVpcEndpoints

Deletes the specified VPC endpoints.

When you delete a gateway endpoint, we delete the endpoint routes in the route tables for the endpoint.

When you delete a Gateway Load Balancer endpoint, we delete its endpoint network interfaces. You can only delete Gateway Load Balancer endpoints when the routes that are associated with the endpoint are deleted.

When you delete an interface endpoint, we delete its endpoint network interfaces.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcEndpointId.N**

The IDs of the VPC endpoints.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**unsuccessful**

Information about the VPC endpoints that were not successfully deleted.

Type: Array of UnsuccessfulItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes endpoint `vpce-aa22bb33`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpcEndpoints
&VpcEndpointId.1=vpce-aa22bb33
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVpcEndpointsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <unsuccessful/>
    <requestId>b59c2643-789a-4bf7-aac4-example</requestId>
</DeleteVpcEndpointsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVpcEndpointServiceConfigurations

Deletes the specified VPC endpoint service configurations. Before you can delete an endpoint service configuration, you must reject any `Available` or `PendingAcceptance` interface endpoint connections that are attached to the service.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ServiceId.N**

The IDs of the services.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**unsuccessful**

Information about the service configurations that were not deleted, if applicable.

Type: Array of UnsuccessfulItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes your VPC endpoint service configuration `vpce-svc-03d5ebb7d9579a2b3`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpcEndpointServiceConfigurations
ServiceId.1=vpce-svc-03d5ebb7d9579a2b3
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVpcEndpointServiceConfigurationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>12345d2e-a871-4375-9a93-f4188example</requestId>
    <unsuccessful/>
</DeleteVpcEndpointServiceConfigurations>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVpcPeeringConnection

Deletes a VPC peering connection. Either the owner of the requester VPC or the owner of the accepter VPC can delete the VPC peering connection if it's in the `active` state. The owner of the requester VPC can delete a VPC peering connection in the `pending-acceptance` state. You cannot delete a VPC peering connection that's in the `failed` or `rejected` state.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcPeeringConnectionId**

The ID of the VPC peering connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified VPC peering connection.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpcPeeringConnection
 &vpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpcPeeringConnectionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVpnConcentrator

Deletes the specified VPN concentrator.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpnConcentratorId**

The ID of the VPN concentrator to delete.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes VPN Concentrator `vcn-0767cb7521c5c4945`.

#### Sample Request

```
https://ec2.us-east-1.amazonaws.com/?Version=2016-11-15&Action=DeleteVpnConcentrator
&VpnConcentratorId=vcn-0767cb7521c5c4945
```

#### Sample Response

```
<DeleteVpnConcentratorResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>2912d285-2e87-4e3b-aa4b-80772cc5913b</requestId>
    <return>true</return>
</DeleteVpnConcentratorResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVpnConnection

Deletes the specified VPN connection.

If you're deleting the VPC and its associated components, we recommend that you detach the virtual private gateway from the VPC and delete the VPC before deleting the VPN connection. If you believe that the tunnel credentials for your VPN connection have been compromised, you can delete the VPN connection and create a new one that has new keys, without needing to delete the VPC or virtual private gateway. If you create a new VPN connection, you must reconfigure the customer gateway device using the new configuration information returned with the new VPN connection ID.

For certificate-based authentication, delete all AWS Certificate Manager (ACM) private certificates used for the AWS-side tunnel endpoints for the VPN connection before deleting the VPN connection.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpnConnectionId**

The ID of the VPN connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified VPN connection.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnection
&vpnConnectionId=vpn-44a8938f
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteVpnConnectionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVpnConnectionRoute

Deletes the specified static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DestinationCidrBlock**

The CIDR block associated with the local subnet of the customer network.

Type: String

Required: Yes

**VpnConnectionId**

The ID of the VPN connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes a static route to the destination CIDR block `11.12.0.0/16` associated with the VPN connection with the ID `vpn-83ad48ea`. Note that when using the Query API, the "/" is denoted as "%2F".

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
&VpnConnectionId=vpn-83ad48ea
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
    <return>true</return>
</DeleteVpnConnectionRouteResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeleteVpnGateway

Deletes the specified virtual private gateway. You must first detach the virtual private gateway from the VPC. Note that you don't need to delete the virtual private gateway if you plan to delete and recreate the VPN connection between your VPC and your network.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpnGatewayId**

The ID of the virtual private gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deletes the specified virtual private gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnGateway
&vpnGatewayId=vgw-8db04f81
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DeleteVpnGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeprovisionByoipCidr

Releases the specified address range that you provisioned for use with your AWS resources through bring your own IP addresses (BYOIP) and deletes the corresponding address pool.

Before you can release an address range, you must stop advertising it and you must not have any IP addresses allocated from its address range.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

The address range, in CIDR notation. The prefix must be the same prefix that you specified when you provisioned the address range.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**byoipCidr**

Information about the address range.

Type: ByoipCidr object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeprovisionIpamByoasn

Deprovisions your Autonomous System Number (ASN) from your AWS account. This action can only be called after any BYOIP CIDR associations are removed from your AWS account with DisassociateIpamByoasn. For more information, see Tutorial: Bring your ASN to IPAM in the *Amazon VPC IPAM guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Asn**

An ASN.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamId**

The IPAM ID.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**byoasn**

An ASN and BYOIP CIDR association.

Type: Byoasn object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeprovisionIpamPoolCidr

Deprovision a CIDR provisioned from an IPAM pool. If you deprovision a CIDR from a pool that has a source pool, the CIDR is recycled back into the source pool. For more information, see Deprovision pool CIDRs in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

The CIDR which you want to deprovision from the pool.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPoolId**

The ID of the pool that has the CIDR you want to deprovision.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamPoolCidr**

The deprovisioned pool CIDR.

Type: IpamPoolCidr object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeprovisionPublicIpv4PoolCidr

Deprovision a CIDR from a public IPv4 pool.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

The CIDR you want to deprovision from the pool.

Type: String

Required: Yes

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PoolId**

The ID of the pool that you want to deprovision the CIDR from.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**deprovisionedAddressSet**

The deprovisioned CIDRs.

Type: Array of strings

**poolId**

The ID of the pool that you deprovisioned the CIDR from.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeregisterImage

Deregisters the specified AMI. A deregistered AMI can't be used to launch new instances.

If a deregistered EBS-backed AMI matches a Recycle Bin retention rule, it moves to the Recycle Bin for the specified retention period. It can be restored before its retention period expires, after which it is permanently deleted. If the deregistered AMI doesn't match a retention rule, it is permanently deleted immediately. For more information, see Recover deleted Amazon EBS snapshots and EBS-backed AMIs with Recycle Bin in the *Amazon EBS User Guide*.

When deregistering an EBS-backed AMI, you can optionally delete its associated snapshots at the same time. However, if a snapshot is associated with multiple AMIs, it won't be deleted even if specified for deletion, although the AMI will still be deregistered.

Deregistering an AMI does not delete the following:

- Instances already launched from the AMI. You'll continue to incur usage costs for the instances until you terminate them.
- For EBS-backed AMIs: Snapshots that are associated with multiple AMIs. You'll continue to incur snapshot storage costs.
- For instance store-backed AMIs: The files uploaded to Amazon S3 during AMI creation. You'll continue to incur S3 storage costs.

For more information, see Deregister an Amazon EC2 AMI in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DeleteAssociatedSnapshots**

Specifies whether to delete the snapshots associated with the AMI during deregistration.

> **Note**
>
> If a snapshot is associated with multiple AMIs, it is not deleted, regardless of this setting.

Default: The snapshots are not deleted.

Type: Boolean

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**deleteSnapshotResultSet**

The deletion result for each snapshot associated with the AMI, including the snapshot ID and its success or error code.

Type: Array of DeleteSnapshotReturnCode objects

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example request deregisters the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeregisterImage
&ImageId=ami-4fa54026
&AUTHPARAMS
```

#### Sample Response

```
<DeregisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeregisterImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeregisterInstanceEventNotificationAttributes

Deregisters tag keys to prevent tags that have the specified tag keys from being included in scheduled event notifications for resources in the Region.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceTagAttribute**

Information about the tag keys to deregister.

Type: DeregisterInstanceTagAttributeRequest object

Required: No

## Response Elements

The following elements are returned by the service.

**instanceTagAttribute**

The resulting set of tag keys.

Type: InstanceTagNotificationAttribute object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeregisterTransitGatewayMulticastGroupMembers

Deregisters the specified members (network interfaces) from the transit gateway multicast group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupIpAddress**

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

**NetworkInterfaceIds.N**

The IDs of the group members' network interfaces.

Type: Array of strings

Required: No

**TransitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**deregisteredMulticastGroupMembers**

Information about the deregistered members.

Type: TransitGatewayMulticastDeregisteredGroupMembers object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example deregisters the network interface as a group member `eni-0e246d3269EXAMPLE` from the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DeregisterTransitGatewayMulticastGroupMembers
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&NetworkInterfaceIds=eni-0e246d3269EXAMPLE
&AUTHPARAMS
```

**Sample Response**

```
<DeregisterTransitGatewayMulticastGroupMembersResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>6f4167cd-0870-4858-8872-f1c34EXAMPLE</requestId>
    <registeredMulticastGroupMembers>
        <groupIpAddress>224.0.1.0</groupIpAddress>
```

```
        <registeredNetworkInterfaceIds>
            <item>eni-0e246d3269EXAMPLE</item>
        </registeredNetworkInterfaceIds>
        <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
    </registeredMulticastGroupMembers>
</DeregisterTransitGatewayMulticastGroupMembersResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DeregisterTransitGatewayMulticastGroupSources

Deregisters the specified sources (network interfaces) from the transit gateway multicast group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupIpAddress**

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

**NetworkInterfaceIds.N**

The IDs of the group sources' network interfaces.

Type: Array of strings

Required: No

**TransitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**deregisteredMulticastGroupSources**

Information about the deregistered group sources.

Type: TransitGatewayMulticastDeregisteredGroupSources object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example deregisters the network interface as a group source `eni-07f290fc3cEXAMPLE` from the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DeregisterTransitGatewayMulticastGroupSources
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&NetworkInterfaceIds=eni-07f290fc3cEXAMPLE
&AUTHPARAMS
```

**Sample Response**

```
<DeregisterTransitGatewayMulticastGroupSourcesResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>1ca916e8-a4b5-4ff8-9fc3-3052dEXAMPLE</requestId>
    <deregisteredMulticastGroupSources>
        <deregisteredNetworkInterfaceIds>
```

```
            <item>eni-07f290fc3cEXAMPLE</item>
        </deregisteredNetworkInterfaceIds>
        <groupIpAddress>224.0.1.0</groupIpAddress>
        <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
    </deregisteredMulticastGroupSources>
</DeregisterTransitGatewayMulticastGroupSourcesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeAccountAttributes

Describes attributes of your AWS account. The following are the supported account attributes:

- `default-vpc`: The ID of the default VPC for your account, or none.
- `max-instances`: This attribute is no longer supported. The returned value does not reflect your actual vCPU limit for running On-Demand Instances. For more information, see On-Demand Instance Limits in the *Amazon Elastic Compute Cloud User Guide*.
- `max-elastic-ips`: The maximum number of Elastic IP addresses that you can allocate.
- `supported-platforms`: This attribute is deprecated.
- `vpc-max-elastic-ips`: The maximum number of Elastic IP addresses that you can allocate.
- `vpc-max-security-groups-per-interface`: The maximum number of security groups that you can assign to a network interface.

> **Note**
>
> The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AttributeName.N**

The account attribute names.

Type: Array of strings

Valid Values: `supported-platforms | default-vpc`

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**accountAttributeSet**

Information about the account attributes.

Type: Array of AccountAttribute objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeAddresses

Describes the specified Elastic IP addresses or all of your Elastic IP addresses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationId.N**

Information about the allocation IDs.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

- `allocation-id` - The allocation ID for the address.
- `association-id` - The association ID for the address.
- `instance-id` - The ID of the instance the address is associated with, if any.
- `network-border-group` - A unique set of Availability Zones, Local Zones, or Wavelength Zones from where AWS advertises IP addresses.
- `network-interface-id` - The ID of the network interface that the address is associated with, if any.
- `network-interface-owner-id` - The AWS account ID of the owner.
- `private-ip-address` - The private IP address associated with the Elastic IP address.

- `public-ip` - The Elastic IP address, or the carrier IP address.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**PublicIp.N**

One or more Elastic IP addresses.

Default: Describes all your Elastic IP addresses.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**addressesSet**

Information about the Elastic IP addresses.

Type: Array of Address objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example request describes a specific Elastic IP address allocated to your account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&AllocationId.1= eipalloc-08229861
&AUTHPARAMS
```

### Sample Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
   <addressesSet>
     <item>
       <publicIp>203.0.113.41</publicIp>
       <allocationId>eipalloc-08229861</allocationId>
       <domain>vpc</domain>
       <instanceId>i-0598c7d356eba48d7</instanceId>
       <associationId>eipassoc-f0229899</associationId>
       <networkInterfaceId>eni-ef229886</networkInterfaceId>
       <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
       <privateIpAddress>10.0.0.228</privateIpAddress>
     </item>
   </addressesSet>
</DescribeAddressesResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeAddressesAttribute

Describes the attributes of the specified Elastic IP addresses. For requirements, see Using reverse DNS for email applications.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationId.N**

[EC2-VPC] The allocation IDs.

Type: Array of strings

Required: No

**Attribute**

The attribute of the IP address.

Type: String

Valid Values: `domain-name`

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**addressSet**

Information about the IP addresses.

Type: Array of AddressAttribute objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeAddressTransfers

Describes an Elastic IP address transfer. For more information, see Transfer Elastic IP addresses in the *Amazon VPC User Guide*.

When you transfer an Elastic IP address, there is a two-step handshake between the source and transfer AWS accounts. When the source account starts the transfer, the transfer account has seven days to accept the Elastic IP address transfer. During those seven days, the source account can view the pending transfer by using this action. After seven days, the transfer expires and ownership of the Elastic IP address returns to the source account. Accepted transfers are visible to the source account for 14 days after the transfers have been accepted.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationId.N**

The allocation IDs of Elastic IP addresses.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of address transfers to return in one page of results.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

Specify the pagination token from a previous request to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**addressTransferSet**

The Elastic IP address transfer.

Type: Array of AddressTransfer objects

**nextToken**

Specify the pagination token from a previous request to retrieve the next page of results.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeAggregateIdFormat

Describes the longer ID format settings for all resource types in a specific Region. This request is useful for performing a quick audit to determine whether a specific Region is fully opted in for longer IDs (17-character IDs).

This request only returns information about resource types that support longer IDs.

The following resource types support longer IDs: `bundle` | `conversion-task` | `customer-gateway` | `dhcp-options` | `elastic-ip-allocation` | `elastic-ip-association` | `export-task` | `flow-log` | `image` | `import-task` | `instance` | `internet-gateway` | `network-acl` | `network-acl-association` | `network-interface` | `network-interface-attachment` | `prefix-list` | `reservation` | `route-table` | `route-table-association` | `security-group` | `snapshot` | `subnet` | `subnet-cidr-block-association` | `volume` | `vpc` | `vpc-cidr-block-association` | `vpc-endpoint` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway`.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**statusSet**

Information about each resource's ID format.

Type: Array of IdFormat objects

**useLongIdsAggregated**

Indicates whether all resource types in the Region are configured to use longer IDs. This value is only `true` if all users are configured to use longer IDs for all resources types in the Region.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the overall ID format settings for the default Region.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAggregateIdFormat
&AUTHPARAMS
```

#### Sample Response

```
<DescribeAggregateIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <useLongIdsAggregated>true</useLongIdsAggregated>
    <statusSet>
        <item>
            <resource>security-group</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>route-table-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
```

```
            <resource>vpc</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>flow-log</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpc-peering-connection</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>elastic-ip-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpc-cidr-block-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-interface</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>subnet</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <deadline>2016-12-15T14:00:00.000Z</deadline>
            <resource>volume</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpc-ipv6-cidr-block-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-acl-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>dhcp-options</resource>
            <useLongIds>true</useLongIds>
        </item>
```

```
        <item>
            <deadline>2016-12-15T14:00:00.000Z</deadline>
            <resource>snapshot</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>subnet-ipv6-cidr-block-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-interface-attachment</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>elastic-ip-allocation</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>internet-gateway</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <deadline>2016-12-15T14:00:00.000Z</deadline>
            <resource>reservation</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <deadline>2016-12-15T14:00:00.000Z</deadline>
            <resource>instance</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>route-table</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-acl</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>customer-gateway</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
```

```
            <resource>vpc-endpoint</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpn-connection</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpn-gateway</resource>
            <useLongIds>true</useLongIds>
        </item>
    </statusSet>
</DescribeAggregateIdFormatResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeAvailabilityZones

Describes the Availability Zones, Local Zones, and Wavelength Zones that are available to you.

For more information about Availability Zones, Local Zones, and Wavelength Zones, see Regions and zones in the *Amazon EC2 User Guide*.

> **Note**
>
> The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllAvailabilityZones**

Include all Availability Zones, Local Zones, and Wavelength Zones regardless of your opt-in status.

If you do not use this parameter, the results include only the zones for the Regions where you have chosen the option to opt in.

Type: Boolean

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `group-long-name` - The long name of the zone group for the Availability Zone (for example, `US West (Oregon) 1`), the Local Zone (for example, for Zone group `us-west-2-lax-1`, it is `US West (Los Angeles)`, or the Wavelength Zone (for example, for Zone group `us-east-1-wl1`, it is `US East (Verizon)`.
- `group-name` - The name of the zone group for the Availability Zone (for example, `us-east-1-zg-1`), the Local Zone (for example, `us-west-2-lax-1`), or the Wavelength Zone (for example, `us-east-1-wl1`).
- `message` - The Zone message.
- `opt-in-status` - The opt-in status (`opted-in` | `not-opted-in` | `opt-in-not-required`).
- `parent-zone-id` - The ID of the zone that handles some of the Local Zone and Wavelength Zone control plane operations, such as API calls.
- `parent-zone-name` - The ID of the zone that handles some of the Local Zone and Wavelength Zone control plane operations, such as API calls.
- `region-name` - The name of the Region for the Zone (for example, `us-east-1`).
- `state` - The state of the Availability Zone, the Local Zone, or the Wavelength Zone (`available` | `unavailable` | `constrained`).
- `zone-id` - The ID of the Availability Zone (for example, `use1-az1`), the Local Zone (for example, `usw2-lax1-az1`), or the Wavelength Zone (for example, `us-east-1-wl1-bos-wlz-1`).
- `zone-name` - The name of the Availability Zone (for example, `us-east-1a`), the Local Zone (for example, `us-west-2-lax-1a`), or the Wavelength Zone (for example, `us-east-1-wl1-bos-wlz-1`).
- `zone-type` - The type of zone (`availability-zone` | `local-zone` | `wavelength-zone`).

Type: Array of Filter objects

Required: No

**ZoneId.N**

The IDs of the Availability Zones, Local Zones, and Wavelength Zones.

Type: Array of strings

Required: No

**ZoneName.N**

The names of the Availability Zones, Local Zones, and Wavelength Zones.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**availabilityZoneInfo**

Information about the Availability Zones, Local Zones, and Wavelength Zones.

Type: Array of AvailabilityZone objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example request describes the zones in the current Region that are enabled for your account.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DescribeAvailabilityZones
&AUTHPARAMS
```

**Sample Response**

```
<DescribeAvailabilityZonesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>e23c5a54-a29c-43ee-8b55-0c13c26e9e01</requestId>
```

```
    <availabilityZoneInfo>
        <item>
            <groupName>us-west-2-zg-1</groupName>
            <optInStatus>opt-in-not-required</optInStatus>
            <zoneName>us-west-2a</zoneName>
            <zoneId>usw2-az1</zoneId>
            <zoneState>available</zoneState>
            <zoneType>availability-zone</zoneType>
            <regionName>us-west-2</regionName>
            <messageSet/>
            <networkBorderGroup>us-west-2</networkBorderGroup>
            <groupLongName>US West (Oregon) 1</groupLongName>
            <geographySet>
                <item>
                    <name>United States of America</name>
                </item>
            </geographySet>
            <subGeographySet>
                <item>
                    <name>Oregon</name>
                </item>
            </subGeographySet>
        </item>
        <item>
            <groupName>us-west-2-zg-1</groupName>
            <optInStatus>opt-in-not-required</optInStatus>
            <zoneName>us-west-2b</zoneName>
            <zoneId>usw2-az2</zoneId>
            <zoneState>available</zoneState>
            <zoneType>availability-zone</zoneType>
            <regionName>us-west-2</regionName>
            <messageSet/>
            <networkBorderGroup>us-west-2</networkBorderGroup>
            <groupLongName>US West (Oregon) 1</groupLongName>
            <geographySet>
                <item>
                    <name>United States of America</name>
                </item>
            </geographySet>
            <subGeographySet>
                <item>
                    <name>Oregon</name>
                </item>
            </subGeographySet>
```

```
        </item>
        <item>
            <groupName>us-west-2-zg-1</groupName>
            <optInStatus>opt-in-not-required</optInStatus>
            <zoneName>us-west-2c</zoneName>
            <zoneId>usw2-az3</zoneId>
            <zoneState>available</zoneState>
            <zoneType>availability-zone</zoneType>
            <regionName>us-west-2</regionName>
            <messageSet/>
            <networkBorderGroup>us-west-2</networkBorderGroup>
            <groupLongName>US West (Oregon) 1</groupLongName>
            <geographySet>
                <item>
                    <name>United States of America</name>
                </item>
            </geographySet>
            <subGeographySet>
                <item>
                    <name>Oregon</name>
                </item>
            </subGeographySet>
        </item>
        <item>
            <groupName>us-west-2-zg-1</groupName>
            <optInStatus>opt-in-not-required</optInStatus>
            <zoneName>us-west-2d</zoneName>
            <zoneId>usw2-az4</zoneId>
            <zoneState>available</zoneState>
            <zoneType>availability-zone</zoneType>
            <regionName>us-west-2</regionName>
            <messageSet/>
            <networkBorderGroup>us-west-2</networkBorderGroup>
            <groupLongName>US West (Oregon) 1</groupLongName>
            <geographySet>
                <item>
                    <name>United States of America</name>
                </item>
            </geographySet>
            <subGeographySet>
                <item>
                    <name>Oregon</name>
                </item>
            </subGeographySet>
```

```
        </item>
    </availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeAwsNetworkPerformanceMetricSubscriptions

Describes the current Infrastructure Performance metric subscriptions.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 100.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**subscriptionSet**

Describes the current Infrastructure Performance subscriptions.

Type: Array of Subscription objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeBundleTasks

Describes the specified bundle tasks or all of your bundle tasks.

> **Note**
>
> Completed bundle tasks are listed for only a limited time. If your bundle task is no longer in the list, you can still register an AMI from it. Just use `RegisterImage` with the Amazon S3 bucket name and image manifest name you provided to the bundle task.

> **Note**
>
> The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**BundleId.N**

The bundle task IDs.

Default: Describes all your bundle tasks.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `bundle-id` - The ID of the bundle task.
- `error-code` - If the task failed, the error code returned.
- `error-message` - If the task failed, the error message returned.
- `instance-id` - The ID of the instance.
- `progress` - The level of task completion, as a percentage (for example, 20%).
- `s3-bucket` - The Amazon S3 bucket to store the AMI.
- `s3-prefix` - The beginning of the AMI name.
- `start-time` - The time the task started (for example, 2013-09-15T17:15:20.000Z).
- `state` - The state of the task (`pending` | `waiting-for-shutdown` | `bundling` | `storing` | `cancelling` | `complete` | `failed`).
- `update-time` - The time of the most recent update for the task.

Type: Array of Filter objects

Required: No

## Response Elements

The following elements are returned by the service.

**bundleInstanceTasksSet**

Information about the bundle tasks.

Type: Array of BundleTask objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example describes the status of the specified bundle task.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&bundleId.1=bun-c1a540a8
&AUTHPARAMS
```

### Sample Response

```
<DescribeBundleTasksResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <bundleInstanceTasksSet>
      <item>
         <instanceId>i-1234567890abcdef0</instanceId>
         <bundleId>bun-c1a540a8</bundleId>
         <state>cancelling</state>
         <startTime>2008-10-07T11:41:50.000Z</startTime>
         <updateTime>2008-10-07T11:51:50.000Z</updateTime>
         <storage>
            <S3>
               <bucket>myawsbucket</bucket>
               <prefix>winami</prefix>
            </S3>
         </storage>
         <progress>20%</progress>
      </item>
   <bundleInstanceTasksSet>
</DescribeBundleTasksResponse>
```

## Example 2

This example filters the response to include only bundle tasks whose state is either `complete` or `failed`, and in addition are targeted for the Amazon S3 bucket named `myawsbucket`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
```

```
&Filter.1.Name=s3-bucket
&Filter.1.Value.1=myawsbucket
&Filter.2.Name=state
&Filter.2.Name.1=complete
&Filter.2.Name.2=failed
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeByoipCidrs

Describes the IP address ranges that were provisioned for use with AWS resources through through bring your own IP addresses (BYOIP).

To describe the address pools that were created when you provisioned the address ranges, use DescribePublicIpv4Pools or DescribeIpv6Pools.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: Yes

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**byoipCidrSet**

Information about your address ranges.

Type: Array of ByoipCidr objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCapacityBlockExtensionHistory

Describes the events for the specified Capacity Block extension during the specified time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId.N**

The IDs of Capacity Block reservations that you want to display the history for.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters

- `availability-zone` - The Availability Zone of the extension.
- `availability-zone-id` - The Availability Zone ID of the extension.
- `capacity-block-extension-offering-id` - The ID of the extension offering.
- `capacity-block-extension-status` - The status of the extension (`payment-pending` | `payment-failed` | `payment-succeeded`).
- `capacity-reservation-id` - The reservation ID of the extension.
- `instance-type` - The instance type of the extension.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityBlockExtensionSet**

Describes one or more of your Capacity Block extensions. The results describe only the Capacity Block extensions in the AWS Region that you're currently using.

Type: Array of CapacityBlockExtension objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCapacityBlockExtensionOfferings

Describes Capacity Block extension offerings available for purchase in the AWS Region that you're currently using.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityBlockExtensionDurationHours**

The duration of the Capacity Block extension offering in hours.

Type: Integer

Required: Yes

**CapacityReservationId**

The ID of the Capacity reservation to be extended.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityBlockExtensionOfferingSet**

The recommended Capacity Block extension offerings for the dates specified.

Type: Array of CapacityBlockExtensionOffering objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCapacityBlockOfferings

Describes Capacity Block offerings available for purchase in the AWS Region that you're currently using. With Capacity Blocks, you can purchase a specific GPU instance type or EC2 UltraServer for a period of time.

To search for an available Capacity Block offering, you specify a reservation duration and instance count.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllAvailabilityZones**

Include all Availability Zones and Local Zones, regardless of your opt-in status. If you do not use this parameter, the results include available offerings from all Availability Zones in the AWS Region and Local Zones you are opted into.

Type: Boolean

Required: No

**CapacityDurationHours**

The reservation duration for the Capacity Block, in hours. You must specify the duration in 1-day increments up 14 days, and in 7-day increments up to 182 days.

Type: Integer

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndDateRange**

The latest end date for the Capacity Block offering.

Type: Timestamp

Required: No

**InstanceCount**

The number of instances for which to reserve capacity. Each Capacity Block can have up to 64 instances, and you can have up to 256 instances across Capacity Blocks.

Type: Integer

Required: No

**InstanceType**

The type of instance for which the Capacity Block offering reserves capacity.

Type: String

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

**StartDateRange**

The earliest start date for the Capacity Block offering.

Type: Timestamp

Required: No

**UltraserverCount**

The number of EC2 UltraServers in the offerings.

Type: Integer

Required: No

**UltraserverType**

The EC2 UltraServer type of the Capacity Block offerings.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityBlockOfferingSet**

The recommended Capacity Block offering for the dates specified.

Type: Array of CapacityBlockOffering objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCapacityBlocks

Describes details about Capacity Blocks in the AWS Region that you're currently using.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityBlockId.N**

The IDs of the Capacity Blocks.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `capacity-block-id` - The ID of the Capacity Block.
- `ultraserver-type` - The Capacity Block type. The type can be `instances` or `ultraservers`.
- `availability-zone` - The Availability Zone of the Capacity Block.
- `start-date` - The date and time at which the Capacity Block was started.
- `end-date` - The date and time at which the Capacity Block expires. When a Capacity Block expires, all instances in the Capacity Block are terminated.
- `create-date` - The date and time at which the Capacity Block was created.
- `state` - The state of the Capacity Block (`active` | `expired` | `unavailable` | `cancelled` | `failed` | `scheduled` | `payment-pending` | `payment-failed`).

- `tags` - The tags assigned to the Capacity Block.

  Type: Array of Filter objects

  Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityBlockSet**

The Capacity Blocks.

Type: Array of CapacityBlock objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCapacityBlockStatus

Describes the availability of capacity for the specified Capacity blocks, or all of your Capacity Blocks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityBlockId.N**

The ID of the Capacity Block.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `interconnect-status` - The status of the interconnect for the Capacity Block (ok | `impaired` | `insufficient-data`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityBlockStatusSet**

The availability of capacity for a Capacity Block.

Type: Array of CapacityBlockStatus objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCapacityManagerDataExports

Describes one or more Capacity Manager data export configurations. Returns information about export settings, delivery status, and recent export activity.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityManagerDataExportId.N**

The IDs of the data export configurations to describe. If not specified, all export configurations are returned.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to narrow the results. Supported filters include export status, creation date, and S3 bucket name.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return in a single call. If not specified, up to 1000 results are returned.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results. Use this value in a subsequent call to retrieve additional results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityManagerDataExportSet**

Information about the data export configurations, including export settings, delivery status, and recent activity.

Type: Array of CapacityManagerDataExportResponse objects

**nextToken**

The token to use to retrieve the next page of results. This value is null when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes a specific data export configuration.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeCapacityManagerDataExports
&CapacityManagerDataExportId.1=cmde-0abcd1234EXAMPLE
&AUTHPARAMS
```

### Sample Response

```
<DescribeCapacityManagerDataExportsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <capacityManagerDataExportSet>
        <item>
            <capacityManagerDataExportId>cmde-0abcd1234EXAMPLE</
capacityManagerDataExportId>
            <s3BucketName>my-capacity-exports-bucket</s3BucketName>
            <s3BucketPrefix>capacity-data/</s3BucketPrefix>
            <schedule>hourly</schedule>
            <outputFormat>parquet</outputFormat>
            <createTime>2024-01-15T10:30:00.000Z</createTime>
            <latestDeliveryStatus>delivered</latestDeliveryStatus>
            <latestDeliveryTime>2024-01-16T02:00:00.000Z</latestDeliveryTime>
            <latestDeliveryS3LocationUri>s3://my-capacity-exports-bucket/capacity-
data/20240116.parquet</latestDeliveryS3LocationUri>
        </item>
    </capacityManagerDataExportSet>
</DescribeCapacityManagerDataExportsResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCapacityReservationBillingRequests

Describes a request to assign the billing of the unused capacity of a Capacity Reservation. For more information, see Billing assignment for shared Amazon EC2 Capacity Reservations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId.N**

The ID of the Capacity Reservation.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `status` - The state of the request (`pending` | `accepted` | `rejected` | `cancelled` | `revoked` | `expired`).
- `requested-by` - The account ID of the Capacity Reservation owner that initiated the request. Not supported if you specify `requested-by` for **Role**.
- `unused-reservation-billing-owner` - The ID of the consumer account to which the request was sent. Not supported if you specify `unused-reservation-billing-owner` for **Role**.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

**Role**

Specify one of the following:

- `odcr-owner` - If you are the Capacity Reservation owner, specify this value to view requests that you have initiated. Not supported with the `requested-by` filter.
- `unused-reservation-billing-owner` - If you are the consumer account, specify this value to view requests that have been sent to you. Not supported with the `unused-reservation-billing-owner` filter.

Type: String

Valid Values: `odcr-owner | unused-reservation-billing-owner`

Required: Yes

## Response Elements

The following elements are returned by the service.

**capacityReservationBillingRequestSet**

Information about the request.

Type: Array of CapacityReservationBillingRequest objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCapacityReservationCancellationQuotes

Describes one or more Capacity Reservation cancellation quotes. The results describe only the quotes that you have previously generated by using the `CreateCapacityReservationCancellationQuote` action.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationCancellationQuoteId.N**

The IDs of the cancellation quotes to describe.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityReservationCancellationQuoteSet**

Information about the Capacity Reservation cancellation quotes.

Type: Array of CapacityReservationCancellationQuote objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCapacityReservationFleets

Describes one or more Capacity Reservation Fleets.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationFleetId.N**

The IDs of the Capacity Reservation Fleets to describe.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `state` - The state of the Fleet (`submitted` | `modifying` | `active` | `partially_fulfilled` | `expiring` | `expired` | `cancelling` | `cancelled` | `failed`).
- `instance-match-criteria` - The instance matching criteria for the Fleet. Only open is supported.
- `tenancy` - The tenancy of the Fleet (`default` | `dedicated`).
- `allocation-strategy` - The allocation strategy used by the Fleet. Only `prioritized` is supported.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityReservationFleetSet**

Information about the Capacity Reservation Fleets.

Type: Array of CapacityReservationFleet objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCapacityReservations

Describes one or more of your Capacity Reservations. The results describe only the Capacity Reservations in the AWS Region that you're currently using.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId.N**

The ID of the Capacity Reservation.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `instance-type` - The type of instance for which the Capacity Reservation reserves capacity.
- `owner-id` - The ID of the AWS account that owns the Capacity Reservation.
- `instance-platform` - The type of operating system for which the Capacity Reservation reserves capacity.
- `availability-zone` - The Availability Zone of the Capacity Reservation.
- `tenancy` - Indicates the tenancy of the Capacity Reservation. A Capacity Reservation can have one of the following tenancy settings:
  - `default` - The Capacity Reservation is created on hardware that is shared with other AWS accounts.

  - `dedicated` - The Capacity Reservation is created on single-tenant hardware that is dedicated to a single AWS account.
- `outpost-arn` - The Amazon Resource Name (ARN) of the Outpost on which the Capacity Reservation was created.
- `state` - The current state of the Capacity Reservation. A Capacity Reservation can be in one of the following states:
  - `active`- The Capacity Reservation is active and the capacity is available for your use.
  - `expired` - The Capacity Reservation expired automatically at the date and time specified in your request. The reserved capacity is no longer available for your use.
  - `cancelled` - The Capacity Reservation was cancelled. The reserved capacity is no longer available for your use.
  - `pending` - The Capacity Reservation request was successful but the capacity provisioning is still pending.
  - `failed` - The Capacity Reservation request has failed. A request might fail due to invalid request parameters, capacity constraints, or instance limit constraints. Failed requests are retained for 60 minutes.
- `start-date` - The date and time at which the Capacity Reservation was started.
- `end-date` - The date and time at which the Capacity Reservation expires. When a Capacity Reservation expires, the reserved capacity is released and you can no longer launch instances into it. The Capacity Reservation's state changes to expired when it reaches its end date and time.
- `end-date-type` - Indicates the way in which the Capacity Reservation ends. A Capacity Reservation can have one of the following end types:
  - `unlimited` - The Capacity Reservation remains active until you explicitly cancel it.
  - `limited` - The Capacity Reservation expires automatically at a specified date and time.
- `instance-match-criteria` - Indicates the type of instance launches that the Capacity Reservation accepts. The options include:
  - `open` - The Capacity Reservation accepts all instances that have matching attributes (instance type, platform, and Availability Zone). Instances that have matching attributes launch into the Capacity Reservation automatically without specifying any additional parameters.

- `targeted` - The Capacity Reservation only accepts instances that have matching attributes (instance type, platform, and Availability Zone), and explicitly target the Capacity Reservation. This ensures that only permitted instances can use the reserved capacity.
- `placement-group-arn` - The ARN of the cluster placement group in which the Capacity Reservation was created.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityReservationSet**

Information about the Capacity Reservations.

Type: Array of CapacityReservation objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCapacityReservationTopology

Describes a tree-based hierarchy that represents the physical host placement of your pending or active Capacity Reservations within an Availability Zone or Local Zone. You can use this information to determine the relative proximity of your capacity within the AWS network before it is launched and use this information to allocate capacity together to support your tightly coupled workloads.

Capacity Reservation topology is supported for specific instance types only. For more information, see Prerequisites for Amazon EC2 instance topology in the *Amazon EC2 User Guide*.

> **Note**
>
> The Amazon EC2 API follows an eventual consistency model due to the distributed nature of the system supporting it. As a result, when you call the DescribeCapacityReservationTopology API command immediately after launching instances, the response might return a `null` value for `capacityBlockId` because the data might not have fully propagated across all subsystems. For more information, see Eventual consistency in the Amazon EC2 API in the *Amazon EC2 Developer Guide*.

For more information, see Amazon EC2 topology in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId.N**

The Capacity Reservation IDs.

Default: Describes all your Capacity Reservations.

Constraints: Maximum 100 explicitly specified Capacity Reservation IDs.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `availability-zone` - The name of the Availability Zone (for example, `us-west-2a`) or Local Zone (for example, `us-west-2-lax-1b`) that the Capacity Reservation is in.
- `instance-type` - The instance type (for example, `p4d.24xlarge`) or instance family (for example, `p4d*`). You can use the `*` wildcard to match zero or more characters, or the `?` wildcard to match zero or one character.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

You can't specify this parameter and the Capacity Reservation IDs parameter in the same request.

Default: `10`

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 10.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityReservationSet**

Information about the topology of each Capacity Reservation.

Type: Array of CapacityReservationTopology objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCarrierGateways

Describes one or more of your carrier gateways.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CarrierGatewayId.N**

One or more carrier gateway IDs.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `carrier-gateway-id` - The ID of the carrier gateway.
- `state` - The state of the carrier gateway (`pending` | `failed` | `available` | `deleting` | `deleted`).
- `owner-id` - The AWS account ID of the owner of the carrier gateway.
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

- `vpc-id` - The ID of the VPC associated with the carrier gateway.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**carrierGatewaySet**

Information about the carrier gateway.

Type: Array of CarrierGateway objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeClassicLinkInstances

> **Note**
>
> This action is deprecated.

Describes your linked EC2-Classic instances. This request only returns information about EC2-Classic instances linked to a VPC through ClassicLink. You cannot use this request to return information about other instances.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `group-id` - The ID of a VPC security group that's associated with the instance.
- `instance-id` - The ID of the instance.
- `tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC to which the instance is linked.

Type: Array of Filter objects

Required: No

**InstanceId.N**

The instance IDs. Must be instances linked to a VPC through ClassicLink.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Constraint: If the value is greater than 1000, we return only 1000 items.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**instancesSet**

Information about one or more linked EC2-Classic instances.

Type: Array of ClassicLinkInstance objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeClientVpnAuthorizationRules

Describes the authorization rules for a specified Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

- `description` - The description of the authorization rule.
- `destination-cidr` - The CIDR of the network to which the authorization rule applies.
- `group-id` - The ID of the Active Directory group to which the authorization rule grants access.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the nextToken value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**authorizationRule**

Information about the authorization rules.

Type: Array of AuthorizationRule objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes the authorization rules for a specific Client VPN endpoint.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClientVpnAuthorizationRules
&ClientVpnEndpointId.1=cvpn-endpoint-EXAMPLEc8db8d3536
&AUTHPARAMS
```

### Sample Response

```
<DescribeClientVpnAuthorizationRulesResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>9d5c69db-763e-4b63-88ee-EXAMPLE</requestId>
    <authorizationRule>
        <item>
            <accessAll>true</accessAll>
            <description>auth-rule-one</description>
            <destinationCidr>10.0.0.0/16</destinationCidr>
            <clientVpnEndpointId>cvpn-endpoint-EXAMPLEc8db8d3536</clientVpnEndpointId>
            <groupId/>
            <status>
                <code>active</code>
            </status>
        </item>
    </authorizationRule>
</DescribeClientVpnAuthorizationRulesResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeClientVpnConnections

Describes active client connections and connections that have been terminated within the last 60 minutes for the specified Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

- `connection-id` - The ID of the connection.
- `username` - For Active Directory client authentication, the user name of the client who established the client connection.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the nextToken value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**connections**

Information about the active and terminated client connections.

Type: Array of ClientVpnConnection objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes Client VPN endpoint connections.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClientVpnConnections
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&TargetNetworkCidr=10.0.0.0/16
&RevokeAllGroups=true
&AUTHPARAMS
```

### Sample Response

```
<DescribeClientVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>7263df00-d3ed-4f32-a3b9-88177EXAMPLE</requestId>
    <connections>
        <item>
            <clientIp>11.0.0.98</clientIp>
            <commonName>client1</commonName>
            <connectionEndTime>2018-12-13 18:38:10</connectionEndTime>
            <connectionEstablishedTime>2018-12-13 18:32:49</connectionEstablishedTime>
            <connectionId>cvpn-connection-010b1282b7EXAMPLE</connectionId>
            <egressBytes>14891</egressBytes>
            <egressPackets>309</egressPackets>
            <clientVpnEndpointId>cvpn-endpoint-00c5d11fc4EXAMPLE</clientVpnEndpointId>
            <ingressBytes>14947</ingressBytes>
            <ingressPackets>285</ingressPackets>
            <status>
                <code>terminated</code>
            </status>
            <timestamp>2018-12-13 18:38:10</timestamp>
        </item>
    </connections>
</DescribeClientVpnConnectionsResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeClientVpnEndpoints

Describes one or more Client VPN endpoints in the account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientVpnEndpointId.N**

The ID of the Client VPN endpoint.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

- `endpoint-id` - The ID of the Client VPN endpoint.
- `transport-protocol` - The transport protocol (`tcp` | `udp`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the nextToken value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**clientVpnEndpoint**

Information about the Client VPN endpoints.

Type: Array of ClientVpnEndpoint objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the Client VPN endpoints in your account.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClientVpnEndpointsResponse
&AUTHPARAMS
```

## Sample Response

```
<DescribeClientVpnEndpointsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/"">
 <requestId">e69f64d5-e763-4cf5-844e-c278b1946ddf</requestId">
 <clientVpnEndpoint">
  <item">
   <authenticationOptions">
    <item">
     <mutualAuthentication">
      <clientRootCertificateChain">arn:aws:acm:us-
east-1:724145273726:certificate/82916b3c-7449-43cf-ab9e-31c18ef401c6</
clientRootCertificateChain">
     </mutualAuthentication">
     <type">certificate-authentication</type">
    </item">
   </authenticationOptions">
   <clientCidrBlock">10.0.0.0/24</clientCidrBlock">
   <connectionLogOptions">
    <Enabled">false</Enabled">
   </connectionLogOptions">
   <creationTime">2018-12-11T13:14:10</creationTime">
   <description">ash-test</description">
   <dnsName">cvpn-endpoint-0043a94c5c27c7997.prod.clientvpn.us-east-1.amazonaws.com</
dnsName">
   <clientVpnEndpointId">cvpn-endpoint-0043a94c5c27c7997</clientVpnEndpointId">
   <status">
    <code">pending-associate</code">
   </status">
   <serverCertificateArn">arn:aws:acm:us-
east-1:724145273726:certificate/82916b3c-7449-43cf-ab9e-31c18ef401c6</
serverCertificateArn">
   <splitTunnel">false</splitTunnel">
   <transportProtocol">tcp</transportProtocol">
   <vpnProtocol">openvpn</vpnProtocol">
  <item">
 </clientVpnEndpoint">
</DescribeClientVpnEndpointsResponse">
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeClientVpnRoutes

Describes the routes for the specified Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

- `destination-cidr` - The CIDR of the route destination.
- `origin` - How the route was associated with the Client VPN endpoint (`associate` | `add-route`).
- `target-subnet` - The ID of the subnet through which traffic is routed.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the nextToken value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**routes**

Information about the Client VPN endpoint routes.

Type: Array of ClientVpnRoute objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes the routes for a specific Client VPN endpoint.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClientVpnRoutes
&ClientVpnEndpointId.1=cvpn-endpoint-EXAMPLEc8db8d3536
&AUTHPARAMS
```

### Sample Response

```
<DescribeClientVpnRoutesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>08fb643f-4d8f-443b-b853-EXAMPLE9cc8c</requestId>
    <routes>
        <item>
            <destinationCidr>10.0.0.0/16</destinationCidr>
            <clientVpnEndpointId>cvpn-endpoint-EXAMPLEc8db8d3536</clientVpnEndpointId>
            <origin>associate</origin>
            <status>
                <code>active</code>
            </status>
            <targetSubnet>subnet-EXAMPLE18f440ab91</targetSubnet>
            <type>Nat</type>
        </item>
        <item>
            <destinationCidr>10.0.1.128/28</destinationCidr>
            <clientVpnEndpointId>cvpn-endpoint-EXAMPLEc8db8d3536</clientVpnEndpointId>
            <origin>add-route</origin>
            <status>
                <code>active</code>
            </status>
            <targetSubnet>EXAMPLE18f440ab91</targetSubnet>
            <type>Nat</type>
        </item>
    </routes>
</DescribeClientVpnRoutesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeClientVpnTargetNetworks

Describes the target networks associated with the specified Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationIds.N**

The IDs of the target network associations.

Type: Array of strings

Required: No

**ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

- `association-id` - The ID of the association.
- `target-network-id` - The ID of the subnet specified as the target network.
- `vpc-id` - The ID of the VPC in which the target network is located.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the nextToken value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**clientVpnTargetNetworks**

Information about the associated target networks.

Type: Array of TargetNetwork objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the target networks associated with a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClientVpnTargetNetworks
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DescribeClientVpnTargetNetworksResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>1f92d56a-4494-4cbe-ad85-d9387EXAMPLE</requestId>
    <clientVpnTargetNetworks>
        <item>
            <associationId>cvpn-assoc-0822b0983cEXAMPLE</associationId>
            <clientVpnEndpointId>cvpn-endpoint-00c5d11fc4EXAMPLE</clientVpnEndpointId>
            <targetNetworkId>subnet-057fa0918fEXAMPLE</targetNetworkId>
            <securityGroups>
                <item>sg-123456EXAMPLE</item>
            </securityGroups>
            <status>
                <code>associated</code>
            </status>
            <vpcId>vpc-3db97056EXAMPLE</vpcId>
        </item>
    </clientVpnTargetNetworks>
</DescribeClientVpnTargetNetworksRespons>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCoipPools

Describes the specified customer-owned address pools or all of your customer-owned address pools.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `coip-pool.local-gateway-route-table-id` - The ID of the local gateway route table.
- `coip-pool.pool-id` - The ID of the address pool.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**PoolId.N**

The IDs of the address pools.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**coipPoolSet**

Information about the address pools.

Type: Array of CoipPool objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeConversionTasks

Describes the specified conversion tasks or all your conversion tasks. For more information, see the VM Import/Export User Guide.

For information about the import manifest referenced by this API action, see VM Import Manifest.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ConversionTaskId.N**

The conversion task IDs.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**conversionTasks**

Information about the conversion tasks.

Type: Array of ConversionTask objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all your conversion tasks.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeConversionTasks
&AUTHPARAMS
```

#### Sample Response

```
<DescribeConversionTasksResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <conversionTasks>
     <item>
        <conversionTask>
           <conversionTaskId>import-i-fh95npoc</conversionTaskId>
           <expirationTime>2010-12-22T12:01Z</expirationTime>
           <importVolume>
              <bytesConverted>1000</bytesConverted>
              <availabilityZone>us-east-1a</availabilityZone>
              <description/>
              <image>
                 <format>VDMK</format>
                 <size>128696320</size>
                 <importManifestUrl>
                  https://s3.amazonaws.com/amzn-s3-demo-bucket/
a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.
vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&
Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
                 </importManifestUrl>
              </image>
              <volume>
                 <size>8</size>
```

```
                <id>vol-1234567890abcdef0</id>
              </volume>
            </importVolume>
            <state>active</state>
            <statusMessage/>
          </conversionTask>
      </item>
  </conversionTasks>
</DescribeConversionTasksResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeCustomerGateways

Describes one or more of your VPN customer gateways.

For more information, see AWS Site-to-Site VPN in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CustomerGatewayId.N**

One or more customer gateway IDs.

Default: Describes all your customer gateways.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `bgp-asn` - The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).
- `customer-gateway-id` - The ID of the customer gateway.
- `ip-address` - The IP address of the customer gateway device's external interface.
- `state` - The state of the customer gateway (`pending` | `available` | `deleting` | `deleted`).
- `type` - The type of customer gateway. Currently, the only supported type is `ipsec.1`.

- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

## Response Elements

The following elements are returned by the service.

**customerGatewaySet**

Information about one or more customer gateways.

Type: Array of CustomerGateway objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example request describes the specified customer gateway.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
```

```
&CustomerGatewayId.1=cgw-b4dc3961
&AUTHPARAMS
```

### Sample Response

```
<DescribeCustomerGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <customerGatewaySet>
    <item>
       <customerGatewayId>cgw-b4dc3961</customerGatewayId>
       <state>available</state>
       <type>ipsec.1</type>
       <ipAddress>12.1.2.3</ipAddress>
       <bgpAsn>65534</bgpasn>
       <tagSet/>
    </item>
  </customerGatewaySet>
</DescribeCustomerGatewaysResponse>
```

## Example 2

This example request uses filters to describe any customer gateway you own whose IP address is `12.1.2.3`, and whose state is either `pending` or `available`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&Filter.1.Name=ip-address
&Filter.1.Value.1=12.1.2.3
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeDeclarativePoliciesReports

Describes the metadata of an account status report, including the status of the report.

To view the full report, download it from the Amazon S3 bucket where it was saved. Reports are accessible only when they have the `complete` status. Reports with other statuses (`running`, `cancelled`, or `error`) are not available in the S3 bucket. For more information about downloading objects from an S3 bucket, see Downloading objects in the *Amazon Simple Storage Service User Guide*.

For more information, see Generating the account status report for declarative policies in the *AWS Organizations User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**ReportId.N**

One or more report IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**reportSet**

The report metadata.

Type: Array of DeclarativePoliciesReport objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeDhcpOptions

Describes your DHCP option sets. The default is to describe all your DHCP option sets. Alternatively, you can specify specific DHCP option set IDs or filter the results to include only the DHCP option sets that match specific criteria.

For more information, see DHCP option sets in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DhcpOptionsId.N**

The IDs of DHCP option sets.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `dhcp-options-id` - The ID of a DHCP options set.
- `key` - The key for one of the options (for example, `domain-name`).
- `value` - The value for one of the options.
- `owner-id` - The ID of the AWS account that owns the DHCP options set.
- `tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have

a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**dhcpOptionsSet**

Information about the DHCP options sets.

Type: Array of DhcpOptions objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes all of your DHCP option sets.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&AUTHPARAMS
```

#### Sample Response

```
<DescribeDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>a0d78ea6-7bc7-4cb8-b827-c5ff0aff0140</requestId>
    <dhcpOptionsSet>
        <item>
            <dhcpOptionsId>dopt-1EXAMPLE</dhcpOptionsId>
            <ownerId>111122223333</ownerId>
            <dhcpConfigurationSet>
                <item>
                    <key>domain-name</key>
                    <valueSet>
                        <item>
                            <value>us-east-2.compute.internal</value>
                        </item>
                    </valueSet>
                </item>
                <item>
                    <key>domain-name-servers</key>
```

```
                    <valueSet>
                        <item>
                            <value>AmazonProvidedDNS</value>
                        </item>
                    </valueSet>
                </item>
            </dhcpConfigurationSet>
        </item>
        <item>
            <dhcpOptionsId>dopt-fEXAMPLE</dhcpOptionsId>
            <ownerId>111122223333</ownerId>
            <dhcpConfigurationSet>
                <item>
                    <key>domain-name</key>
                    <valueSet>
                        <item>
                            <value>us-east-2.compute.internal</value>
                        </item>
                    </valueSet>
                </item>
                <item>
                    <key>domain-name-servers</key>
                    <valueSet>
                        <item>
                            <value>AmazonProvidedDNS</value>
                        </item>
                    </valueSet>
                </item>
            </dhcpConfigurationSet>
        </item>
    </dhcpOptionsSet>
</DescribeDhcpOptionsResponse>
```

## Example 2

This example uses filters to describe any DHCP option sets that include a `domain-name` option whose value includes the string `example`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&Filter.1.Name=key
&Filter.1.Value.1=domain-name
```

```
&Filter.2.Name=value
&Filter.2.Value.1=*example*
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeEgressOnlyInternetGateways

Describes your egress-only internet gateways. The default is to describe all your egress-only internet gateways. Alternatively, you can specify specific egress-only internet gateway IDs or filter the results to include only the egress-only internet gateways that match specific criteria.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EgressOnlyInternetGatewayId.N**

The IDs of the egress-only internet gateways.

Type: Array of strings

Required: No

**Filter.N**

The filters.

- `tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**egressOnlyInternetGatewaySet**

Information about the egress-only internet gateways.

Type: Array of EgressOnlyInternetGateway objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all of your egress-only internet gateways.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeEgressOnlyInternetGateways
&AUTHPARAMS
```

#### Sample Response

```
<DescribeEgressOnlyInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>ec441b4c-357f-4483-b4a7-example</requestId>
    <egressOnlyInternetGatewaySet>
        <item>
            <attachmentSet>
                <item>
                    <state>attached</state>
                    <vpcId>vpc-0c62a468</vpcId>
                </item>
            </attachmentSet>
            <egressOnlyInternetGatewayId>eigw-015e0e244e24dfe8a</
egressOnlyInternetGatewayId>
        </item>
    </egressOnlyInternetGatewaySet>
</DescribeEgressOnlyInternetGatewaysResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeElasticGpus

> **Note**
>
> Amazon Elastic Graphics reached end of life on January 8, 2024.

Describes the Elastic Graphics accelerator associated with your instances.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ElasticGpuId.N**

The Elastic Graphics accelerator IDs.

Type: Array of strings

Required: No

**Filter.N**

The filters.

- `availability-zone` - The Availability Zone in which the Elastic Graphics accelerator resides.
- `elastic-gpu-health` - The status of the Elastic Graphics accelerator (`OK` | `IMPAIRED`).
- `elastic-gpu-state` - The state of the Elastic Graphics accelerator (`ATTACHED`).
- `elastic-gpu-type` - The type of Elastic Graphics accelerator; for example, `eg1.medium`.

- `instance-id` - The ID of the instance to which the Elastic Graphics accelerator is associated.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. This value can be between 5 and 1000.

Type: Integer

Valid Range: Minimum value of 10. Maximum value of 1000.

Required: No

**NextToken**

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**elasticGpuSet**

Information about the Elastic Graphics accelerators.

Type: Array of ElasticGpus objects

**maxResults**

The total number of items to return. If the total number of items available is more than the value specified in max-items then a Next-Token will be provided in the output that you can use to resume pagination.

Type: Integer

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all of the Elastic Graphics accelerators associated with your instances.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeElasticGpus
&AUTHPARAMS
```

#### Sample Response

```
<DescribeElasticGpusResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>450268ba-0e1d-4401-958e-9a3example</requestId>
  <elasticGpuSet>
     <item>
        <elasticGpuId>egpu-0833fd743e7227123</elasticGpuId>
        <availabilityZone>us-east-1a</availabilityZone>
        <elasticGpuType>eg1.small</elasticGpuType>
        <elasticGpuHealth>OK</elasticGpuHealth>
        <elasticGpuState>ATTACHED</elasticGpuState>
        <instanceId>i-1234567890abc1234</instanceId>
      </item>
  </elasticGpuSet>
```

```
</DescribeElasticGpusResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeExportImageTasks

Describes the specified export image tasks or all of your export image tasks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ExportImageTaskId.N**

The IDs of the export image tasks.

Type: Array of strings

Required: No

**Filter.N**

Filter tasks using the `task-state` filter and one of the following values: `active`, `completed`, `deleting`, or `deleted`.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return in a single call.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 500.

Required: No

**NextToken**

A token that indicates the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**exportImageTaskSet**

Information about the export image tasks.

Type: Array of ExportImageTask objects

**nextToken**

The token to use to get the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeExportTasks

Describes the specified export instance tasks or all of your export instance tasks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ExportTaskId.N**

The export task IDs.

Type: Array of strings

Required: No

**Filter.N**

the filters for the export tasks.

Type: Array of Filter objects

Required: No

## Response Elements

The following elements are returned by the service.

**exportTaskSet**

Information about the export tasks.

Type: Array of ExportTask objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes a single export task.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeExportTasks
&exportTaskId.1=export-i-1234wxyz
&AUTHPARAMS
```

### Sample Response

```
<DescribeExportTasksResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<exportTaskSet>
  <item>
    <exportTaskId>export-i-1234wxyz</exportTaskId>
    <description>Example for docs</description>
    <state>active</state>
    <statusMessage>Running</statusMessage>
    <instanceExport>
      <instanceId>i-12345678</instanceId>
      <targetEnvironment>VMWare</targetEnvironment>
    </instanceExport>
    <exportToS3>
      <diskImageFormat>VMDK</diskImageFormat>
      <containerFormat>OVA</containerFormat>
      <s3Bucket>amzn-s3-demo-for-exported-vm</s3Bucket>
      <s3Key>my-exports/ export-i-1234wxyz.ova</s3Key>
    </exportToS3>
  </item>
</exportTaskSet>
</DescribeExportTasksResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeFastLaunchImages

Describe details for Windows AMIs that are configured for Windows fast launch.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

Use the following filters to streamline results.

- `resource-type` - The resource type for pre-provisioning.
- `owner-id` - The owner ID for the pre-provisioning resource.
- `state` - The current state of fast launching for the Windows AMI.

Type: Array of Filter objects

Required: No

**ImageId.N**

Specify one or more Windows AMI image IDs for the request.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 200.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**fastLaunchImageSet**

A collection of details about the fast-launch enabled Windows images that meet the requested criteria.

Type: Array of DescribeFastLaunchImagesSuccessItem objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeFastSnapshotRestores

Describes the state of fast snapshot restores for your snapshots.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters. The possible values are:

- `availability-zone`: The Availability Zone of the snapshot. For example, `us-east-2a`.
- `availability-zone-id`: The ID of the Availability Zone of the snapshot. For example, `use2-az1`.
- `owner-id`: The ID of the AWS account that enabled fast snapshot restore on the snapshot.
- `snapshot-id`: The ID of the snapshot.
- `state`: The state of fast snapshot restores for the snapshot (`enabling` | `optimizing` | `enabled` | `disabling` | `disabled`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 200.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**fastSnapshotRestoreSet**

Information about the state of fast snapshot restores.

Type: Array of DescribeFastSnapshotRestoreSuccessItem objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeFleetHistory

Describes the events for the specified EC2 Fleet during the specified time.

EC2 Fleet events are delayed by up to 30 seconds before they can be described. This ensures that you can query by the last evaluated time and not miss a recorded event. EC2 Fleet events are available for 48 hours.

For more information, see Monitor fleet events using Amazon EventBridge in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EventType**

The type of events to describe. By default, all events are described.

Type: String

Valid Values: `instance-change | fleet-change | service-error`

Required: No

**FleetId**

The ID of the EC2 Fleet.

Type: String

Required: Yes

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**StartTime**

The start date and time for the events, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

Required: Yes

## Response Elements

The following elements are returned by the service.

**fleetId**

The ID of the EC Fleet.

Type: String

**historyRecordSet**

Information about the events in the history of the EC2 Fleet.

Type: Array of HistoryRecordEntry objects

**lastEvaluatedTime**

The last date and time for the events, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). All records up to this time were retrieved.

If `nextToken` indicates that there are more items, this value is not present.

Type: Timestamp

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**startTime**

The start date and time for the events, in UTC format (for example, *YYYY*-*MM*-*DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeFleetInstances

Describes the running instances for the specified EC2 Fleet.

> **Note**
>
> Currently, `DescribeFleetInstances` does not support fleets of type `instant`. Instead, use `DescribeFleets`, specifying the `instant` fleet ID in the request.

For more information, see Describe your EC2 Fleet in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `instance-type` - The instance type.

Type: Array of Filter objects

Required: No

**FleetId**

The ID of the EC2 Fleet.

Type: String

Required: Yes

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**activeInstanceSet**

The running instances. This list is refreshed periodically and might be out of date.

Type: Array of ActiveInstance objects

**fleetId**

The ID of the EC2 Fleet.

Type: String

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeFleets

Describes the specified EC2 Fleet or all of your EC2 Fleets.

> **Important**
>
> If a fleet is of type `instant`, you must specify the fleet ID in the request, otherwise the fleet does not appear in the response.

For more information, see Describe your EC2 Fleet in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `activity-status` - The progress of the EC2 Fleet ( `error` | `pending-fulfillment` | `pending-termination` | `fulfilled`).
- `excess-capacity-termination-policy` - Indicates whether to terminate running instances if the target capacity is decreased below the current EC2 Fleet size (`true` | `false`).
- `fleet-state` - The state of the EC2 Fleet (`submitted` | `active` | `deleted` | `failed` | `deleted-running` | `deleted-terminating` | `modifying`).
- `replace-unhealthy-instances` - Indicates whether EC2 Fleet should replace unhealthy instances (`true` | `false`).
- `type` - The type of request (`instant` | `request` | `maintain`).

Type: Array of Filter objects

Required: No

**FleetId.N**

The IDs of the EC2 Fleets.

> **Note**
>
> If a fleet is of type `instant`, you must specify the fleet ID, otherwise it does not appear in the response.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**fleetSet**

Information about the EC2 Fleets.

Type: Array of FleetData objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeFlowLogs

Describes one or more flow logs.

To view the published flow log records, you must view the log destination. For example, the CloudWatch Logs log group, the Amazon S3 bucket, or the Kinesis Data Firehose delivery stream.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `deliver-log-status` - The status of the logs delivery (`SUCCESS` | `FAILED`).
- `log-destination-type` - The type of destination for the flow log data (`cloud-watch-logs` | `s3` | `kinesis-data-firehose`).
- `flow-log-id` - The ID of the flow log.
- `log-group-name` - The name of the log group.
- `resource-id` - The ID of the VPC, subnet, or network interface.
- `traffic-type` - The type of traffic (`ACCEPT` | `REJECT` | `ALL`).
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**FlowLogId.N**

One or more flow log IDs.

Constraint: Maximum of 1000 flow log IDs.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token to request the next page of items. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**flowLogSet**

Information about the flow logs.

Type: Array of FlowLog objects

**nextToken**

The token to request the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all of your flow logs.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeFlowLogs
&AUTHPARAMS
```

#### Sample Response

```
<DescribeFlowLogsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>3cb46f23-099e-4bf0-891c-EXAMPLE</requestId>
    <flowLogSet>
        <item>
            <logDestination>arn:aws:s3:::my-log-bucket/my-logs/</logDestination>
            <resourceId>vpc-001234183afc7cabc</resourceId>
            <logDestinationType>s3</logDestinationType>
            <creationTime>2020-02-04T11:46:13.831Z</creationTime>
            <trafficType>ALL</trafficType>
            <deliverLogsStatus>SUCCESS</deliverLogsStatus>
            <logFormat>${version} ${instance-id} ${interface-id} ${type} ${pkt-srcaddr}
 ${pkt-dstaddr} ${protocol} ${bytes} ${start} ${end} ${action}</logFormat>
            <flowLogStatus>ACTIVE</flowLogStatus>
            <flowLogId>fl-1234c5499532dbabc</flowLogId>
            <maxAggregationInterval>60</maxAggregationInterval>
            <tagSet>
                <item>
```

```
                    <key>Name</key>
                    <value>FlowsForVpcA</value>
                </item>
            </tagSet>
        </item>
        <item>
            <resourceId>vpc-1122e8183afc74455</resourceId>
            <logDestinationType>cloud-watch-logs</logDestinationType>
            <deliverLogsPermissionArn>arn:aws:iam::123456789101:role/flowlogsrole</
deliverLogsPermissionArn>
            <creationTime>2019-07-24T13:11:42.383Z</creationTime>
            <trafficType>ALL</trafficType>
            <deliverLogsStatus>SUCCESS</deliverLogsStatus>
            <logFormat>${version} ${account-id} ${interface-id} ${srcaddr} ${dstaddr}
 ${srcport} ${dstport} ${protocol} ${packets} ${bytes} ${start} ${end} ${action} ${log-
status}</logFormat>
            <flowLogStatus>ACTIVE</flowLogStatus>
            <logGroupName>FlowLogsForSubnetB</logGroupName>
            <flowLogId>fl-0abc1235983d13123</flowLogId>
            <maxAggregationInterval>600</maxAggregationInterval>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>FlowsForVpcB</value>
                </item>
            </tagSet>
        </item>
    </flowLogSet>
</DescribeFlowLogsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeFpgaImageAttribute

Describes the specified attribute of the specified Amazon FPGA Image (AFI).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The AFI attribute.

Type: String

Valid Values: `description | name | loadPermission | productCodes`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FpgaImageId**

The ID of the AFI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**fpgaImageAttribute**

Information about the attribute.

Type: FpgaImageAttribute object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the load permissions for the specified AFI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeFpgaImageAttribute
&FpgaImageId=afi-0d123e21abcc85abc
&Attribute=loadPermission
&AUTHPARAMS
```

#### Sample Response

```
<DescribeFpgaImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>19106033-3723-481e-8cc4-aedexample</requestId>
    <fpgaImageAttribute>
        <fpgaImageId>afi-0d123e21abcc85abc</fpgaImageId>
        <loadPermissions>
            <item>
                <userId>123456789012</userId>
            </item>
        </loadPermissions>
    </fpgaImageAttribute>
</DescribeFpgaImageAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeFpgaImages

Describes the Amazon FPGA Images (AFIs) available to you. These include public AFIs, private AFIs that you own, and AFIs owned by other AWS accounts for which you have load permissions.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `create-time` - The creation time of the AFI.
- `fpga-image-id` - The FPGA image identifier (AFI ID).
- `fpga-image-global-id` - The global FPGA image identifier (AGFI ID).
- `name` - The name of the AFI.
- `owner-id` - The AWS account ID of the AFI owner.
- `product-code` - The product code.
- `shell-version` - The version of the AWS Shell that was used to create the bitstream.
- `state` - The state of the AFI (`pending` | `failed` | `available` | `unavailable`).
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `update-time` - The time of the most recent update.

Type: Array of Filter objects

Required: No

**FpgaImageId.N**

The AFI IDs.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return in a single call.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

**Owner.N**

Filters the AFI by owner. Specify an AWS account ID, `self` (owner is the sender of the request), or an AWS owner alias (valid values are `amazon` | `aws-marketplace`).

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**fpgaImageSet**

Information about the FPGA images.

Type: Array of FpgaImage objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes AFIs that are owned by account 123456789012.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeFpgaImages
&Filter.1.Name=owner-id
&Filter.1.Value.1=123456789012
&AUTHPARAMS
```

#### Sample Response

```
<DescribeFpgaImagesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>c984bf72-784e-43b0-be87-d7903example</requestId>
    <fpgaImageSet>
        <item>
            <createTime>2017-12-22T11:43:33.000Z</createTime>
            <description>my-afi</description>
            <fpgaImageGlobalId>agfi-05fabc8e7fcca8abc</fpgaImageGlobalId>
            <fpgaImageId>afi-0feabc187988f4abc</fpgaImageId>
            <public>false</public>
```

```
            <name>my-afi</name>
            <ownerId>123456789012</ownerId>
            <pciId>
                <DeviceId>0xf000</DeviceId>
                <SubsystemId>0x1d51</SubsystemId>
                <SubsystemVendorId>0xfedd</SubsystemVendorId>
                <VendorId>0x1d0f</VendorId>
            </pciId>
            <shellVersion>0x071417d3</shellVersion>
            <state>
                <code>available</code>
            </state>
            <updateTime>2017-12-22T12:09:14.000Z</updateTime>
        </item>
        <item>
            <createTime>2017-12-22T11:44:54.000Z</createTime>
            <description>my-afi-2</description>
            <fpgaImageGlobalId>agfi-0312327b5e84a0123</fpgaImageGlobalId>
            <fpgaImageId>afi-0d0123214bfc85123</fpgaImageId>
            <public>false</public>
            <name>my-afi-2</name>
            <ownerId>123456789012</ownerId>
            <pciId>
                <DeviceId>0xf000</DeviceId>
                <SubsystemId>0x1d51</SubsystemId>
                <SubsystemVendorId>0xfedd</SubsystemVendorId>
                <VendorId>0x1d0f</VendorId>
            </pciId>
            <shellVersion>0x071417d3</shellVersion>
            <state>
                <code>available</code>
            </state>
            <updateTime>2017-12-22T12:10:24.000Z</updateTime>
        </item>
    </fpgaImageSet>
</DescribeFpgaImagesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeHostReservationOfferings

Describes the Dedicated Host reservations that are available to purchase.

The results describe all of the Dedicated Host reservation offerings, including offerings that might not match the instance family and Region of your Dedicated Hosts. When purchasing an offering, ensure that the instance family and Region of the offering matches that of the Dedicated Hosts with which it is to be associated. For more information about supported instance types, see Dedicated Hosts in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Filter.N**

The filters.

- `instance-family` - The instance family of the offering (for example, `m4`).
- `payment-option` - The payment option (`NoUpfront` | `PartialUpfront` | `AllUpfront`).

Type: Array of Filter objects

Required: No

**MaxDuration**

This is the maximum duration of the reservation to purchase, specified in seconds. Reservations are available in one-year and three-year terms. The number of seconds specified must be the number of seconds in a year (365x24x60x60) times one of the supported durations (1 or 3). For example, specify 94608000 for three years.

Type: Integer

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 500.

Required: No

**MinDuration**

This is the minimum duration of the reservation you'd like to purchase, specified in seconds. Reservations are available in one-year and three-year terms. The number of seconds specified must be the number of seconds in a year (365x24x60x60) times one of the supported durations (1 or 3). For example, specify 31536000 for one year.

Type: Integer

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

**OfferingId**

The ID of the reservation offering.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**offeringSet**

Information about the offerings.

Type: Array of HostOffering objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes all of the Dedicated Host Reservation offerings.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeHostReservationOfferings
&AUTHPARAMS
```

#### Sample Response

```
<DescribeHostReservationOfferingsResult xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
<requestId>d4904fd9-84c3-4ea5-gtyk-a9cc3EXAMPLE</requestId>
<offeringSet>
    <item>
        <duration>94608000</duration>
        <upfrontPrice>28396.000</upfrontPrice>
        <paymentOption>AllUpfront</paymentOption>
        <instanceFamily>m4</instanceFamily>
        <offeringId>hro-0875903788203856fg</offeringId>
        <hourlyPrice>0.000</hourlyPrice>
    </item>
    <item>
```

```
        <duration>31536000</duration>
        <upfrontPrice>13603.000</upfrontPrice>
        <paymentOption>AllUpfront</paymentOption>
        <instanceFamily>r3</instanceFamily>
        <offeringId>hro-08ddfitlb8990hhkmp</offeringId>
        <hourlyPrice>0.000</hourlyPrice>
    </item>
    <item>
        <duration>94608000</duration>
        <upfrontPrice>57382.000</upfrontPrice>
        <paymentOption>PartialUpfront</paymentOption>
        <instanceFamily>x1</instanceFamily>
        <offeringId>hro-0875903788207657fg</offeringId>
        <hourlyPrice>2.183</hourlyPrice>
    </item>
</offeringSet>
</DescribeHostReservationOfferingsResult>
```

## Example 2

This example describes all of the Dedicated Host reservation offerings, with a maximum duration of three years, that are available to purchase.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeHostReservationOfferings
&MaxDuration=94608000
&AUTHPARAMS
```

### Sample Response

```
<DescribeHostReservationOfferingsResult xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
<requestId>d4905678-84c3-4ea5-gtyk-a9cc3EXAMPLE</requestId>
<offeringSet>
    <item>
        <duration>31536000</duration>
        <upfrontPrice>4879.000</upfrontPrice>
        <paymentOption>PartialUpfront</paymentOption>
        <instanceFamily>c3</instanceFamily>
        <offeringId>hro-7890903788203856fg</offeringId>
        <hourlyPrice>0.557</hourlyPrice>
```

```
    </item>
    <item>
        <duration>94608000</duration>
        <upfrontPrice>18892.000</upfrontPrice>
        <paymentOption>AllUpfront</paymentOption>
        <instanceFamily>c4</instanceFamily>
        <offeringId>hro-1092903788203856fg</offeringId>
        <hourlyPrice>0.000</hourlyPrice>
    </item>
</offeringSet>
</DescribeHostReservationOfferingsResult>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeHostReservations

Describes reservations that are associated with Dedicated Hosts in your account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Filter.N**

The filters.

- `instance-family` - The instance family (for example, `m4`).
- `payment-option` - The payment option (`NoUpfront` | `PartialUpfront` | `AllUpfront`).
- `state` - The state of the reservation (`payment-pending` | `payment-failed` | `active` | `retired`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**HostReservationIdSet.N**

The host reservation IDs.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

Type: Integer

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**hostReservationSet**

Details about the reservation's configuration.

Type: Array of HostReservation objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all of the Dedicated Host reservations in your account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeHostReservations
&AUTHPARAMS
```

### Sample Response

```
<DescribeHostReservationsResult xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>d4904fd9-84c3-4ea5-gtyk-a9983EXAMPLE</requestId>
<hostReservationSet>
    <item>
        <upfrontPrice>0.000</upfrontPrice>
        <count>2</count>
        <start>2016-08-01T15:43:15Z</start>
        <instanceFamily>m4</instanceFamily>
        <offeringId>hro-0875903778903856fg</offeringId>
        <duration>31536000</duration>
        <paymentOption>NoUpfront</paymentOption>
        <end>2017-08-01T15:43:15Z</end>
        <hostReservationId>hr-0875903778903856fg</hostReservationId>
        <state>active</state>
        <hourlyPrice>1.990</hourlyPrice>
        <hostIdSet>
            <item>h-0897086hfkttn</item>
            <item>h-0891346hytrtn</item>
        </hostIdSet>
    </item>
</hostReservationSet>
</DescribeHostReservationsResult>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeHosts

Describes the specified Dedicated Hosts or all your Dedicated Hosts.

The results describe only the Dedicated Hosts in the Region you're currently using. All listed instances consume capacity on your Dedicated Host. Dedicated Hosts that have recently been released are listed with the state `released`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Filter.N**

The filters.

- `auto-placement` - Whether auto-placement is enabled or disabled (on | `off`).
- `availability-zone` - The Availability Zone of the host.
- `client-token` - The idempotency token that you provided when you allocated the host.
- `host-reservation-id` - The ID of the reservation assigned to this host.
- `instance-type` - The instance type size that the Dedicated Host is configured to support.
- `state` - The allocation state of the Dedicated Host (`available` | `under-assessment` | `permanent-failure` | `released` | `released-permanent-failure`).
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**HostId.N**

The IDs of the Dedicated Hosts. The IDs are used for targeted instance launches.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

You cannot specify this parameter and the host IDs parameter in the same request.

Type: Integer

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**hostSet**

Information about the Dedicated Hosts.

Type: Array of Host objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

# Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example describes the Dedicated Hosts in your account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeHosts
&AUTHPARAMS
```

### Sample Response

```
<DescribeHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
<hostSet>
    <item>
        <availableCapacity>
            <availableVCpus>96</availableVCpus>
            <availableInstanceCapacity>
                <item>
                    <availableCapacity>48</availableCapacity>
                    <totalCapacity>48</totalCapacity>
                    <instanceType>m5.large</instanceType>
                </item>
            </availableInstanceCapacity>
        </availableCapacity>
        <instances/>
        <autoPlacement>off</autoPlacement>
        <hostRecovery>off</hostRecovery>
        <hostId>h-05abcdd96ee9ca123</hostId>
        <allocationTime>2018-01-23T12:33:31.692Z</allocationTime>
        <state>available</state>
        <hostProperties>
            <totalVCpus>96</totalVCpus>
            <cores>48</cores>
            <sockets>2</sockets>
            <instanceType>m5.large</instanceType>
```

```
        </hostProperties>
        <availabilityZone>us-east-1a</availabilityZone>
        </item>
    </hostSet>
</DescribeHostsResponse>
```

## Example 2

This example describes a released Dedicated Host in your account using the `state` filter to show only hosts with a state of `released`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeHosts
&Filter.1.Name=state
&Filter.1.Value=released
&AUTHPARAMS
```

### Sample Response

```
<DescribeHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>d4904fd9-82c2-4ea5-adfe-a9983EXAMPLE</requestId>
<hostSet>
     item>
        <releaseTime>2018-04-06T14:48:40.068Z</releaseTime>
        <instances/>
        <autoPlacement>on</autoPlacement>
        <hostRecovery>off</hostRecovery>
        <hostId>h-0abcd595047722123</hostId>
        <state>released</state>
        <allocationTime>2018-01-23T12:23:01.501Z</allocationTime>
        <hostProperties>
            <totalVCpus>96</totalVCpus>
            <cores>48</cores>
            <sockets>2</sockets>
            <instanceType>m5.large</instanceType>
        </hostProperties>
        <availabilityZone>us-east-1a</availabilityZone>
    </item>
</hostSet>
</DescribeHostsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIamInstanceProfileAssociations

Describes your IAM instance profile associations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId.N**

The IAM instance profile associations.

Type: Array of strings

Required: No

**Filter.N**

The filters.

- `instance-id` - The ID of the instance.
- `state` - The state of the association (`associating` | `associated` | `disassociating`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**iamInstanceProfileAssociationSet**

Information about the IAM instance profile associations.

Type: Array of IamInstanceProfileAssociation objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all of your IAM instance profile associations.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeIamInstanceProfileAssociations
&AUTHPARAMS
```

### Sample Response

```
<DescribeIamInstanceProfileAssociationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>84c2d2a6-12dc-491f-a9ee-example</requestId>
    <iamInstanceProfileAssociations>
        <item>
            <associationId>iip-assoc-08049da59357d598c</associationId>
            <iamInstanceProfile>
                <arn>arn:aws:iam::123456789012:instance-profile/AdminProfile</arn>
                <id>AIPAJEDNCAA64SSD265D6</id>
            </iamInstanceProfile>
            <instanceId>i-1234567890abcdef0</instanceId>
            <state>associated</state>
        </item>
    </iamInstanceProfileAssociations>
</DescribeIamInstanceProfileAssociationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIdentityIdFormat

Describes the ID format settings for resources for the specified IAM user, IAM role, or root user. For example, you can view the resource types that are enabled for longer IDs. This request only returns information about resource types whose ID formats can be modified; it does not return information about other resource types. For more information, see Resource IDs in the *Amazon Elastic Compute Cloud User Guide*.

The following resource types support longer IDs: `bundle` | `conversion-task` | `customer-gateway` | `dhcp-options` | `elastic-ip-allocation` | `elastic-ip-association` | `export-task` | `flow-log` | `image` | `import-task` | `instance` | `internet-gateway` | `network-acl` | `network-acl-association` | `network-interface` | `network-interface-attachment` | `prefix-list` | `reservation` | `route-table` | `route-table-association` | `security-group` | `snapshot` | `subnet` | `subnet-cidr-block-association` | `volume` | `vpc` | `vpc-cidr-block-association` | `vpc-endpoint` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway`.

These settings apply to the principal specified in the request. They do not apply to the principal that makes the request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**PrincipalArn**

The ARN of the principal, which can be an IAM role, IAM user, or the root user.

Type: String

Required: Yes

**Resource**

The type of resource: `bundle` | `conversion-task` | `customer-gateway` | `dhcp-options` | `elastic-ip-allocation` | `elastic-ip-association` | `export-task` | `flow-log` | `image` | `import-task` | `instance` | `internet-gateway` | `network-acl` | `network-acl-association` | `network-interface` | `network-interface-attachment` | `prefix-list` | `reservation` | `route-table` | `route-table-association` | `security-group`

| `snapshot` | `subnet` | `subnet-cidr-block-association` | `volume` | `vpc` | `vpc-cidr-block-association` | `vpc-endpoint` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway`

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**statusSet**

Information about the ID format for the resources.

Type: Array of IdFormat objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the ID format for the IAM role 'EC2Role'.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeIdentityIdFormat
&PrincipalArn=arn:aws:iam::123456789012:role/EC2Role
&AUTHPARAMS
```

## Sample Response

```
<DescribeIdentityIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
    <statusSet>
        <item>
            <useLongIds>true</useLongIds>
            <deadline>2016-12-15T12:00:00Z</deadline>
            <resource>reservation</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <deadline>2016-12-15T12:00:00Z</deadline>
            <resource>instance</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <deadline>2016-12-15T12:00:00Z</deadline>
            <resource>volume</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <deadline>2016-12-15T12:00:00Z</deadline>
            <resource>snapshot</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>network-interface-attachment</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>network-interface</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>elastic-ip-allocation</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>elastic-ip-association</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>vpc</resource>
```

```
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>subnet</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>route-table</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>route-table-association</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>network-acl</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>network-acl-association</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>dhcp-options</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>internet-gateway</resource>
        </item>
        <item>
            <useLongIds>false</useLongIds>
            <resource>vpc-cidr-block-association</resource>
        </item>
        <item>
            <useLongIds>false</useLongIds>
            <resource>vpc-ipv6-cidr-block-association</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>subnet-ipv6-cidr-block-association</resource>
        </item>
        <item>
            <useLongIds>false</useLongIds>
            <resource>vpc-peering-connection</resource>
```

```
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>security-group</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>flow-log</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>customer-gateway</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>vpc-endpoint</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>vpn-connection</resource>
        </item>
        <item>
            <useLongIds>true</useLongIds>
            <resource>vpn-gateway</resource>
        </item>
    </statusSet>
</DescribeIdentityIdFormatResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIdFormat

Describes the ID format settings for your resources on a per-Region basis, for example, to view which resource types are enabled for longer IDs. This request only returns information about resource types whose ID formats can be modified; it does not return information about other resource types.

The following resource types support longer IDs: `bundle` | `conversion-task` | `customer-gateway` | `dhcp-options` | `elastic-ip-allocation` | `elastic-ip-association` | `export-task` | `flow-log` | `image` | `import-task` | `instance` | `internet-gateway` | `network-acl` | `network-acl-association` | `network-interface` | `network-interface-attachment` | `prefix-list` | `reservation` | `route-table` | `route-table-association` | `security-group` | `snapshot` | `subnet` | `subnet-cidr-block-association` | `volume` | `vpc` | `vpc-cidr-block-association` | `vpc-endpoint` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway`.

These settings apply to the IAM user who makes the request; they do not apply to the entire AWS account. By default, an IAM user defaults to the same settings as the root user, unless they explicitly override the settings by running the ModifyIdFormat command. Resources created with longer IDs are visible to all IAM users, regardless of these settings and provided that they have permission to use the relevant `Describe` command for the resource type.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Resource**

The type of resource: `bundle` | `conversion-task` | `customer-gateway` | `dhcp-options` | `elastic-ip-allocation` | `elastic-ip-association` | `export-task` | `flow-log` | `image` | `import-task` | `instance` | `internet-gateway` | `network-acl` | `network-acl-association` | `network-interface` | `network-interface-attachment` | `prefix-list` | `reservation` | `route-table` | `route-table-association` | `security-group` | `snapshot` | `subnet` | `subnet-cidr-block-association` | `volume` | `vpc` | `vpc-cidr-block-association` | `vpc-endpoint` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway`

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**statusSet**

Information about the ID format for the resource.

Type: Array of IdFormat objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the ID format for all resources that support longer IDs.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeIdFormat
&AUTHPARAMS
```

#### Sample Response

```
<DescribeIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
    <statusSet>
        <item>
            <resource>reservation</resource>
            <useLongIds>true</useLongIds>
            <deadline>2016-12-15T12:00:00.000Z</deadline>
```

```
        </item>
        <item>
            <resource>instance</resource>
            <useLongIds>true</useLongIds>
            <deadline>2016-12-15T12:00:00.000Z</deadline>
        </item>
        <item>
            <resource>volume</resource>
            <useLongIds>true</useLongIds>
            <deadline>2016-12-15T12:00:00.000Z</deadline>
        </item>
        <item>
            <resource>snapshot</resource>
            <useLongIds>true</useLongIds>
            <deadline>2016-12-15T12:00:00.000Z</deadline>
        </item>
        <item>
            <resource>network-interface-attachment</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-interface</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>elastic-ip-allocation</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>elastic-ip-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpc</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>subnet</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>route-table</resource>
            <useLongIds>true</useLongIds>
        </item>
```

```
        <item>
            <resource>route-table-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-acl</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-acl-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>dhcp-options</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>internet-gateway</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpc-cidr-block-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpc-ipv6-cidr-block-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>subnet-ipv6-cidr-block-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpc-peering-connection</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>security-group</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>flow-log</resource>
            <useLongIds>true</useLongIds>
        </item>
```

```
        <item>
            <resource>customer-gateway</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpc-endpoint</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpn-connection</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpn-gateway</resource>
            <useLongIds>true</useLongIds>
        </item>
    </statusSet>
</DescribeIdFormatResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeImageAttribute

Describes the specified attribute of the specified AMI. You can specify only one attribute at a time.

> **Note**
>
> The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The AMI attribute.

**Note**: The `blockDeviceMapping` attribute is deprecated. Using this attribute returns the `Client.AuthFailure` error. To get information about the block device mappings for an AMI, describe the image instead.

Type: String

Valid Values: `description | kernel | ramdisk | launchPermission | productCodes | blockDeviceMapping | sriovNetSupport | bootMode | tpmSupport | uefiData | lastLaunchedTime | imdsSupport | deregistrationProtection`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**blockDeviceMapping**

The block device mapping entries.

Type: Array of BlockDeviceMapping objects

**bootMode**

The boot mode.

Type: AttributeValue object

**deregistrationProtection**

Indicates whether deregistration protection is enabled for the AMI.

Type: AttributeValue object

**description**

A description for the AMI.

Type: AttributeValue object

**imageId**

The ID of the AMI.

Type: String

**imdsSupport**

If `v2.0`, it indicates that IMDSv2 is specified in the AMI. Instances launched from this AMI will have `HttpTokens` automatically set to `required` so that, by default, the instance requires that

IMDSv2 is used when requesting instance metadata. In addition, `HttpPutResponseHopLimit` is set to 2. For more information, see Configure the AMI in the *Amazon EC2 User Guide*.

Type: AttributeValue object

**kernel**

The kernel ID.

Type: AttributeValue object

**lastLaunchedTime**

The date and time, in ISO 8601 date-time format, when the AMI was last used to launch an EC2 instance. When the AMI is used to launch an instance, there is a 24-hour delay before that usage is reported.

> **Note**
>
> `lastLaunchedTime` data is available starting April 2017.

Type: AttributeValue object

**launchPermission**

The launch permissions.

Type: Array of LaunchPermission objects

**productCodes**

The product codes.

Type: Array of ProductCode objects

**ramdisk**

The RAM disk ID.

Type: AttributeValue object

**requestId**

The ID of the request.

Type: String

**sriovNetSupport**

Indicates whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.

Type: AttributeValue object

**tpmSupport**

If the image is configured for NitroTPM support, the value is `v2.0`.

Type: AttributeValue object

**uefiData**

Base64 representation of the non-volatile UEFI variable store. To retrieve the UEFI data, use the GetInstanceUefiData command. You can inspect and modify the UEFI data by using the python-uefivars tool on GitHub. For more information, see UEFI Secure Boot for Amazon EC2 instances in the *Amazon EC2 User Guide*.

Type: AttributeValue object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example lists the launch permissions for the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
```

#### Sample Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <imageId>ami-61a54008</imageId>
   <launchPermission>
      <item>
         <group>all</group>
      </item>
      <item>
         <userId>495219933132</userId>
      </item>
   </launchPermission>
</DescribeImageAttributeResponse>
```

### Example 2

This example lists the product codes for the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-2bb65342
&Attribute=productCodes
&AUTHPARAMS
```

#### Sample Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/>
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <imageId>ami-2bb65342</imageId>
   <productCodes>
      <item>
        <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
        <type>marketplace</type>
      </item>
   </productCodes>
</DescribeImageAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeImageReferences

Describes your AWS resources that are referencing the specified images.

For more information, see Identify your resources referencing specified AMIs in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId.N**

The IDs of the images to check for resource references.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 10 items.

Required: Yes

**IncludeAllResourceTypes**

Specifies whether to check all supported AWS resource types for image references. When specified, default values are applied for `ResourceTypeOptions`. For the default values, see How AMI reference checks work in the *Amazon EC2 User Guide*. If you also specify `ResourceTypes` with `ResourceTypeOptions`, your specified values override the default values.

Supported resource types: `ec2:Instance` | `ec2:LaunchTemplate` | `ssm:Parameter` | `imagebuilder:ImageRecipe` | `imagebuilder:ContainerRecipe`

Either `IncludeAllResourceTypes` or `ResourceTypes` must be specified.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**ResourceType.N**

The AWS resource types to check for image references.

Either `IncludeAllResourceTypes` or `ResourceTypes` must be specified.

Type: Array of ResourceTypeRequest objects

Required: No

## Response Elements

The following elements are returned by the service.

**imageReferenceSet**

The resources that are referencing the specified images.

Type: Array of ImageReference objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeImages

Describes the specified images (AMIs, AKIs, and ARIs) available to you or all of the images available to you.

The images available to you include public images, private images that you own, and private images owned by other AWS accounts for which you have explicit launch permissions.

Recently deregistered images appear in the returned results for a short interval and then return empty results. After all instances that reference a deregistered AMI are terminated, specifying the ID of the image will eventually return an error indicating that the AMI ID cannot be found.

When Allowed AMIs is set to `enabled`, only allowed images are returned in the results, with the `imageAllowed` field set to `true` for each image. In `audit-mode`, the `imageAllowed` field is set to `true` for images that meet the account's Allowed AMIs criteria, and `false` for images that don't meet the criteria. For more information, see Allowed AMIs.

The Amazon EC2 API follows an eventual consistency model. This means that the result of an API command you run that creates or modifies resources might not be immediately available to all subsequent commands you run. For guidance on how to manage eventual consistency, see Eventual consistency in the Amazon EC2 API in the *Amazon EC2 Developer Guide*.

**Important**

We strongly recommend using only paginated requests. Unpaginated requests are susceptible to throttling and timeouts.

**Note**

The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ExecutableBy.N**

Scopes the images by users with explicit launch permissions. Specify an AWS account ID, `self` (the sender of the request), or `all` (public AMIs).

- If you specify an AWS account ID that is not your own, only AMIs shared with that specific AWS account ID are returned. However, AMIs that are shared with the account's organization or organizational unit (OU) are not returned.
- If you specify `self` or your own AWS account ID, AMIs shared with your account are returned. In addition, AMIs that are shared with the organization or OU of which you are member are also returned.
- If you specify `all`, all public AMIs are returned.

Type: Array of strings

Required: No

**Filter.N**

The filters.

- `architecture` - The image architecture (`i386` | `x86_64` | `arm64` | `x86_64_mac` | `arm64_mac`).
- `block-device-mapping.delete-on-termination` - A Boolean value that indicates whether the Amazon EBS volume is deleted on instance termination.
- `block-device-mapping.device-name` - The device name specified in the block device mapping (for example, `/dev/sdh` or `xvdh`).
- `block-device-mapping.snapshot-id` - The ID of the snapshot used for the Amazon EBS volume.
- `block-device-mapping.volume-size` - The volume size of the Amazon EBS volume, in GiB.

- `block-device-mapping.volume-type` - The volume type of the Amazon EBS volume (`io1` | `io2` | `gp2` | `gp3` | `sc1` | `st1` | `standard`).
- `block-device-mapping.encrypted` - A Boolean that indicates whether the Amazon EBS volume is encrypted.
- `creation-date` - The time when the image was created, in the ISO 8601 format in the UTC time zone (YYYY-MM-DDThh:mm:ss.sssZ), for example, `2021-09-29T11:04:43.305Z`. You can use a wildcard (`*`), for example, `2021-09-29T*`, which matches an entire day.
- `description` - The description of the image (provided during image creation).
- `ena-support` - A Boolean that indicates whether enhanced networking with ENA is enabled.
- `free-tier-eligible` - A Boolean that indicates whether this image can be used under the AWS Free Tier (`true` | `false`).
- `hypervisor` - The hypervisor type (`ovm` | `xen`).
- `image-allowed` - A Boolean that indicates whether the image meets the criteria specified for Allowed AMIs.
- `image-id` - The ID of the image.
- `image-type` - The image type (`machine` | `kernel` | `ramdisk`).
- `is-public` - A Boolean that indicates whether the image is public.
- `kernel-id` - The kernel ID.
- `manifest-location` - The location of the image manifest.
- `name` - The name of the AMI (provided during image creation).
- `owner-alias` - The owner alias (`amazon` | `aws-backup-vault` | `aws-marketplace`). The valid aliases are defined in an Amazon-maintained list. This is not the AWS account alias that can be set using the IAM console. We recommend that you use the **Owner** request parameter instead of this filter.
- `owner-id` - The AWS account ID of the owner. We recommend that you use the **Owner** request parameter instead of this filter.
- `platform` - The platform. The only supported value is `windows`.
- `product-code` - The product code.
- `product-code.type` - The type of the product code (`marketplace`).
- `ramdisk-id` - The RAM disk ID.
- `root-device-name` - The device name of the root device volume (for example, `/dev/sda1`).

- `root-device-type` - The type of the root device volume (`ebs` | `instance-store`).
- `source-image-id` - The ID of the source AMI from which the AMI was created.
- `source-image-region` - The Region of the source AMI.
- `source-instance-id` - The ID of the instance that the AMI was created from if the AMI was created using CreateImage. This filter is applicable only if the AMI was created using CreateImage.
- `state` - The state of the image (`available` | `pending` | `failed`).
- `state-reason-code` - The reason code for the state change.
- `state-reason-message` - The message for the state change.
- `sriov-net-support` - A value of `simple` indicates that enhanced networking with the Intel 82599 VF interface is enabled.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `virtualization-type` - The virtualization type (`paravirtual` | `hvm`).

Type: Array of Filter objects

Required: No

**ImageId.N**

The image IDs.

Default: Describes all images available to you.

Type: Array of strings

Required: No

**IncludeDeprecated**

Specifies whether to include deprecated AMIs.

Default: No deprecated AMIs are included in the response.

> **Note**
>
> If you are the AMI owner, all deprecated AMIs appear in the response regardless of what you specify for this parameter.

Type: Boolean

Required: No

**IncludeDisabled**

Specifies whether to include disabled AMIs.

Default: No disabled AMIs are included in the response.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**Owner.N**

Scopes the results to images with the specified owners. You can specify a combination of AWS account IDs, `self`, `amazon`, `aws-backup-vault`, and `aws-marketplace`. If you omit this parameter, the results include all images for which you have launch permissions, regardless of ownership.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**imagesSet**

Information about the images.

Type: Array of Image objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImages
```

```
&ImageId.1=ami-1234567890EXAMPLE
&AUTHPARAMS
```

## Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <virtualizationType>hvm</virtualizationType>
      <description>Provided by Red Hat, Inc.</description>
      <platformDetails>Red Hat Enterprise Linux</platformDetails>
      <enaSupport>true</enaSupport>
      <hypervisor>xen</hypervisor>
      <state>available</state>
      <sriovNetSupport>simple</sriovNetSupport>
      <imageId>ami-1234567890EXAMPLE</imageId>
      <usageOperation>RunInstances:0010</usageOperation>
      <blockDeviceMapping>
        <item>
          <deviceName>/dev/sda1</deviceName>
          <ebs>
            <snapshotId>snap-1234567890abcdef0</snapshotId>
            <volumeSize>15</volumeSize>
            <deleteOnTermination>false</deleteOnTermination>
            <volumeType>standard</volumeType>
          </ebs>
        </item>
      </blockDeviceMapping>
      <architecture>x86_64</architecture>
      <imageLocation>123456789012/RHEL-8.0.0_HVM-20190618-x86_64-1-Hourly2-GP2</
imageLocation>
      <rootDeviceType>ebs</rootDeviceType>
      <ownerId>123456789012</ownerId>
      <rootDeviceName>/dev/sda1</rootDeviceName>
      <creationDate>2019-05-10T13:17:12.000Z</creationDate>
      <public>true</public>
      <imageType>machine</imageType>
      <name>RHEL-8.0.0_HVM-20190618-x86_64-1-Hourly2-GP2</name>
      <tagSet/>
    </item>
  </imagesSet>
</DescribeImagesResponse>
```

## Example 2

This example filters the response to include only public Windows images with an x86_64 architecture.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Filter.1.Name=is-public
&Filter.1.Value.1=true
&Filter.2.Name=architecture
&Filter.2.Value.1=x86_64
&Filter.3.Name=platform
&Filter.3.Value.1=windows
&AUTHPARAMS
```

### Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <imagesSet>
      <item>
         <imageId>ami-1a2b3c4d</imageId>
         <imageLocation>ec2-public-windows-images/Server2003r2-x86_64-Win-
v1.07.manifest.xml</imageLocation>
         <imageState>available</imageState>
         <imageOwnerId>123456789012</imageOwnerId>
         <isPublic>true</isPublic>
         <architecture>x86_64</architecture>
         <imageType>machine</imageType>
         <platform>windows</platform>
         <imageOwnerAlias>amazon</imageOwnerAlias>
         <rootDeviceType>instance-store</rootDeviceType>
         <blockDeviceMapping/>
         <virtualizationType>hvm</virtualizationType>
         <tagSet/>
         <hypervisor>xen</hypervisor>
      </item>
      ...
   </imagesSet>
</DescribeImagesResponse>
```

## Example 3

This example returns the results to display images where the owner is `aws-marketplace`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Owner.1=aws-marketplace
&AUTHPARAMS
```

### Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
         <requestId>4a4a27a2-2e7c-475d-b35b-ca822EXAMPLE</requestId>
    <imagesSet>
        <item>
            <imageId>ami-1a2b3c4d</imageId>
            <imageLocation>aws-marketplace/example-marketplace-amzn-ami.1</
imageLocation>
            <imageState>available</imageState>
            <imageOwnerId>123456789012</imageOwnerId>
            <isPublic>true</isPublic>
            <productCodes>
                <item>
                    <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
                    <type>marketplace</type>
                </item>
            </productCodes>
            <architecture>i386</architecture>
            <imageType>machine</imageType>
            <kernelId>aki-1a2b3c4d</kernelId>
            <imageOwnerAlias>aws-marketplace</imageOwnerAlias>
            <name>example-marketplace-amzn-ami.1</name>
            <description>Amazon Linux AMI i386 EBS</description>
            <rootDeviceType>ebs</rootDeviceType>
            <rootDeviceName>/dev/sda1</rootDeviceName>
            <blockDeviceMapping>
                <item>
                    <deviceName>/dev/sda1</deviceName>
                    <ebs>
                        <snapshotId>snap-1234567890abcdef0</snapshotId>
                        <volumeSize>8</volumeSize>
                        <deleteOnTermination>true</deleteOnTermination>
```

```
                    </ebs>
                </item>
            </blockDeviceMapping>
            <virtualizationType>paravirtual</virtualizationType>
            <hypervisor>xen</hypervisor>
        </item>
        ...
    </imagesSet>
</DescribeImagesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeImageUsageReportEntries

Describes the entries in image usage reports, showing how your images are used across other AWS accounts.

For more information, see View your AMI usage in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `account-id` - A 12-digit AWS account ID.
- `creation-time` - The time when the report was created, in the ISO 8601 format in the UTC time zone (YYYY-MM-DDThh:mm:ss.sssZ), for example, `2025-11-29T11:04:43.305Z`. You can use a wildcard (`*`), for example, `2025-11-29T*`, which matches an entire day.
- `resource-type` - The resource type (`ec2:Instance` | `ec2:LaunchTemplate`).

Type: Array of Filter objects

Required: No

**ImageId.N**

The IDs of the images for filtering the report entries. If specified, only report entries containing these images are returned.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**ReportId.N**

The IDs of the usage reports.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: No

## Response Elements

The following elements are returned by the service.

**imageUsageReportEntrySet**

The content of the usage reports.

Type: Array of ImageUsageReportEntry objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeImageUsageReports

Describes the configuration and status of image usage reports, filtered by report IDs or image IDs.

For more information, see View your AMI usage in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `creation-time` - The time when the report was created, in the ISO 8601 format in the UTC time zone (YYYY-MM-DDThh:mm:ss.sssZ), for example, `2025-11-29T11:04:43.305Z`. You can use a wildcard (`*`), for example, `2025-11-29T*`, which matches an entire day.
- `state` - The state of the report (`available` | `pending` | `error`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**ImageId.N**

The IDs of the images for filtering the reports. If specified, only reports containing these images are returned.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**ReportId.N**

The IDs of the image usage reports.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 200 items.

Required: No

## Response Elements

The following elements are returned by the service.

**imageUsageReportSet**

The image usage reports.

Type: Array of ImageUsageReport objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeImportImageTasks

Displays details about an import virtual machine or import snapshot tasks that are already created.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filters.N**

Filter tasks using the `task-state` filter and one of the following values: `active`, `completed`, `deleting`, or `deleted`.

Type: Array of Filter objects

Required: No

**ImportTaskId.N**

The IDs of the import image tasks.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return in a single call.

Type: Integer

Required: No

**NextToken**

A token that indicates the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**importImageTaskSet**

A list of zero or more import image tasks that are currently active or were completed or canceled in the previous 7 days.

Type: Array of ImportImageTask objects

**nextToken**

The token to use to get the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeImportSnapshotTasks

Describes your import snapshot tasks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filters.N**

The filters.

Type: Array of Filter objects

Required: No

**ImportTaskId.N**

A list of import snapshot task IDs.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

**NextToken**

A token that indicates the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**importSnapshotTaskSet**

A list of zero or more import snapshot tasks that are currently active or were completed or canceled in the previous 7 days.

Type: Array of ImportSnapshotTask objects

**nextToken**

The token to use to get the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceAttribute

Describes the specified attribute of the specified instance. You can specify only one attribute at a time. Available attributes include SQL license exemption configuration for instances registered with the SQL LE service.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The instance attribute.

Note that the `enaSupport` attribute is not supported.

Type: String

Valid Values: `instanceType | kernel | ramdisk | userData | disableApiTermination | instanceInitiatedShutdownBehavior | rootDeviceName | blockDeviceMapping | productCodes | sourceDestCheck | groupSet | ebsOptimized | sriovNetSupport | enaSupport | enclaveOptions | disableApiStop`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**blockDeviceMapping**

The block device mapping of the instance.

Type: Array of InstanceBlockDeviceMapping objects

**disableApiStop**

Indicates whether stop protection is enabled for the instance.

Type: AttributeBooleanValue object

**disableApiTermination**

Indicates whether termination protection is enabled. If the value is `true`, you can't terminate the instance using the Amazon EC2 console, command line tools, or API.

Type: AttributeBooleanValue object

**ebsOptimized**

Indicates whether the instance is optimized for Amazon EBS I/O.

Type: AttributeBooleanValue object

**enaSupport**

Indicates whether enhanced networking with ENA is enabled.

Type: AttributeBooleanValue object

**enclaveOptions**

Indicates whether the instance is enabled for AWS Nitro Enclaves.

Type: EnclaveOptions object

**groupSet**

The security groups associated with the instance.

Type: Array of GroupIdentifier objects

**instanceId**

The ID of the instance.

Type: String

**instanceInitiatedShutdownBehavior**

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: AttributeValue object

**instanceType**

The instance type.

Type: AttributeValue object

**kernel**

The kernel ID.

Type: AttributeValue object

**productCodes**

The product codes.

Type: Array of ProductCode objects

**ramdisk**

The RAM disk ID.

Type: AttributeValue object

**requestId**

The ID of the request.

Type: String

**rootDeviceName**

The device name of the root device volume (for example, `/dev/sda1`).

Type: AttributeValue object

**sourceDestCheck**

Indicates whether source/destination checks are enabled.

Type: AttributeBooleanValue object

**sriovNetSupport**

Indicates whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.

Type: AttributeValue object

**userData**

The user data.

Type: AttributeValue object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example lists the instance type of the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-1234567890abcdef0
&Attribute=instanceType
&AUTHPARAMS
```

#### Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <instanceType>
```

```
    <value>t1.micro</value>
  </instanceType>
</DescribeInstanceAttributeResponse>
```

## Example 2

This example lists the current value of the `InstanceInitiatedShutdownBehavior` attribute for the specified instance.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-1234567890abcdef0
&Attribute=instanceInitiatedShutdownBehavior
&AUTHPARAMS
```

### Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <instanceInitiatedShutdownBehavior>
    <value>stop</value>
  </instanceInitiatedShutdownBehavior>
</DescribeInstanceAttributeResponse>
```

## Example 3

This example lists the current value of the `DisableApiTermination` attribute for the specified instance.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-1234567890abcdef0
&Attribute=disableApiTermination
&AUTHPARAMS
```

### Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <disableApiTermination>
    <value>false</value>
  </disableApiTermination>
</DescribeInstanceAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceConnectEndpoints

Describes the specified EC2 Instance Connect Endpoints or all EC2 Instance Connect Endpoints.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `instance-connect-endpoint-id` - The ID of the EC2 Instance Connect Endpoint.
- `state` - The state of the EC2 Instance Connect Endpoint (`create-in-progress` | `create-complete` | `create-failed` | `delete-in-progress` | `delete-complete` | `delete-failed`).
- `subnet-id` - The ID of the subnet in which the EC2 Instance Connect Endpoint was created.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `tag-value` - The value of a tag assigned to the resource. Use this filter to find all resources that have a tag with a specific value, regardless of tag key.
- `vpc-id` - The ID of the VPC in which the EC2 Instance Connect Endpoint was created.

Type: Array of Filter objects

Required: No

**InstanceConnectEndpointId.N**

One or more EC2 Instance Connect Endpoint IDs.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 50.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**instanceConnectEndpointSet**

Information about the EC2 Instance Connect Endpoints.

Type: Array of Ec2InstanceConnectEndpoint objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceCreditSpecifications

Describes the credit option for CPU usage of the specified burstable performance instances. The credit options are `standard` and `unlimited`.

If you do not specify an instance ID, Amazon EC2 returns burstable performance instances with the `unlimited` credit option, as well as instances that were previously configured as T2, T3, and T3a with the `unlimited` credit option. For example, if you resize a T2 instance, while it is configured as `unlimited`, to an M4 instance, Amazon EC2 returns the M4 instance.

If you specify one or more instance IDs, Amazon EC2 returns the credit option (`standard` or `unlimited`) of those instances. If you specify an instance ID that is not valid, such as an instance that is not a burstable performance instance, an error is returned.

Recently terminated instances might appear in the returned results. This interval is usually less than one hour.

If an Availability Zone is experiencing a service disruption and you specify instance IDs in the affected zone, or do not specify any instance IDs at all, the call fails. If you specify only instance IDs in an unaffected zone, the call works normally.

For more information, see Burstable performance instances in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `instance-id` - The ID of the instance.

Type: Array of Filter objects

Required: No

**InstanceId.N**

The instance IDs.

Default: Describes all your instances.

Constraints: Maximum 1000 explicitly specified instance IDs.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

You cannot specify this parameter and the instance IDs parameter in the same call.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**instanceCreditSpecificationSet**

Information about the credit option for CPU usage of an instance.

Type: Array of InstanceCreditSpecification objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This request describes the current credit option for CPU usage of the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceCreditSpecifications
&InstanceId.1=i-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<DescribeInstanceCreditSpecificationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>1b234b5c-d6ef-7gh8-90i1-j2345678901</requestId>
    <instanceCreditSpecificationSet>
        <item>
```

```
            <cpuCredits>unlimited</cpuCredits>
            <instanceId>i-1234567890abcdef0</instanceId>
        </item>
    </instanceCreditSpecificationSet>
</DescribeInstanceCreditSpecificationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceEventNotificationAttributes

Describes the tag keys that are registered to appear in scheduled event notifications for resources in the current Region.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**instanceTagAttribute**

Information about the registered tag keys.

Type: InstanceTagNotificationAttribute object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceEventWindows

Describes the specified event windows or all event windows.

If you specify event window IDs, the output includes information for only the specified event windows. If you specify filters, the output includes information for only those event windows that meet the filter criteria. If you do not specify event windows IDs or filters, the output includes information for all event windows, which can affect performance. We recommend that you use pagination to ensure that the operation returns quickly and successfully.

For more information, see Define event windows for scheduled events in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `dedicated-host-id` - The event windows associated with the specified Dedicated Host ID.
- `event-window-name` - The event windows associated with the specified names.
- `instance-id` - The event windows associated with the specified instance ID.
- `instance-tag` - The event windows associated with the specified tag and value.
- `instance-tag-key` - The event windows associated with the specified tag key, regardless of the value.
- `instance-tag-value` - The event windows associated with the specified tag value, regardless of the key.

- `tag:<key>` - The key/value combination of a tag assigned to the event window. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `CMX`, specify `tag:Owner` for the filter name and `CMX` for the filter value.
- `tag-key` - The key of a tag assigned to the event window. Use this filter to find all event windows that have a tag with a specific key, regardless of the tag value.
- `tag-value` - The value of a tag assigned to the event window. Use this filter to find all event windows that have a tag with a specific value, regardless of the tag key.

Type: Array of Filter objects

Required: No

**InstanceEventWindowId.N**

The IDs of the event windows.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. This value can be between 20 and 500. You cannot specify this parameter and the event window IDs parameter in the same call.

Type: Integer

Valid Range: Minimum value of 20. Maximum value of 500.

Required: No

**NextToken**

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**instanceEventWindowSet**

Information about the event windows.

Type: Array of InstanceEventWindow objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceImageMetadata

Describes the AMI that was used to launch an instance, even if the AMI is deprecated, deregistered, made private (no longer public or shared with your account), or not allowed.

If you specify instance IDs, the output includes information for only the specified instances. If you specify filters, the output includes information for only those instances that meet the filter criteria. If you do not specify instance IDs or filters, the output includes information for all instances, which can affect performance.

If you specify an instance ID that is not valid, an instance that doesn't exist, or an instance that you do not own, an error (`InvalidInstanceID.NotFound`) is returned.

Recently terminated instances might appear in the returned results. This interval is usually less than one hour.

In the rare case where an Availability Zone is experiencing a service disruption and you specify instance IDs that are in the affected Availability Zone, or do not specify any instance IDs at all, the call fails. If you specify only instance IDs that are in an unaffected Availability Zone, the call works normally.

> **Note**
>
> The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `availability-zone` - The name of the Availability Zone (for example, `us-west-2a`) or Local Zone (for example, `us-west-2-lax-1b`) of the instance.
- `instance-id` - The ID of the instance.
- `image-allowed` - A Boolean that indicates whether the image meets the criteria specified for Allowed AMIs.
- `instance-state-name` - The state of the instance (`pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`).
- `instance-type` - The type of instance (for example, `t3.micro`).
- `launch-time` - The time when the instance was launched, in the ISO 8601 format in the UTC time zone (YYYY-MM-DDThh:mm:ss.sssZ), for example, `2023-09-29T11:04:43.305Z`. You can use a wildcard (`*`), for example, `2023-09-29T*`, which matches an entire day.
- `owner-alias` - The owner alias (`amazon` | `aws-marketplace` | `aws-backup-vault`). The valid aliases are defined in an Amazon-maintained list. This is not the AWS account alias that can be set using the IAM console. We recommend that you use the `Owner` request parameter instead of this filter.
- `owner-id` - The AWS account ID of the owner. We recommend that you use the `Owner` request parameter instead of this filter.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `zone-id` - The ID of the Availability Zone (for example, `usw2-az2`) or Local Zone (for example, `usw2-lax1-az1`) of the instance.

Type: Array of Filter objects

Required: No

**InstanceId.N**

The instance IDs.

If you don't specify an instance ID or filters, the output includes information for all instances.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Default: 1000

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**instanceImageMetadataSet**

Information about the instance and the AMI used to launch the instance.

Type: Array of InstanceImageMetadata objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstances

Describes the specified instances or all instances.

If you specify instance IDs, the output includes information for only the specified instances. If you specify filters, the output includes information for only those instances that meet the filter criteria. If you do not specify instance IDs or filters, the output includes information for all instances, which can affect performance. We recommend that you use pagination to ensure that the operation returns quickly and successfully.

The response includes SQL license exemption status information for instances registered with the SQL LE service, providing visibility into license exemption configuration and status.

If you specify an instance ID that is not valid, an error is returned. If you specify an instance that you do not own, it is not included in the output.

Recently terminated instances might appear in the returned results. This interval is usually less than one hour.

If you describe instances in the rare case where an Availability Zone is experiencing a service disruption and you specify instance IDs that are in the affected zone, or do not specify any instance IDs at all, the call fails. If you describe instances and specify only instance IDs that are in an unaffected zone, the call works normally.

The Amazon EC2 API follows an eventual consistency model. This means that the result of an API command you run that creates or modifies resources might not be immediately available to all subsequent commands you run. For guidance on how to manage eventual consistency, see Eventual consistency in the Amazon EC2 API in the *Amazon EC2 Developer Guide*.

**Important**

We strongly recommend using only paginated requests. Unpaginated requests are susceptible to throttling and timeouts.

**Note**

The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `affinity` - The affinity setting for an instance running on a Dedicated Host (`default` | `host`).
- `architecture` - The instance architecture (`i386` | `x86_64` | `arm64`).
- `availability-zone` - The Availability Zone of the instance.
- `availability-zone-id` - The ID of the Availability Zone of the instance.
- `block-device-mapping.attach-time` - The attach time for an EBS volume mapped to the instance, for example, `2022-09-15T17:15:20.000Z`.
- `block-device-mapping.delete-on-termination` - A Boolean that indicates whether the EBS volume is deleted on instance termination.
- `block-device-mapping.device-name` - The device name specified in the block device mapping (for example, `/dev/sdh` or `xvdh`).
- `block-device-mapping.status` - The status for the EBS volume (`attaching` | `attached` | `detaching` | `detached`).
- `block-device-mapping.volume-id` - The volume ID of the EBS volume.
- `boot-mode` - The boot mode that was specified by the AMI (`legacy-bios` | `uefi` | `uefi-preferred`).
- `capacity-reservation-id` - The ID of the Capacity Reservation into which the instance was launched.

- capacity-reservation-specification.capacity-reservation-preference - The instance's Capacity Reservation preference (open | none).
- capacity-reservation-specification.capacity-reservation-target.capacity-reservation-id - The ID of the targeted Capacity Reservation.
- capacity-reservation-specification.capacity-reservation-target.capacity-reservation-resource-group-arn - The ARN of the targeted Capacity Reservation group.
- client-token - The idempotency token you provided when you launched the instance.
- current-instance-boot-mode - The boot mode that is used to launch the instance at launch or start (legacy-bios | uefi).
- dns-name - The public DNS name of the instance.
- ebs-optimized - A Boolean that indicates whether the instance is optimized for Amazon EBS I/O.
- ena-support - A Boolean that indicates whether the instance is enabled for enhanced networking with ENA.
- enclave-options.enabled - A Boolean that indicates whether the instance is enabled for AWS Nitro Enclaves.
- hibernation-options.configured - A Boolean that indicates whether the instance is enabled for hibernation. A value of true means that the instance is enabled for hibernation.
- host-id - The ID of the Dedicated Host on which the instance is running, if applicable.
- hypervisor - The hypervisor type of the instance (ovm | xen). The value xen is used for both Xen and Nitro hypervisors.
- iam-instance-profile.arn - The instance profile associated with the instance. Specified as an ARN.
- iam-instance-profile.id - The instance profile associated with the instance. Specified as an ID.
- image-id - The ID of the image used to launch the instance.
- instance-id - The ID of the instance.
- instance-lifecycle - Indicates whether this is a Spot Instance, a Scheduled Instance, or a Capacity Block (spot | scheduled | capacity-block).
- instance-state-code - The state of the instance, as a 16-bit unsigned integer. The high byte is used for internal purposes and should be ignored. The low byte is set based on the

state represented. The valid values are: 0 (pending), 16 (running), 32 (shutting-down), 48 (terminated), 64 (stopping), and 80 (stopped).

- `instance-state-name` - The state of the instance (`pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`).
- `instance-type` - The type of instance (for example, `t2.micro`).
- `instance.group-id` - The ID of the security group for the instance.
- `instance.group-name` - The name of the security group for the instance.
- `ip-address` - The public IPv4 address of the instance.
- `ipv6-address` - The IPv6 address of the instance.
- `kernel-id` - The kernel ID.
- `key-name` - The name of the key pair used when the instance was launched.
- `launch-index` - When launching multiple instances, this is the index for the instance in the launch group (for example, 0, 1, 2, and so on).
- `launch-time` - The time when the instance was launched, in the ISO 8601 format in the UTC time zone (YYYY-MM-DDThh:mm:ss.sssZ), for example, `2021-09-29T11:04:43.305Z`. You can use a wildcard (`*`), for example, `2021-09-29T*`, which matches an entire day.
- `maintenance-options.auto-recovery` - The current automatic recovery behavior of the instance (`disabled` | `default`).
- `metadata-options.http-endpoint` - The status of access to the HTTP metadata endpoint on your instance (`enabled` | `disabled`)
- `metadata-options.http-protocol-ipv4` - Indicates whether the IPv4 endpoint is enabled (`disabled` | `enabled`).
- `metadata-options.http-protocol-ipv6` - Indicates whether the IPv6 endpoint is enabled (`disabled` | `enabled`).
- `metadata-options.http-put-response-hop-limit` - The HTTP metadata request put response hop limit (integer, possible values 1 to 64)
- `metadata-options.http-tokens` - The metadata request authorization state (`optional` | `required`)
- `metadata-options.instance-metadata-tags` - The status of access to instance tags from the instance metadata (`enabled` | `disabled`)
- `metadata-options.state` - The state of the metadata option changes (`pending` | `applied`).

- monitoring-state - Indicates whether detailed monitoring is enabled (disabled | enabled).
- network-interface.addresses.association.allocation-id - The allocation ID.
- network-interface.addresses.association.association-id - The association ID.
- network-interface.addresses.association.carrier-ip - The carrier IP address.
- network-interface.addresses.association.customer-owned-ip - The customer-owned IP address.
- network-interface.addresses.association.ip-owner-id - The owner ID of the private IPv4 address associated with the network interface.
- network-interface.addresses.association.public-dns-name - The public DNS name.
- network-interface.addresses.association.public-ip - The ID of the association of an Elastic IP address (IPv4) with a network interface.
- network-interface.addresses.primary - Specifies whether the IPv4 address of the network interface is the primary private IPv4 address.
- network-interface.addresses.private-dns-name - The private DNS name.
- network-interface.addresses.private-ip-address - The private IPv4 address associated with the network interface.
- network-interface.association.allocation-id - The allocation ID returned when you allocated the Elastic IP address (IPv4) for your network interface.
- network-interface.association.association-id - The association ID returned when the network interface was associated with an IPv4 address.
- network-interface.association.carrier-ip - The customer-owned IP address.
- network-interface.association.customer-owned-ip - The customer-owned IP address.
- network-interface.association.ip-owner-id - The owner of the Elastic IP address (IPv4) associated with the network interface.
- network-interface.association.public-dns-name - The public DNS name.
- network-interface.association.public-ip - The address of the Elastic IP address (IPv4) bound to the network interface.
- network-interface.attachment.attach-time - The time that the network interface was attached to an instance.

- network-interface.attachment.attachment-id - The ID of the interface attachment.
- network-interface.attachment.delete-on-termination - Specifies whether the attachment is deleted when an instance is terminated.
- network-interface.attachment.device-index - The device index to which the network interface is attached.
- network-interface.attachment.instance-id - The ID of the instance to which the network interface is attached.
- network-interface.attachment.instance-owner-id - The owner ID of the instance to which the network interface is attached.
- network-interface.attachment.network-card-index - The index of the network card.
- network-interface.attachment.status - The status of the attachment (attaching | attached | detaching | detached).
- network-interface.availability-zone - The Availability Zone for the network interface.
- network-interface.deny-all-igw-traffic - A Boolean that indicates whether a network interface with an IPv6 address is unreachable from the public internet.
- network-interface.description - The description of the network interface.
- network-interface.group-id - The ID of a security group associated with the network interface.
- network-interface.group-name - The name of a security group associated with the network interface.
- network-interface.ipv4-prefixes.ipv4-prefix - The IPv4 prefixes that are assigned to the network interface.
- network-interface.ipv6-address - The IPv6 address associated with the network interface.
- network-interface.ipv6-addresses.ipv6-address - The IPv6 address associated with the network interface.
- network-interface.ipv6-addresses.is-primary-ipv6 - A Boolean that indicates whether this is the primary IPv6 address.
- network-interface.ipv6-native - A Boolean that indicates whether this is an IPv6 only network interface.

- network-interface.ipv6-prefixes.ipv6-prefix - The IPv6 prefix assigned to the network interface.
- network-interface.mac-address - The MAC address of the network interface.
- network-interface.network-interface-id - The ID of the network interface.
- network-interface.operator.managed - A Boolean that indicates whether the instance has a managed network interface.
- network-interface.operator.principal - The principal that manages the network interface. Only valid for instances with managed network interfaces, where managed is true.
- network-interface.outpost-arn - The ARN of the Outpost.
- network-interface.owner-id - The ID of the owner of the network interface.
- network-interface.private-dns-name - The private DNS name of the network interface.
- network-interface.private-ip-address - The private IPv4 address.
- network-interface.public-dns-name - The public DNS name.
- network-interface.requester-id - The requester ID for the network interface.
- network-interface.requester-managed - Indicates whether the network interface is being managed by AWS.
- network-interface.status - The status of the network interface (available) | in-use).
- network-interface.source-dest-check - Whether the network interface performs source/destination checking. A value of true means that checking is enabled, and false means that checking is disabled. The value must be false for the network interface to perform network address translation (NAT) in your VPC.
- network-interface.subnet-id - The ID of the subnet for the network interface.
- network-interface.tag-key - The key of a tag assigned to the network interface.
- network-interface.tag-value - The value of a tag assigned to the network interface.
- network-interface.vpc-id - The ID of the VPC for the network interface.
- network-performance-options.bandwidth-weighting - Where the performance boost is applied, if applicable. Valid values: default, vpc-1, ebs-1.
- operator.managed - A Boolean that indicates whether this is a managed instance.
- operator.principal - The principal that manages the instance. Only valid for managed instances, where managed is true.

- `outpost-arn` - The Amazon Resource Name (ARN) of the Outpost.
- `owner-id` - The AWS account ID of the instance owner.
- `placement-group-name` - The name of the placement group for the instance.
- `placement-partition-number` - The partition in which the instance is located.
- `platform` - The platform. To list only Windows instances, use `windows`.
- `platform-details` - The platform (`Linux/UNIX` | `Red Hat BYOL Linux` | `Red Hat Enterprise Linux` | `Red Hat Enterprise Linux with HA` | `Red Hat Enterprise Linux with High Availability` | `Red Hat Enterprise Linux with SQL Server Standard and HA` | `Red Hat Enterprise Linux with SQL Server Enterprise and HA` | `Red Hat Enterprise Linux with SQL Server Standard` | `Red Hat Enterprise Linux with SQL Server Web` | `Red Hat Enterprise Linux with SQL Server Enterprise` | `SQL Server Enterprise` | `SQL Server Standard` | `SQL Server Web` | `SUSE Linux` | `Ubuntu Pro` | `Windows` | `Windows BYOL` | `Windows with SQL Server Enterprise` | `Windows with SQL Server Standard` | `Windows with SQL Server Web`).
- `private-dns-name` - The private IPv4 DNS name of the instance.
- `private-dns-name-options.enable-resource-name-dns-a-record` - A Boolean that indicates whether to respond to DNS queries for instance hostnames with DNS A records.
- `private-dns-name-options.enable-resource-name-dns-aaaa-record` - A Boolean that indicates whether to respond to DNS queries for instance hostnames with DNS AAAA records.
- `private-dns-name-options.hostname-type` - The type of hostname (`ip-name` | `resource-name`).
- `private-ip-address` - The private IPv4 address of the instance. This can only be used to filter by the primary IP address of the network interface attached to the instance. To filter by additional IP addresses assigned to the network interface, use the filter `network-interface.addresses.private-ip-address`.
- `product-code` - The product code associated with the AMI used to launch the instance.
- `product-code.type` - The type of product code (`devpay` | `marketplace`).
- `ramdisk-id` - The RAM disk ID.
- `reason` - The reason for the current state of the instance (for example, shows "User Initiated [date]" when you stop or terminate the instance). Similar to the state-reason-code filter.

- `requester-id` - The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on).
- `reservation-id` - The ID of the instance's reservation. A reservation ID is created any time you launch an instance. A reservation ID has a one-to-one relationship with an instance launch request, but can be associated with more than one instance if you launch multiple instances using the same launch request. For example, if you launch one instance, you get one reservation ID. If you launch ten instances using the same launch request, you also get one reservation ID.
- `root-device-name` - The device name of the root device volume (for example, `/dev/sda1`).
- `root-device-type` - The type of the root device volume (`ebs` | `instance-store`).
- `source-dest-check` - Indicates whether the instance performs source/destination checking. A value of `true` means that checking is enabled, and `false` means that checking is disabled. The value must be `false` for the instance to perform network address translation (NAT) in your VPC.
- `spot-instance-request-id` - The ID of the Spot Instance request.
- `state-reason-code` - The reason code for the state change.
- `state-reason-message` - A message that describes the state change.
- `subnet-id` - The ID of the subnet for the instance.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources that have a tag with a specific key, regardless of the tag value.
- `tenancy` - The tenancy of an instance (`dedicated` | `default` | `host`).
- `tpm-support` - Indicates if the instance is configured for NitroTPM support (`v2.0`).
- `usage-operation` - The usage operation value for the instance (`RunInstances` | `RunInstances:00g0` | `RunInstances:0010` | `RunInstances:1010` | `RunInstances:1014` | `RunInstances:1110` | `RunInstances:0014` | `RunInstances:0210` | `RunInstances:0110` | `RunInstances:0100` | `RunInstances:0004` | `RunInstances:0200` | `RunInstances:000g` | `RunInstances:0g00` | `RunInstances:0002` | `RunInstances:0800` | `RunInstances:0102` | `RunInstances:0006` | `RunInstances:0202`).

- `usage-operation-update-time` - The time that the usage operation was last updated, for example, `2022-09-15T17:15:20.000Z`.
- `virtualization-type` - The virtualization type of the instance (`paravirtual` | `hvm`).
- `vpc-id` - The ID of the VPC that the instance is running in.

Type: Array of Filter objects

Required: No

**IncludeManagedResources**

Indicates whether to include managed resources in the output. If this parameter is set to `true`, the output includes resources that are managed by AWS services, even if managed resource visibility is set to hidden.

Type: Boolean

Required: No

**InstanceId.N**

The instance IDs.

Default: Describes all your instances.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

You cannot specify this parameter and the instance IDs parameter in the same request.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**reservationSet**

Information about the reservations.

Type: Array of Reservation objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1: Describe all instances

This example describes all instances owned by your AWS account in the current Region. It uses pagination. The first example request gets the first page of results. The second example request uses the token returned by the previous request. Continue until there are no more results.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&MaxResults=10
&AUTHPARAMS
```

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&MaxResults=10
&NextToken=eyJOZXh0VG9rZW4iOiBudWxsLCAiYm90b190cnVuY2F0ZV9hbW91bnQiEXAMPLE=
&AUTHPARAMS
```

## Example 2: Describe an instance

This example describes the specified instance.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&InstanceId.1=i-1234567890abcdef0
&AUTHPARAMS
```

### Sample Response

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>8f7724cf-496f-496e-8fe3-example</requestId>
    <reservationSet>
        <item>
            <reservationId>r-1234567890abcdef0</reservationId>
            <ownerId>123456789012</ownerId>
            <groupSet/>
            <instancesSet>
                <item>
                    <instanceId>i-1234567890abcdef0</instanceId>
                    <imageId>ami-bff32ccc</imageId>
                    <instanceState>
                        <code>16</code>
                        <name>running</name>
                    </instanceState>
                    <privateDnsName>ip-192-168-1-88.eu-west-1.compute.internal</
privateDnsName>
                    <dnsName>ec2-54-194-252-215.eu-west-1.compute.amazonaws.com</
dnsName>
                    <reason/>
                    <keyName>my_keypair</keyName>
                    <amiLaunchIndex>0</amiLaunchIndex>
                    <productCodes/>
                    <instanceType>t2.micro</instanceType>
```

```
                    <launchTime>2018-05-08T16:46:19.000Z</launchTime>
                    <placement>
                        <availabilityZone>eu-west-1c</availabilityZone>
                        <groupName/>
                        <tenancy>default</tenancy>
                    </placement>
                    <monitoring>
                        <state>disabled</state>
                    </monitoring>
                    <subnetId>subnet-56f5f633</subnetId>
                    <vpcId>vpc-11112222</vpcId>
                    <privateIpAddress>192.168.1.88</privateIpAddress>
                    <ipAddress>54.194.252.215</ipAddress>
                    <sourceDestCheck>true</sourceDestCheck>
                    <groupSet>
                        <item>
                            <groupId>sg-e4076980</groupId>
                            <groupName>SecurityGroup1</groupName>
                        </item>
                    </groupSet>
                    <architecture>x86_64</architecture>
                    <rootDeviceType>ebs</rootDeviceType>
                    <rootDeviceName>/dev/xvda</rootDeviceName>
                    <blockDeviceMapping>
                        <item>
                            <deviceName>/dev/xvda</deviceName>
                            <ebs>
                                <volumeId>vol-1234567890abcdef0</volumeId>
                                <status>attached</status>
                                <attachTime>2015-12-22T10:44:09.000Z</attachTime>
                                <deleteOnTermination>true</deleteOnTermination>
                            </ebs>
                        </item>
                    </blockDeviceMapping>
                    <virtualizationType>hvm</virtualizationType>
                    <clientToken>xMcwG14507example</clientToken>
                    <tagSet>
                        <item>
                            <key>Name</key>
                            <value>Server_1</value>
                        </item>
                    </tagSet>
                    <hypervisor>xen</hypervisor>
                    <networkInterfaceSet>
```

```
                        <item>
                            <networkInterfaceId>eni-551ba033</networkInterfaceId>
                            <subnetId>subnet-56f5f633</subnetId>
                            <vpcId>vpc-11112222</vpcId>
                            <description>Primary network interface</description>
                            <ownerId>123456789012</ownerId>
                            <status>in-use</status>
                            <macAddress>02:dd:2c:5e:01:69</macAddress>
                            <privateIpAddress>192.168.1.88</privateIpAddress>
                            <privateDnsName>ip-192-168-1-88.eu-
west-1.compute.internal</privateDnsName>
                            <sourceDestCheck>true</sourceDestCheck>
                            <groupSet>
                                <item>
                                    <groupId>sg-e4076980</groupId>
                                    <groupName>SecurityGroup1</groupName>
                                </item>
                            </groupSet>
                            <attachment>
                                <attachmentId>eni-attach-39697adc</attachmentId>
                                <deviceIndex>0</deviceIndex>
                                <status>attached</status>
                                <attachTime>2018-05-08T16:46:19.000Z</attachTime>
                                <deleteOnTermination>true</deleteOnTermination>
                            </attachment>
                            <association>
                                <publicIp>54.194.252.215</publicIp>
                                <publicDnsName>ec2-54-194-252-215.eu-
west-1.compute.amazonaws.com</publicDnsName>
                                <ipOwnerId>amazon</ipOwnerId>
                            </association>
                            <privateIpAddressesSet>
                                <item>
                                    <privateIpAddress>192.168.1.88</privateIpAddress>
                                    <privateDnsName>ip-192-168-1-88.eu-
west-1.compute.internal</privateDnsName>
                                    <primary>true</primary>
                                    <association>
                                    <publicIp>54.194.252.215</publicIp>
                                    <publicDnsName>ec2-54-194-252-215.eu-
west-1.compute.amazonaws.com</publicDnsName>
                                    <ipOwnerId>amazon</ipOwnerId>
                                    </association>
                                </item>
```

```
                            </privateIpAddressesSet>
                            <ipv6AddressesSet>
                               <item>
                                   <ipv6Address>2001:db8:1234:1a2b::123</ipv6Address>
                               </item>
                            </ipv6AddressesSet>
                        </item>
                    </networkInterfaceSet>
                    <iamInstanceProfile>
                        <arn>arn:aws:iam::123456789012:instance-profile/AdminRole</arn>
                        <id>ABCAJEDNCAA64SSD123AB</id>
                    </iamInstanceProfile>
                    <ebsOptimized>false</ebsOptimized>
                    <cpuOptions>
                        <coreCount>1</coreCount>
                        <threadsPerCore>1</threadsPerCore>
                    </cpuOptions>
                </item>
            </instancesSet>
        </item>
    </reservationSet>
</DescribeInstancesResponse>
```

## Example 3: Filter by instance type

This example describes only the instances that have the `m1.small` or `m1.large` instance type and an attached Amazon EBS volume to be deleted on termination.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-type
&Filter.1.Value.1=m1.small
&Filter.1.Value.2=m1.large
&Filter.2.Name=block-device-mapping.status
&Filter.2.Value.1=attached
&Filter.3.Name=block-device-mapping.delete-on-termination
&Filter.3.Value.1=true
&AUTHPARAMS
```

## Example 4: Filter by VPC

This example describes all instances that are running in the specified VPC.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=vpc-id
&Filter.1.Value.1=*
&AUTHPARAMS
```

## Example 5: Filter by tag key

This example describes any instances that have a tag with the key `Owner`, regardless of the value of the tag.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=tag-key
&Filter.1.Value.1=Owner
&AUTHPARAMS
```

## Example 6: Filter by tag key and value

This example lists only the instances that have a tag with the key `Owner` and the value `DbAdmin`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=tag:Owner
&Filter.1.Value.1=DbAdmin
&AUTHPARAMS
```

## Example 7: Filter by placement group

This example describes any instances that are in the placement group with the name `HDFS-Group-A`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=placement-group-name
&Filter.1.Value=HDFS-Group-A
```

```
&AUTHPARAMS
```

## Example 8: Filter by placement group partition

This example describes only the instances that are in partition 2 of the placement group with the name HDFS-Group-A.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=placement-group-name
&Filter.1.Value=HDFS-Group-A
&Filter.2.Name=placement-partition-number
&Filter.2.Value=2
&AUTHPARAMS
```

## Example 9: Filter by metadata authentication

The following example displays details about your instances that are not using any token header authentication requirement to access instance metadata. The response is truncated to show only the relevant pieces.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.Name=metadata-options.http-tokens
&Filter.Values=optional
&AUTHPARAMS
```

### Sample Response

```
<DescribeInstances xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <instanceId>i-1234567890abcdef0</instanceId>
    <MetadataOptions>
          <state>applied</state>
          <HttpTokens>optional</HttpTokens>
          <HttpPutResponseHopLimit>1</HttpPutResponseHopLimit>
          <HttpEndpoint>enabled</HttpEndpoint>
    </MetadataOptions>
</DescribeInstances>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceSqlHaHistoryStates

Describes the historical SQL Server High Availability states for Amazon EC2 instances that are enabled for Amazon EC2 High Availability for SQL Server monitoring.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndTime**

The end data and time of the period for which to get historical SQL Server High Availability states. If omitted, the API returns historical states up to the current date and time.

Timezone: UTC

Format: `YYYY-MM-DDThh:mm:ss.sssZ`

Type: Timestamp

Required: No

**Filter.N**

One or more filters to apply to the results. Supported filters include:

- `tag:<key>` - The tag key and value pair assigned to the instance. For example, to find all instances tagged with `Owner:TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The tag key assigned to the instance.
- `haStatus` - The SQL Server High Availability status of the SQL Server High Availability instance (`processing` | `active` | `standby` | `invalid`).

- `sqlServerLicenseUsage` - The license type for the SQL Server license (`full` | `waived`).

Type: Array of Filter objects

Required: No

**InstanceId.N**

The IDs of the SQL Server High Availability instances to describe. If omitted, the API returns historical states for all SQL Server High Availability instances.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

**StartTime**

The start data and time of the period for which to get the historical SQL Server High Availability states. If omitted, the API returns all available historical states.

Timezone: UTC

Format: `YYYY-MM-DDThh:mm:ss.sssZ`

Type: Timestamp

Required: No

## Response Elements

The following elements are returned by the service.

**instanceSet**

Information about the historical SQL Server High Availability states of the SQL Server High Availability instances.

Type: Array of RegisteredInstance objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceSqlHaStates

Describes the SQL Server High Availability states for Amazon EC2 instances that are enabled for Amazon EC2 High Availability for SQL Server monitoring.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to apply to the results. Supported filters include:

- `tag:<key>` - The tag key and value pair assigned to the instance. For example, to find all instances tagged with `Owner:TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The tag key assigned to the instance.
- `haStatus` - The SQL Server High Availability status of the SQL Server High Availability instance (`processing` | `active` | `standby` | `invalid`).
- `sqlServerLicenseUsage` - The license type for the SQL Server license (`full` | `waived`).

Type: Array of Filter objects

Required: No

**InstanceId.N**

The IDs of the SQL Server High Availability instances to describe. If omitted, the API returns SQL Server High Availability states for all SQL Server High Availability instances.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**instanceSet**

Information about the SQL Server High Availability instances.

Type: Array of RegisteredInstance objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceStatus

Describes the status of the specified instances or all of your instances. By default, only running instances are described, unless you specifically indicate to return the status of all instances.

Instance status includes the following components:

- **Status checks** - Amazon EC2 performs status checks on running EC2 instances to identify hardware and software issues. For more information, see Status checks for your instances and Troubleshoot instances with failed status checks in the *Amazon EC2 User Guide*.
- **Scheduled events** - Amazon EC2 can schedule events (such as reboot, stop, or terminate) for your instances related to hardware issues, software updates, or system maintenance. For more information, see Scheduled events for your instances in the *Amazon EC2 User Guide*.
- **Instance state** - You can manage your instances from the moment you launch them through their termination. For more information, see Instance lifecycle in the *Amazon EC2 User Guide*.

The Amazon EC2 API follows an eventual consistency model. This means that the result of an API command you run that creates or modifies resources might not be immediately available to all subsequent commands you run. For guidance on how to manage eventual consistency, see Eventual consistency in the Amazon EC2 API in the *Amazon EC2 Developer Guide*.

> **Note**
>
> The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `availability-zone` - The Availability Zone of the instance.
- `availability-zone-id` - The ID of the Availability Zone of the instance.
- `event.code` - The code for the scheduled event (`instance-reboot` | `system-reboot` | `system-maintenance` | `instance-retirement` | `instance-stop`).
- `event.description` - A description of the event.
- `event.instance-event-id` - The ID of the event whose date and time you are modifying.
- `event.not-after` - The latest end time for the scheduled event (for example, `2014-09-15T17:15:20.000Z`).
- `event.not-before` - The earliest start time for the scheduled event (for example, `2014-09-15T17:15:20.000Z`).
- `event.not-before-deadline` - The deadline for starting the event (for example, `2014-09-15T17:15:20.000Z`).
- `instance-state-code` - The code for the instance state, as a 16-bit unsigned integer. The high byte is used for internal purposes and should be ignored. The low byte is set based on the state represented. The valid values are 0 (pending), 16 (running), 32 (shutting-down), 48 (terminated), 64 (stopping), and 80 (stopped).
- `instance-state-name` - The state of the instance (`pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`).
- `instance-status.reachability` - Filters on instance status where the name is `reachability` (`passed` | `failed` | `initializing` | `insufficient-data`).
- `instance-status.status` - The status of the instance (ok | `impaired` | `initializing` | `insufficient-data` | `not-applicable`).
- `operator.managed` - A Boolean that indicates whether this is a managed instance.
- `operator.principal` - The principal that manages the instance. Only valid for managed instances, where `managed` is `true`.
- `system-status.reachability` - Filters on system status where the name is `reachability` (`passed` | `failed` | `initializing` | `insufficient-data`).

- `system-status.status` - The system status of the instance (ok | `impaired` | `initializing` | `insufficient-data` | `not-applicable`).
- `attached-ebs-status.status` - The status of the attached EBS volume for the instance (ok | `impaired` | `initializing` | `insufficient-data` | `not-applicable`).

Type: Array of Filter objects

Required: No

**IncludeAllInstances**

When `true`, includes the health status for all instances. When `false`, includes the health status for running instances only.

Default: `false`

Type: Boolean

Required: No

**IncludeManagedResources**

Indicates whether to include managed resources in the output. If this parameter is set to `true`, the output includes resources that are managed by AWS services, even if managed resource visibility is set to hidden.

Type: Boolean

Required: No

**InstanceId.N**

The instance IDs.

Default: Describes all your instances.

Constraints: Maximum 100 explicitly specified instance IDs.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

You cannot specify this parameter and the instance IDs parameter in the same request.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**instanceStatusSet**

Information about the status of the instances.

Type: Array of InstanceStatus objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example returns instance status descriptions for all running instances.

### Sample Request

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&AUTHPARAMS
```

## Example 2

This example returns instance status descriptions for the specified instances.

### Sample Request

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS
```

## Example 3

This example returns instance status descriptions for all instances specified by supported DescribeInstanceStatus filters.

### Sample Request

```
https://ec2.amazonaws.com/?
Action=DescribeInstanceStatus
&Filter.1.Name=system-status.reachability
&Filter.1.Value.failed
&AUTHPARAMS
```

### Sample Response

```
<DescribeInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>3be1508e-c444-4fef-89cc-0b1223c4f02fEXAMPLE</requestId>
    <instanceStatusSet>
```

```
        <item>
            <instanceId>i-1234567890abcdef0</instanceId>
            <availabilityZone>us-east-1d</availabilityZone>
            <instanceState>
                <code>16</code>
                <name>running</name>
            </instanceState>
            <systemStatus>
                <status>impaired</status>
                <details>
                    <item>
                        <name>reachability</name>
                        <status>failed</status>
                        <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
                    </item>
                </details>
            </systemStatus>
            <instanceStatus>
                <status>impaired</status>
                <details>
                    <item>
                        <name>reachability</name>
                        <status>failed</status>
                        <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
                    </item>
                </details>
            </instanceStatus>
            <eventsSet>
              <item>
                <code>instance-retirement</code>
                <description>The instance is running on degraded hardware</description>
                <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
                <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
              </item>
            </eventsSet>
        </item>
        <item>
            <instanceId>i-0598c7d356eba48d7</instanceId>
            <availabilityZone>us-east-1d</availabilityZone>
            <instanceState>
                <code>16</code>
                <name>running</name>
            </instanceState>
            <systemStatus>
```

```
                <status>ok</status>
                <details>
                    <item>
                        <name>reachability</name>
                        <status>passed</status>
                    </item>
                </details>
            </systemStatus>
            <instanceStatus>
                <status>ok</status>
                <details>
                    <item>
                        <name>reachability</name>
                        <status>passed</status>
                    </item>
                </details>
            </instanceStatus>
            <eventsSet>
              <item>
                <code>instance-reboot</code>
                <description>The instance is scheduled for a reboot</description>
                <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
                <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
              </item>
            </eventsSet>
        </item>
        <item>
            <instanceId>i-0987654321abcdef0</instanceId>
            <availabilityZone>us-east-1d</availabilityZone>
            <instanceState>
                <code>16</code>
                <name>running</name>
            </instanceState>
            <systemStatus>
                <status>ok</status>
                <details>
                    <item>
                        <name>reachability</name>
                        <status>passed</status>
                    </item>
                </details>
            </systemStatus>
            <instanceStatus>
                <status>ok</status>
```

```
                <details>
                    <item>
                        <name>reachability</name>
                        <status>passed</status>
                    </item>
                </details>
            </instanceStatus>
        </item>
        <item>
            <instanceId>i-0598c7d356eba48d8</instanceId>
            <availabilityZone>us-east-1d</availabilityZone>
            <instanceState>
                <code>16</code>
                <name>running</name>
            </instanceState>
            <systemStatus>
                <status>ok</status>
                <details>
                    <item>
                        <name>reachability</name>
                        <status>passed</status>
                    </item>
                </details>
            </systemStatus>
            <instanceStatus>
                <status>insufficient-data</status>
                <details>
                    <item>
                        <name>reachability</name>
                        <status>insufficient-data</status>
                    </item>
                </details>
            </instanceStatus>
         </item>
    </instanceStatusSet>
</DescribeInstanceStatusResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceTopology

Describes a tree-based hierarchy that represents the physical host placement of your EC2 instances within an Availability Zone or Local Zone. You can use this information to determine the relative proximity of your EC2 instances within the AWS network to support your tightly coupled workloads.

Instance topology is supported for specific instance types only. For more information, see Prerequisites for Amazon EC2 instance topology in the *Amazon EC2 User Guide*.

> **Note**
>
> The Amazon EC2 API follows an eventual consistency model due to the distributed nature of the system supporting it. As a result, when you call the DescribeInstanceTopology API command immediately after launching instances, the response might return a `null` value for `capacityBlockId` because the data might not have fully propagated across all subsystems. For more information, see Eventual consistency in the Amazon EC2 API in the *Amazon EC2 Developer Guide*.

For more information, see Amazon EC2 topology in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `availability-zone` - The name of the Availability Zone (for example, `us-west-2a`) or Local Zone (for example, `us-west-2-lax-1b`) that the instance is in.
- `instance-type` - The instance type (for example, `p4d.24xlarge`) or instance family (for example, `p4d*`). You can use the `*` wildcard to match zero or more characters, or the `?` wildcard to match zero or one character.
- `zone-id` - The ID of the Availability Zone (for example, `usw2-az2`) or Local Zone (for example, `usw2-lax1-az1`) that the instance is in.

Type: Array of Filter objects

Required: No

**GroupName.N**

The name of the placement group that each instance is in.

Constraints: Maximum 100 explicitly specified placement group names.

Type: Array of strings

Required: No

**InstanceId.N**

The instance IDs.

Default: Describes all your instances.

Constraints: Maximum 100 explicitly specified instance IDs.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

You can't specify this parameter and the instance IDs parameter in the same request.

Default: `20`

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**instanceSet**

Information about the topology of each instance.

Type: Array of InstanceTopology objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceTypeOfferings

Lists the instance types that are offered for the specified location. If no location is specified, the default is to list the instance types that are offered in the current Region.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

- `instance-type` - The instance type. For a list of possible values, see Instance.
- `location` - The location. For a list of possible identifiers, see Regions and Zones.

Type: Array of Filter objects

Required: No

**LocationType**

The location type.

- `availability-zone` - The Availability Zone. When you specify a location filter, it must be an Availability Zone for the current Region.
- `availability-zone-id` - The AZ ID. When you specify a location filter, it must be an AZ ID for the current Region.
- `outpost` - The Outpost ARN. When you specify a location filter, it must be an Outpost ARN for the current Region.

- `region` - The current Region. If you specify a location filter, it must match the current Region.

Type: String

Valid Values: `region | availability-zone | availability-zone-id | outpost`

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**instanceTypeOfferingSet**

The instance types offered in the location.

Type: Array of InstanceTypeOffering objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInstanceTypes

Describes the specified instance types. By default, all instance types for the current Region are described. Alternatively, you can filter the results. To include instance types that are not supported in the current Region, set `IncludeUnsupportedInRegion` to `true`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

- `auto-recovery-supported` - Indicates whether Amazon CloudWatch action based recovery is supported (`true` | `false`).
- `bare-metal` - Indicates whether it is a bare metal instance type (`true` | `false`).
- `burstable-performance-supported` - Indicates whether the instance type is a burstable performance T instance type (`true` | `false`).
- `current-generation` - Indicates whether this instance type is the latest generation instance type of an instance family (`true` | `false`).
- `dedicated-hosts-supported` - Indicates whether the instance type supports Dedicated Hosts. (`true` | `false`)
- `ebs-info.attachment-limit-type` - The type of Amazon EBS volume attachment limit (`shared` | `dedicated`).
- `ebs-info.maximum-ebs-attachments` - The maximum number of Amazon EBS volumes that can be attached to the instance type.

- `ebs-info.ebs-optimized-info.baseline-bandwidth-in-mbps` - The baseline bandwidth performance for an EBS-optimized instance type, in Mbps.
- `ebs-info.ebs-optimized-info.baseline-iops` - The baseline input/output storage operations per second for an EBS-optimized instance type.
- `ebs-info.ebs-optimized-info.baseline-throughput-in-mbps` - The baseline throughput performance for an EBS-optimized instance type, in MB/s.
- `ebs-info.ebs-optimized-info.maximum-bandwidth-in-mbps` - The maximum bandwidth performance for an EBS-optimized instance type, in Mbps.
- `ebs-info.ebs-optimized-info.maximum-iops` - The maximum input/output storage operations per second for an EBS-optimized instance type.
- `ebs-info.ebs-optimized-info.maximum-throughput-in-mbps` - The maximum throughput performance for an EBS-optimized instance type, in MB/s.
- `ebs-info.ebs-optimized-support` - Indicates whether the instance type is EBS-optimized (`supported` | `unsupported` | `default`).
- `ebs-info.encryption-support` - Indicates whether EBS encryption is supported (`supported` | `unsupported`).
- `ebs-info.nvme-support` - Indicates whether non-volatile memory express (NVMe) is supported for EBS volumes (`required` | `supported` | `unsupported`).
- `free-tier-eligible` - A Boolean that indicates whether this instance type can be used under the AWS Free Tier (`true` | `false`).
- `hibernation-supported` - Indicates whether On-Demand hibernation is supported (`true` | `false`).
- `hypervisor` - The hypervisor (`nitro` | `xen`).
- `instance-storage-info.disk.count` - The number of local disks.
- `instance-storage-info.disk.size-in-gb` - The storage size of each instance storage disk, in GB.
- `instance-storage-info.disk.type` - The storage technology for the local instance storage disks (`hdd` | `ssd`).
- `instance-storage-info.encryption-support` - Indicates whether data is encrypted at rest (`required` | `supported` | `unsupported`).
- `instance-storage-info.nvme-support` - Indicates whether non-volatile memory express (NVMe) is supported for instance store (`required` | `supported` | `unsupported`).

- `instance-storage-info.total-size-in-gb` - The total amount of storage available from all local instance storage, in GB.
- `instance-storage-supported` - Indicates whether the instance type has local instance storage (`true` | `false`).
- `instance-type` - The instance type (for example `c5.2xlarge` or c5*).
- `memory-info.size-in-mib` - The memory size.
- `network-info.bandwidth-weightings` - For instances that support bandwidth weighting to boost performance (`default`, `vpc-1`, `ebs-1`).
- `network-info.efa-info.maximum-efa-interfaces` - The maximum number of Elastic Fabric Adapters (EFAs) per instance.
- `network-info.efa-supported` - Indicates whether the instance type supports Elastic Fabric Adapter (EFA) (`true` | `false`).
- `network-info.ena-support` - Indicates whether Elastic Network Adapter (ENA) is supported or required (`required` | `supported` | `unsupported`).
- `network-info.flexible-ena-queues-support` - Indicates whether an instance supports flexible ENA queues (`supported` | `unsupported`).
- `network-info.encryption-in-transit-supported` - Indicates whether the instance type automatically encrypts in-transit traffic between instances (`true` | `false`).
- `network-info.ipv4-addresses-per-interface` - The maximum number of private IPv4 addresses per network interface.
- `network-info.ipv6-addresses-per-interface` - The maximum number of private IPv6 addresses per network interface.
- `network-info.ipv6-supported` - Indicates whether the instance type supports IPv6 (`true` | `false`).
- `network-info.maximum-network-cards` - The maximum number of network cards per instance.
- `network-info.maximum-network-interfaces` - The maximum number of network interfaces per instance.
- `network-info.network-performance` - The network performance (for example, "25 Gigabit").
- `nitro-enclaves-support` - Indicates whether Nitro Enclaves is supported (`supported` | `unsupported`).

- `nitro-tpm-support` - Indicates whether NitroTPM is supported (`supported` | `unsupported`).
- `nitro-tpm-info.supported-versions` - The supported NitroTPM version (`2.0`).
- `processor-info.supported-architecture` - The CPU architecture (`arm64` | `i386` | `x86_64`).
- `processor-info.sustained-clock-speed-in-ghz` - The CPU clock speed, in GHz.
- `processor-info.supported-features` - The supported CPU features (`amd-sev-snp`).
- `reboot-migration-support` - Indicates whether enabling reboot migration is supported (`supported` | `unsupported`).
- `supported-boot-mode` - The boot mode (`legacy-bios` | `uefi`).
- `supported-root-device-type` - The root device type (`ebs` | `instance-store`).
- `supported-usage-class` - The usage class (`on-demand` | `spot` | `capacity-block`).
- `supported-virtualization-type` - The virtualization type (`hvm` | `paravirtual`).
- `vcpu-info.default-cores` - The default number of cores for the instance type.
- `vcpu-info.default-threads-per-core` - The default number of threads per core for the instance type.
- `vcpu-info.default-vcpus` - The default number of vCPUs for the instance type.
- `vcpu-info.valid-cores` - The number of cores that can be configured for the instance type.
- `vcpu-info.valid-threads-per-core` - The number of threads per core that can be configured for the instance type. For example, "1" or "1,2".

Type: Array of Filter objects

Required: No

**IncludeUnsupportedInRegion**

If `true`, the response includes instance types that are not supported in the current Region, in addition to the supported types. Default: `false`.

Type: Boolean

Required: No

**InstanceType.N**

The instance types.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 100 items.

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge |

i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge |

r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal

| x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge

| m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large

| m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 100.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**instanceTypeSet**

The instance type.

Type: Array of InstanceTypeInfo objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeInternetGateways

Describes your internet gateways. The default is to describe all your internet gateways. Alternatively, you can specify specific internet gateway IDs or filter the results to include only the internet gateways that match specific criteria.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `attachment.state` - The current state of the attachment between the gateway and the VPC (`available`). Present only if a VPC is attached.
- `attachment.vpc-id` - The ID of an attached VPC.
- `internet-gateway-id` - The ID of the Internet gateway.
- `owner-id` - The ID of the AWS account that owns the internet gateway.
- `tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**InternetGatewayId.N**

The IDs of the internet gateways.

Default: Describes all your internet gateways.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**internetGatewaySet**

Information about the internet gateways.

Type: Array of InternetGateway objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all your internet gateways.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInternetGateways
&AUTHPARAMS
```

#### Sample Response

```
<DescribeInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>e0fbdd4f-8e6d-437c-92eb-bc72864831d8</requestId>
    <internetGatewaySet>
        <item>
            <internetGatewayId>igw-036dde5c85EXAMPLE</internetGatewayId>
            <ownerId>11112222333304</ownerId>
            <attachmentSet/>
            <tagSet/>
        </item>
        <item>
            <internetGatewayId>igw-0EXAMPLE</internetGatewayId>
            <ownerId>053534965804</ownerId>
            <attachmentSet>
                <item>
                    <vpcId>vpc-cEXAMPLE</vpcId>
                    <state>available</state>
                </item>
```

```
            </attachmentSet>
            <tagSet/>
        </item>
    </internetGatewaySet>
</DescribeInternetGatewaysResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpamByoasn

Describes your Autonomous System Numbers (ASNs), their provisioning statuses, and the BYOIP CIDRs with which they are associated. For more information, see Tutorial: Bring your ASN to IPAM in the *Amazon VPC IPAM guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**byoasnSet**

ASN and BYOIP CIDR associations.

Type: Array of Byoasn objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpamExternalResourceVerificationTokens

Describe verification tokens.

A verification token is an AWS-generated random value that you can use to prove ownership of an external resource. For example, you can use a verification token to validate that you control a public IP address range when you bring an IP address range to AWS (BYOIP).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters for the request. For more information about filtering, see Filtering CLI output.

Available filters:

- `ipam-arn`
- `ipam-external-resource-verification-token-arn`
- `ipam-external-resource-verification-token-id`
- `ipam-id`
- `ipam-region`
- `state`
- `status`
- `token-name`
- `token-value`

Type: Array of Filter objects

Required: No

**IpamExternalResourceVerificationTokenId.N**

Verification token IDs.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of tokens to return in one page of results.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamExternalResourceVerificationTokenSet**

Verification tokens.

Type: Array of IpamExternalResourceVerificationToken objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpamPolicies

Describes one or more IPAM policies.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters for the IPAM policy description.

Type: Array of Filter objects

Required: No

**IpamPolicyId.N**

The IDs of the IPAM policies to describe.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return in a single call.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPolicySet**

Information about the IPAM policies.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

Type: Array of IpamPolicy objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpamPoolAllocations

Describes IPAM pool allocations. You can describe all allocations owned by you across all pools, or you can describe specific allocations by ID.

If you specify `IpamPoolAllocationIds`, the results include only the specified allocations. If you do not specify `IpamPoolAllocationIds`, the results include all allocations owned by you. You can use `Filters` to narrow the results.

> **Note**
>
> This action returns only allocations directly owned by you. To view all allocations in a pool you own or that has been shared with you, including allocations owned by other accounts, use GetIpamPoolAllocations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters for the request. For more information about filtering, see Filtering CLI output.

Type: Array of Filter objects

Required: No

**IpamPoolAllocationId.N**

The IDs of the IPAM pool allocations you want to describe.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1000. Maximum value of 100000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPoolAllocationSet**

Information about the IPAM pool allocations.

Type: Array of IpamPoolAllocation objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpamPools

Get information about your IPAM pools.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters for the request. For more information about filtering, see Filtering CLI output.

Type: Array of Filter objects

Required: No

**IpamPoolId.N**

The IDs of the IPAM pools you would like information on.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPoolSet**

Information about the IPAM pools.

Type: Array of IpamPool objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpamPrefixListResolvers

Describes one or more IPAM prefix list resolvers. Use this operation to view the configuration, status, and properties of your resolvers.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to limit the results.

Type: Array of Filter objects

Required: No

**IpamPrefixListResolverId.N**

The IDs of the IPAM prefix list resolvers to describe. If not specified, all resolvers in your account are described.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPrefixListResolverSet**

Information about the IPAM prefix list resolvers.

Type: Array of IpamPrefixListResolver objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpamPrefixListResolverTargets

Describes one or more IPAM prefix list resolver Targets. Use this operation to view the configuration and status of resolver targets.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to limit the results.

Type: Array of Filter objects

Required: No

**IpamPrefixListResolverId**

The ID of the IPAM prefix list resolver to filter targets by. Only targets associated with this resolver will be returned.

Type: String

Required: No

**IpamPrefixListResolverTargetId.N**

The IDs of the IPAM prefix list resolver Targets to describe. If not specified, all targets in your account are described.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPrefixListResolverTargetSet**

Information about the IPAM prefix list resolver Targets.

Type: Array of IpamPrefixListResolverTarget objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpamResourceDiscoveries

Describes IPAM resource discoveries. A resource discovery is an IPAM component that enables IPAM to manage and monitor resources that belong to the owning account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The resource discovery filters.

Type: Array of Filter objects

Required: No

**IpamResourceDiscoveryId.N**

The IPAM resource discovery IDs.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of resource discoveries to return in one page of results.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamResourceDiscoverySet**

The resource discoveries.

Type: Array of IpamResourceDiscovery objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpamResourceDiscoveryAssociations

Describes resource discovery association with an Amazon VPC IPAM. An associated resource discovery is a resource discovery that has been associated with an IPAM..

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The resource discovery association filters.

Type: Array of Filter objects

Required: No

**IpamResourceDiscoveryAssociationId.N**

The resource discovery association IDs.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of resource discovery associations to return in one page of results.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

Specify the pagination token from a previous request to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamResourceDiscoveryAssociationSet**

The resource discovery associations.

Type: Array of IpamResourceDiscoveryAssociation objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpams

Get information about your IPAM pools.

For more information, see What is IPAM? in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters for the request. For more information about filtering, see Filtering CLI output.

Type: Array of Filter objects

Required: No

**IpamId.N**

The IDs of the IPAMs you want information on.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamSet**

Information about the IPAMs.

Type: Array of Ipam objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpamScopes

Get information about your IPAM scopes.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters for the request. For more information about filtering, see Filtering CLI output.

Type: Array of Filter objects

Required: No

**IpamScopeId.N**

The IDs of the scopes you want information on.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamScopeSet**

The scopes you want information on.

Type: Array of IpamScope objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeIpv6Pools

Describes your IPv6 address pools.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**PoolId.N**

The IDs of the IPv6 address pools.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**ipv6PoolSet**

Information about the IPv6 address pools.

Type: Array of Ipv6Pool objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeKeyPairs

Describes the specified key pairs or all of your key pairs.

For more information about key pairs, see Amazon EC2 key pairs in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `key-pair-id` - The ID of the key pair.
- `fingerprint` - The fingerprint of the key pair.
- `key-name` - The name of the key pair.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `tag:`<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of Filter objects

Required: No

**IncludePublicKey**

If `true`, the public key material is included in the response.

Default: `false`

Type: Boolean

Required: No

**KeyName.N**

The key pair names.

Default: Describes all of your key pairs.

Type: Array of strings

Required: No

**KeyPairId.N**

The IDs of the key pairs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**keySet**

Information about the key pairs.

Type: Array of KeyPairInfo objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes the key pair with name my-key-pair.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&KeyName.1=my-key-pair
&AUTHPARAMS
```

### Sample Response

```
<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <keySet>
      <item>
         <keyName>my-key-pair</keyName>
         <keyFingerprint>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</
keyFingerprint>
      </item>
   </keySet>
</DescribeKeyPairsResponse>
```

## Example

This example filters the response to include only key pairs whose names include the string `Dave`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&Filter.1.Name=key-name
&Filter.1.Value.1=*Dave*
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeLaunchTemplates

Describes one or more launch templates.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `create-time` - The time the launch template was created.
- `launch-template-name` - The name of the launch template.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**IncludeManagedResources**

Indicates whether to include managed resources in the output. If this parameter is set to `true`, the output includes resources that are managed by AWS services, even if managed resource visibility is set to hidden.

Type: Boolean

Required: No

**LaunchTemplateId.N**

One or more launch template IDs.

Type: Array of strings

Required: No

**LaunchTemplateName.N**

One or more launch template names.

Type: Array of strings

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: `[a-zA-Z0-9\(\)\.\-/_]+`

Required: No

**MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. This value can be between 1 and 200.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 200.

Required: No

**NextToken**

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**launchTemplates**

Information about the launch templates.

Type: Array of LaunchTemplate objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all of your launch templates.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeLaunchTemplates
&AUTHPARAMS
```

#### Sample Response

```
<DescribeLaunchTemplatesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>1afa6e44-eb38-4229-8db6-d5eaexample</requestId>
    <launchTemplates>
        <item>
            <createTime>2017-10-31T11:38:52.000Z</createTime>
            <createdBy>arn:aws:iam::123456789012:root</createdBy>
```

```
            <defaultVersionNumber>1</defaultVersionNumber>
            <latestVersionNumber>1</latestVersionNumber>
            <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
            <launchTemplateName>MyLaunchTemplate</launchTemplateName>
        </item>
    </launchTemplates>
</DescribeLaunchTemplatesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeLaunchTemplateVersions

Describes one or more versions of a specified launch template. You can describe all versions, individual versions, or a range of versions. You can also describe all the latest versions or all the default versions of all the launch templates in your account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `create-time` - The time the launch template version was created.
- `ebs-optimized` - A boolean that indicates whether the instance is optimized for Amazon EBS I/O.
- `http-endpoint` - Indicates whether the HTTP metadata endpoint on your instances is enabled (`enabled` | `disabled`).
- `http-protocol-ipv4` - Indicates whether the IPv4 endpoint for the instance metadata service is enabled (`enabled` | `disabled`).
- `host-resource-group-arn` - The ARN of the host resource group in which to launch the instances.
- `http-tokens` - The state of token usage for your instance metadata requests (`optional` | `required`).
- `iam-instance-profile` - The ARN of the IAM instance profile.
- `image-id` - The ID of the AMI.

- `instance-type` - The instance type.
- `is-default-version` - A boolean that indicates whether the launch template version is the default version.
- `kernel-id` - The kernel ID.
- `license-configuration-arn` - The ARN of the license configuration.
- `network-card-index` - The index of the network card.
- `ram-disk-id` - The RAM disk ID.

Type: Array of Filter objects

Required: No

**IncludeManagedResources**

Indicates whether to include managed resources in the output. If this parameter is set to `true`, the output includes resources that are managed by AWS services, even if managed resource visibility is set to hidden.

Type: Boolean

Required: No

**LaunchTemplateId**

The ID of the launch template.

To describe one or more versions of a specified launch template, you must specify either the launch template ID or the launch template name, but not both.

To describe all the latest or default launch template versions in your account, you must omit this parameter.

Type: String

Required: No

**LaunchTemplateName**

The name of the launch template.

To describe one or more versions of a specified launch template, you must specify either the launch template name or the launch template ID, but not both.

To describe all the latest or default launch template versions in your account, you must omit this parameter.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: `[a-zA-Z0-9\(\)\.\-/_]+`

Required: No

**LaunchTemplateVersion.N**

One or more versions of the launch template. Valid values depend on whether you are describing a specified launch template (by ID or name) or all launch templates in your account.

To describe one or more versions of a specified launch template, valid values are `$Latest`, `$Default`, and numbers.

To describe all launch templates in your account that are defined as the latest version, the valid value is `$Latest`. To describe all launch templates in your account that are defined as the default version, the valid value is `$Default`. You can specify `$Latest` and `$Default` in the same request. You cannot specify numbers.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. This value can be between 1 and 200.

Type: Integer

Required: No

**MaxVersion**

The version number up to which to describe launch template versions.

Type: String

Required: No

**MinVersion**

The version number after which to describe launch template versions.

Type: String

Required: No

**NextToken**

The token to request the next page of results.

Type: String

Required: No

**ResolveAlias**

If `true`, and if a Systems Manager parameter is specified for `ImageId`, the AMI ID is displayed in the response for `imageId`.

If `false`, and if a Systems Manager parameter is specified for `ImageId`, the parameter is displayed in the response for `imageId`.

For more information, see Use a Systems Manager parameter instead of an AMI ID in the *Amazon EC2 User Guide*.

Default: `false`

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**launchTemplateVersionSet**

Information about the launch template versions.

Type: Array of LaunchTemplateVersion objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes all versions of launch template `lt-0a20c965061f64abc` up to version 3.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeLaunchTemplateVersions
&LaunchTemplateId=lt-0a20c965061f64abc
&MaxVersion=3
&AUTHPARAMS
```

#### Sample Response

```
<DescribeLaunchTemplateVersionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>65cadec1-b364-4354-8ca8-4176dexample</requestId>
    <launchTemplateVersionSet>
        <item>
            <createTime>2017-10-31T11:38:52.000Z</createTime>
            <createdBy>arn:aws:iam::123456789012:root</createdBy>
            <defaultVersion>true</defaultVersion>
            <launchTemplateData>
                <imageId>ami-8c1be5f6</imageId>
```

```
                <instanceType>t2.micro</instanceType>
            </launchTemplateData>
            <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
            <launchTemplateName>MyLaunchTemplate</launchTemplateName>
            <versionDescription>FirstVersion</versionDescription>
            <versionNumber>1</versionNumber>
        </item>
        <item>
            <createTime>2017-10-31T11:52:03.000Z</createTime>
            <createdBy>arn:aws:iam::123456789012:root</createdBy>
            <defaultVersion>false</defaultVersion>
            <launchTemplateData>
                <imageId>ami-12345678</imageId>
            </launchTemplateData>
            <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
            <launchTemplateName>MyLaunchTemplate</launchTemplateName>
            <versionDescription>AMIOnlyv1</versionDescription>
            <versionNumber>2</versionNumber>
        </item>
        <item>
            <createTime>2017-10-31T11:55:15.000Z</createTime>
            <createdBy>arn:aws:iam::123456789012:root</createdBy>
            <defaultVersion>false</defaultVersion>
            <launchTemplateData>
                <imageId>ami-aabbccdd</imageId>
            </launchTemplateData>
            <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
            <launchTemplateName>MyLaunchTemplate</launchTemplateName>
            <versionDescription>AMIOnlyv2</versionDescription>
            <versionNumber>3</versionNumber>
        </item>
    </launchTemplateVersionSet>
</DescribeLaunchTemplateVersionsResponse>
```

## Example 2

This example describes all the latest versions of the launch templates in your account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeLaunchTemplateVersions
&LaunchTemplateVersion.1=$Latest
&AUTHPARAMS
```

## Sample Response

```
<DescribeLaunchTemplateVersionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>65cadec1-b364-4354-8ca8-4176dexample</requestId>
    <launchTemplateVersionSet>
        <item>
            <createTime>2020-01-31T11:38:52.000Z</createTime>
            <createdBy>arn:aws:iam::123456789012:root</createdBy>
            <defaultVersion>true</defaultVersion>
            <launchTemplateData>
                <imageId>ami-8c1be5f6</imageId>
                <instanceType>t2.micro</instanceType>
            </launchTemplateData>
            <launchTemplateId>lt-1111111111EXAMPLE</launchTemplateId>
            <launchTemplateName>MyLaunchTemplate1</launchTemplateName>
            <versionDescription>FirstTemplate</versionDescription>
            <versionNumber>1</versionNumber>
        </item>
        <item>
            <createTime>2020-02-14T11:52:03.000Z</createTime>
            <createdBy>arn:aws:iam::123456789012:root</createdBy>
            <defaultVersion>false</defaultVersion>
            <launchTemplateData>
                <imageId>ami-12345678</imageId>
                <instanceType>t2.micro</instanceType>
            </launchTemplateData>
            <launchTemplateId>lt-2222222222EXAMPLE</launchTemplateId>
            <launchTemplateName>MyLaunchTemplate2</launchTemplateName>
            <versionDescription>ThirdVersion</versionDescription>
            <versionNumber>3</versionNumber>
        </item>
        <item>
            <createTime>2020-03-03T11:55:15.000Z</createTime>
            <createdBy>arn:aws:iam::123456789012:root</createdBy>
            <defaultVersion>false</defaultVersion>
            <launchTemplateData>
                <imageId>ami-aabbccdd</imageId>
                <instanceType>t3.small</instanceType>
            </launchTemplateData>
            <launchTemplateId>lt-3333333333EXAMPLE</launchTemplateId>
            <launchTemplateName>MyLaunchTemplate3</launchTemplateName>
            <versionDescription>AMIOnlyv2</versionDescription>
            <versionNumber>2</versionNumber>
```

```
        </item>
    </launchTemplateVersionSet>
</DescribeLaunchTemplateVersionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeLocalGatewayRouteTables

Describes one or more local gateway route tables. By default, all local gateway route tables are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `local-gateway-id` - The ID of a local gateway.
- `local-gateway-route-table-arn` - The Amazon Resource Name (ARN) of the local gateway route table.
- `local-gateway-route-table-id` - The ID of a local gateway route table.
- `outpost-arn` - The Amazon Resource Name (ARN) of the Outpost.
- `owner-id` - The ID of the AWS account that owns the local gateway route table.
- `state` - The state of the local gateway route table.

Type: Array of Filter objects

Required: No

**LocalGatewayRouteTableId.N**

The IDs of the local gateway route tables.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**localGatewayRouteTableSet**

Information about the local gateway route tables.

Type: Array of LocalGatewayRouteTable objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeLocalGatewayRouteTableVirtualInterfaceGroupAssociations

Describes the associations between virtual interface groups and local gateway route tables.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `local-gateway-id` - The ID of a local gateway.
- `local-gateway-route-table-arn` - The Amazon Resource Name (ARN) of the local gateway route table for the virtual interface group.
- `local-gateway-route-table-id` - The ID of the local gateway route table.
- `local-gateway-route-table-virtual-interface-group-association-id` - The ID of the association.
- `local-gateway-route-table-virtual-interface-group-id` - The ID of the virtual interface group.
- `owner-id` - The ID of the AWS account that owns the local gateway virtual interface group association.
- `state` - The state of the association.

Type: Array of Filter objects

Required: No

**LocalGatewayRouteTableVirtualInterfaceGroupAssociationId.N**

The IDs of the associations.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**localGatewayRouteTableVirtualInterfaceGroupAssociationSet**

Information about the associations.

Type: Array of LocalGatewayRouteTableVirtualInterfaceGroupAssociation objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeLocalGatewayRouteTableVpcAssociations

Describes the specified associations between VPCs and local gateway route tables.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `local-gateway-id` - The ID of a local gateway.
- `local-gateway-route-table-arn` - The Amazon Resource Name (ARN) of the local gateway route table for the association.
- `local-gateway-route-table-id` - The ID of the local gateway route table.
- `local-gateway-route-table-vpc-association-id` - The ID of the association.
- `owner-id` - The ID of the AWS account that owns the local gateway route table for the association.
- `state` - The state of the association.
- `vpc-id` - The ID of the VPC.

Type: Array of Filter objects

Required: No

**LocalGatewayRouteTableVpcAssociationId.N**

The IDs of the associations.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**localGatewayRouteTableVpcAssociationSet**

Information about the associations.

Type: Array of LocalGatewayRouteTableVpcAssociation objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeLocalGateways

Describes one or more local gateways. By default, all local gateways are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `local-gateway-id` - The ID of a local gateway.
- `outpost-arn` - The Amazon Resource Name (ARN) of the Outpost.
- `owner-id` - The ID of the AWS account that owns the local gateway.
- `state` - The state of the association.

Type: Array of Filter objects

Required: No

**LocalGatewayId.N**

The IDs of the local gateways.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**localGatewaySet**

Information about the local gateways.

Type: Array of LocalGateway objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeLocalGatewayVirtualInterfaceGroups

Describes the specified local gateway virtual interface groups.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `local-gateway-id` - The ID of a local gateway.
- `local-gateway-virtual-interface-group-id` - The ID of the virtual interface group.
- `local-gateway-virtual-interface-id` - The ID of the virtual interface.
- `owner-id` - The ID of the AWS account that owns the local gateway virtual interface group.

Type: Array of Filter objects

Required: No

**LocalGatewayVirtualInterfaceGroupId.N**

The IDs of the virtual interface groups.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**localGatewayVirtualInterfaceGroupSet**

The virtual interface groups.

Type: Array of LocalGatewayVirtualInterfaceGroup objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeLocalGatewayVirtualInterfaces

Describes the specified local gateway virtual interfaces.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `local-address` - The local address.
- `local-bgp-asn` - The Border Gateway Protocol (BGP) Autonomous System Number (ASN) of the local gateway.
- `local-gateway-id` - The ID of the local gateway.
- `local-gateway-virtual-interface-id` - The ID of the virtual interface.
- `owner-id` - The ID of the AWS account that owns the local gateway virtual interface.
- `peer-address` - The peer address.
- `peer-bgp-asn` - The peer BGP ASN.
- `vlan` - The ID of the VLAN.

Type: Array of Filter objects

Required: No

**LocalGatewayVirtualInterfaceId.N**

The IDs of the virtual interfaces.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**localGatewayVirtualInterfaceSet**

Information about the virtual interfaces.

Type: Array of LocalGatewayVirtualInterface objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeLockedSnapshots

Describes the lock status for a snapshot.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `lock-state` - The state of the snapshot lock (`compliance-cooloff` | `governance` | `compliance` | `expired`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**SnapshotId.N**

The IDs of the snapshots for which to view the lock status.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**snapshotSet**

Information about the snapshots.

Type: Array of LockedSnapshotsInfo objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeMacHosts

Describes the specified EC2 Mac Dedicated Host or all of your EC2 Mac Dedicated Hosts.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Filter.N**

The filters.

- `availability-zone` - The Availability Zone of the EC2 Mac Dedicated Host.
- `instance-type` - The instance type size that the EC2 Mac Dedicated Host is configured to support.

Type: Array of Filter objects

Required: No

**HostId.N**

The IDs of the EC2 Mac Dedicated Hosts.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 500.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**macHostSet**

Information about the EC2 Mac Dedicated Hosts.

Type: Array of MacHost objects

**nextToken**

The token to use to retrieve the next page of results.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeMacModificationTasks

Describes a System Integrity Protection (SIP) modification task or volume ownership delegation task for an Amazon EC2 Mac instance. For more information, see Configure SIP for Amazon EC2 instances in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

Specifies one or more filters for the request:

- `instance-id` - The ID of the instance for which the task was created.
- `task-state` - The state of the task (`successful` | `failed` | `in-progress` | `pending`).
- `mac-system-integrity-protection-configuration.sip-status` - The overall SIP state requested in the task (`enabled` | `disabled`).
- `start-time` - The date and time the task was created.
- `task-type` - The type of task (`sip-modification` | `volume-ownership-delegation`).

Type: Array of Filter objects

Required: No

**MacModificationTaskId.N**

The ID of task.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 500.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**macModificationTaskSet**

Information about the tasks.

Type: Array of MacModificationTask objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeManagedPrefixLists

Describes your managed prefix lists and any AWS-managed prefix lists.

To view the entries for your prefix list, use GetManagedPrefixListEntries.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `owner-id` - The ID of the prefix list owner.
- `prefix-list-id` - The ID of the prefix list.
- `prefix-list-name` - The name of the prefix list.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**PrefixListId.N**

One or more prefix list IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**prefixListSet**

Information about the prefix lists.

Type: Array of ManagedPrefixList objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes managed prefix lists and filters by the prefix lists owned by account 123456789012.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeManagedPrefixList
&Filter.1.Name=owner-id
&Filter.1.Value.1=123456789012
&AUTHPARAMS
```

### Sample Response

```
<DescribeManagedPrefixListsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>ace27020-4268-4c9c-a8d3-example</requestId>
    <prefixListSet>
            <item>
                <addressFamily>IPv4</addressFamily>
                <maxEntries>10</maxEntries>
                <ownerId>123456789012</ownerId>
                <prefixListArn>arn:aws:ec2:us-east-1:123456789012:prefix-list/
pl-0123123123123aabb</prefixListArn>
                <prefixListId>pl-0123123123123aabb</prefixListId>
                <prefixListName>tgw-attachments</prefixListName>
                <state>create-complete</state>
                <tagSet>
                    <item>
                      <key>Purpose</key>
                      <value>For TGW-1a attachments</value>
                    </item>
                </tagSet>
                <version>1</version>
            </item>
    </prefixListSet>
</DescribeManagedPrefixListsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeMovingAddresses

> **Note**
>
> This action is deprecated.

Describes your Elastic IP addresses that are being moved from or being restored to the EC2-Classic platform. This request does not return information about any other Elastic IP addresses in your account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `moving-status` - The status of the Elastic IP address (`MovingToVpc` | `RestoringToClassic`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value outside of this range, an error is returned.

Default: If no value is provided, the default is 1000.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**PublicIp.N**

One or more Elastic IP addresses.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**movingAddressStatusSet**

The status for each Elastic IP address.

Type: Array of MovingAddressStatus objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeNatGateways

Describes your NAT gateways. The default is to describe all your NAT gateways. Alternatively, you can specify specific NAT gateway IDs or filter the results to include only the NAT gateways that match specific criteria.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `nat-gateway-id` - The ID of the NAT gateway.
- `state` - The state of the NAT gateway (`pending` | `failed` | `available` | `deleting` | `deleted`).
- `subnet-id` - The ID of the subnet in which the NAT gateway resides.
- `tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC in which the NAT gateway resides.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NatGatewayId.N**

The IDs of the NAT gateways.

Type: Array of strings

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**natGatewaySet**

Information about the NAT gateways.

Type: Array of NatGateway objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all of your NAT gateways.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNatGateways
&AUTHPARAMS
```

#### Sample Response

```
<DescribeNatGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>fcb1ea98-1c04-4f9f-a96d-61442example</requestId>
    <natGatewaySet>
        <item>
            <createTime>2017-02-22T09:30:33.000Z</createTime>
            <natGatewayAddressSet>
                <item>
                    <allocationId>eipalloc-8f409cb1</allocationId>
                    <networkInterfaceId>eni-1c8fa2fc</networkInterfaceId>
                    <privateIp>10.0.0.174</privateIp>
                    <publicIp>203.0.113.5</publicIp>
                </item>
            </natGatewayAddressSet>
            <natGatewayId>nat-05a4fd8a2a3e2574d</natGatewayId>
            <state>available</state>
            <subnetId>subnet-7b16de0c</subnetId>
            <tagSet>
                <item>
```

```
                    <key>Name</key>
                    <value>MyNatGateway</value>
                </item>
            </tagSet>
            <vpcId>vpc-1a2b3c4d</vpcId>
        </item>
    </natGatewaySet>
</DescribeNatGatewaysResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeNetworkAcls

Describes your network ACLs. The default is to describe all your network ACLs. Alternatively, you can specify specific network ACL IDs or filter the results to include only the network ACLs that match specific criteria.

For more information, see Network ACLs in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `association.association-id` - The ID of an association ID for the ACL.
- `association.network-acl-id` - The ID of the network ACL involved in the association.
- `association.subnet-id` - The ID of the subnet involved in the association.
- `default` - Indicates whether the ACL is the default network ACL for the VPC.
- `entry.cidr` - The IPv4 CIDR range specified in the entry.
- `entry.icmp.code` - The ICMP code specified in the entry, if any.
- `entry.icmp.type` - The ICMP type specified in the entry, if any.
- `entry.ipv6-cidr` - The IPv6 CIDR range specified in the entry.
- `entry.port-range.from` - The start of the port range specified in the entry.
- `entry.port-range.to` - The end of the port range specified in the entry.
- `entry.protocol` - The protocol specified in the entry (`tcp` | `udp` | `icmp` or a protocol number).

- `entry.rule-action` - Allows or denies the matching traffic (`allow` | `deny`).
- `entry.egress` - A Boolean that indicates the type of rule. Specify `true` for egress rules, or `false` for ingress rules.
- `entry.rule-number` - The number of an entry (in other words, rule) in the set of ACL entries.
- `network-acl-id` - The ID of the network ACL.
- `owner-id` - The ID of the AWS account that owns the network ACL.
- `tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC for the network ACL.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NetworkAclId.N**

The IDs of the network ACLs.

Type: Array of strings

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**networkAclSet**

Information about the network ACLs.

Type: Array of NetworkAcl objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all your network ACLs.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkAcls
&AUTHPARAMS
```

## Sample Response

```
<DescribeNetworkAclsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>be8171a0-2b2a-4a02-8b13-9c3436f2f02d</requestId>
    <networkAclSet>
        <item>
            <networkAclId>acl-0ea1f54ca7EXAMPLE</networkAclId>
            <vpcId>vpc-06e4ab6c6cEXAMPLE</vpcId>
            <ownerId>111122223333</ownerId>
            <default>true</default>
            <entrySet>
                <item>
                    <ruleNumber>100</ruleNumber>
                    <protocol>-1</protocol>
                    <ruleAction>allow</ruleAction>
                    <egress>true</egress>
                    <cidrBlock>0.0.0.0/0</cidrBlock>
                </item>
                <item>
                    <ruleNumber>32767</ruleNumber>
                    <protocol>-1</protocol>
                    <ruleAction>deny</ruleAction>
                    <egress>true</egress>
                    <cidrBlock>0.0.0.0/0</cidrBlock>
                </item>
                <item>
                    <ruleNumber>100</ruleNumber>
                    <protocol>-1</protocol>
                    <ruleAction>allow</ruleAction>
                    <egress>false</egress>
                    <cidrBlock>0.0.0.0/0</cidrBlock>
                </item>
                <item>
                    <ruleNumber>32767</ruleNumber>
                    <protocol>-1</protocol>
                    <ruleAction>deny</ruleAction>
                    <egress>false</egress>
                    <cidrBlock>0.0.0.0/0</cidrBlock>
                </item>
            </entrySet>
            <associationSet>
                <item>
                    <networkAclAssociationId>aclassoc-0c1679dc41EXAMPLE</
networkAclAssociationId>
```

```
                <networkAclId>acl-0ea1f54ca7EXAMPLE</networkAclId>
                <subnetId>subnet-0931fc2fa5EXAMPLE</subnetId>
            </item>
        </associationSet>
        <tagSet/>
    </item>
    <item>
        <networkAclId>acl-09a47ac966EXAMPLE</networkAclId>
        <vpcId>vpc-06b7830650EXAMPLE</vpcId>
        <ownerId>111122223333</ownerId>
        <default>true</default>
        <entrySet>
            <item>
                <ruleNumber>100</ruleNumber>
                <protocol>-1</protocol>
                <ruleAction>allow</ruleAction>
                <egress>true</egress>
                <cidrBlock>0.0.0.0/0</cidrBlock>
            </item>
            <item>
                <ruleNumber>32767</ruleNumber>
                <protocol>-1</protocol>
                <ruleAction>deny</ruleAction>
                <egress>true</egress>
                <cidrBlock>0.0.0.0/0</cidrBlock>
            </item>
            <item>
                <ruleNumber>100</ruleNumber>
                <protocol>-1</protocol>
                <ruleAction>allow</ruleAction>
                <egress>false</egress>
                <cidrBlock>0.0.0.0/0</cidrBlock>
            </item>
            <item>
                <ruleNumber>32767</ruleNumber>
                <protocol>-1</protocol>
                <ruleAction>deny</ruleAction>
                <egress>false</egress>
                <cidrBlock>0.0.0.0/0</cidrBlock>
            </item>
        </entrySet>
        <associationSet/>
        <tagSet/>
    </item>
```

```
    </networkAclSet>
</DescribeNetworkAclsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeNetworkInsightsAccessScopeAnalyses

Describes the specified Network Access Scope analyses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AnalysisStartTimeBegin**

Filters the results based on the start time. The analysis must have started on or after this time.

Type: Timestamp

Required: No

**AnalysisStartTimeEnd**

Filters the results based on the start time. The analysis must have started on or before this time.

Type: Timestamp

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

There are no supported filters.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

**NetworkInsightsAccessScopeAnalysisId.N**

The IDs of the Network Access Scope analyses.

Type: Array of strings

Required: No

**NetworkInsightsAccessScopeId**

The ID of the Network Access Scope.

Type: String

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**networkInsightsAccessScopeAnalysisSet**

The Network Access Scope analyses.

Type: Array of NetworkInsightsAccessScopeAnalysis objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeNetworkInsightsAccessScopes

Describes the specified Network Access Scopes.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

There are no supported filters.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

**NetworkInsightsAccessScopeId.N**

The IDs of the Network Access Scopes.

Type: Array of strings

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**networkInsightsAccessScopeSet**

The Network Access Scopes.

Type: Array of NetworkInsightsAccessScope objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeNetworkInsightsAnalyses

Describes one or more of your network insights analyses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AnalysisEndTime**

The time when the network insights analyses ended.

Type: Timestamp

Required: No

**AnalysisStartTime**

The time when the network insights analyses started.

Type: Timestamp

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters. The following are the possible values:

- path-found - A Boolean value that indicates whether a feasible path is found.
- status - The status of the analysis (running | succeeded | failed).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

**NetworkInsightsAnalysisId.N**

The ID of the network insights analyses. You must specify either analysis IDs or a path ID.

Type: Array of strings

Required: No

**NetworkInsightsPathId**

The ID of the path. You must specify either a path ID or analysis IDs.

Type: String

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**networkInsightsAnalysisSet**

Information about the network insights analyses.

Type: Array of NetworkInsightsAnalysis objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeNetworkInsightsPaths

Describes one or more of your paths.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters. The following are the possible values:

- destination - The ID of the resource.
- filter-at-source.source-address - The source IPv4 address at the source.
- filter-at-source.source-port-range - The source port range at the source.
- filter-at-source.destination-address - The destination IPv4 address at the source.
- filter-at-source.destination-port-range - The destination port range at the source.
- filter-at-destination.source-address - The source IPv4 address at the destination.
- filter-at-destination.source-port-range - The source port range at the destination.
- filter-at-destination.destination-address - The destination IPv4 address at the destination.
- filter-at-destination.destination-port-range - The destination port range at the destination.
- protocol - The protocol.
- source - The ID of the resource.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

**NetworkInsightsPathId.N**

The IDs of the paths.

Type: Array of strings

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**networkInsightsPathSet**

Information about the paths.

Type: Array of NetworkInsightsPath objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeNetworkInterfaceAttribute

Describes a network interface attribute. You can specify only one attribute at a time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The attribute of the network interface. This parameter is required.

Type: String

Valid Values: `description | groupSet | sourceDestCheck | attachment | associatePublicIpAddress`

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**associatePublicIpAddress**

Indicates whether to assign a public IPv4 address to a network interface. This option can be enabled for any network interface but will only apply to the primary network interface (eth0).

Type: Boolean

**attachment**

The attachment (if any) of the network interface.

Type: NetworkInterfaceAttachment object

**description**

The description of the network interface.

Type: AttributeValue object

**groupSet**

The security groups associated with the network interface.

Type: Array of GroupIdentifier objects

**networkInterfaceId**

The ID of the network interface.

Type: String

**requestId**

The ID of the request.

Type: String

**sourceDestCheck**

Indicates whether source/destination checking is enabled.

Type: AttributeBooleanValue object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes the `sourceDestCheck` attribute of the specified network interface.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaceAttribute
&NetworkInterfaceId=eni-686ea200
&Attribute=sourceDestCheck
&AUTHPARAMS
```

### Sample Response

```
<DescribeNetworkInterfaceAttributeResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>7a20c6b2-d71c-45fb-bba7-37306850544b</requestId>
  <networkInterfaceId>eni-686ea200</networkInterfaceId>
  <sourceDestCheck>
    <value>true</value>
  </sourceDestCheck>
</DescribeNetworkInterfaceAttributeResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DescribeNetworkInterfacePermissions

Describes the permissions for your network interfaces.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Filter.N**

One or more filters.

- `network-interface-permission.network-interface-permission-id` - The ID of the permission.
- `network-interface-permission.network-interface-id` - The ID of the network interface.
- `network-interface-permission.aws-account-id` - The AWS account ID.
- `network-interface-permission.aws-service` - The AWS service.
- `network-interface-permission.permission` - The type of permission (`INSTANCE-ATTACH` | `EIP-ASSOCIATE`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. If this parameter is not specified, up to 50 results are returned by default. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

**NetworkInterfacePermissionId.N**

The network interface permission IDs.

Type: Array of strings

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**networkInterfacePermissions**

The network interface permissions.

Type: Array of NetworkInterfacePermission objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all of your network interface permissions.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfacePermissions
&AUTHPARAMS
```

### Sample Response

```
<DescribeNetworkInterfacePermissionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>6d4fe5e1-4bd2-4e76-8980-04cexample</requestId>
    <networkInterfacePermissions>
        <item>
            <awsAccountId>123456789012</awsAccountId>
            <networkInterfaceId>eni-b909511a</networkInterfaceId>
            <networkInterfacePermissionId>eni-perm-06fd19020ede149ea</
networkInterfacePermissionId>
            <permission>INSTANCE-ATTACH</permission>
            <permissionState>
                <state>GRANTED</state>
            </permissionState>
        </item>
    </networkInterfacePermissions>
</DescribeNetworkInterfacePermissionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DescribeNetworkInterfaces

Describes the specified network interfaces or all your network interfaces.

If you have a large number of network interfaces, the operation fails unless you use pagination or one of the following filters: `group-id`, `mac-address`, `private-dns-name`, `private-ip-address`, `subnet-id`, or `vpc-id`.

> **Important**
>
> We strongly recommend using only paginated requests. Unpaginated requests are susceptible to throttling and timeouts.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `association.allocation-id` - The allocation ID returned when you allocated the Elastic IP address (IPv4) for your network interface.
- `association.association-id` - The association ID returned when the network interface was associated with an IPv4 address.
- `addresses.association.owner-id` - The owner ID of the addresses associated with the network interface.
- `addresses.association.public-ip` - The association ID returned when the network interface was associated with the Elastic IP address (IPv4).

- `addresses.primary` - Whether the private IPv4 address is the primary IP address associated with the network interface.
- `addresses.private-ip-address` - The private IPv4 addresses associated with the network interface.
- `association.ip-owner-id` - The owner of the Elastic IP address (IPv4) associated with the network interface.
- `association.public-ip` - The address of the Elastic IP address (IPv4) bound to the network interface.
- `association.public-dns-name` - The public DNS name for the network interface (IPv4).
- `attachment.attach-time` - The time that the network interface was attached to an instance.
- `attachment.attachment-id` - The ID of the interface attachment.
- `attachment.delete-on-termination` - Indicates whether the attachment is deleted when an instance is terminated.
- `attachment.device-index` - The device index to which the network interface is attached.
- `attachment.instance-id` - The ID of the instance to which the network interface is attached.
- `attachment.instance-owner-id` - The owner ID of the instance to which the network interface is attached.
- `attachment.status` - The status of the attachment (`attaching` | `attached` | `detaching` | `detached`).
- `availability-zone` - The Availability Zone of the network interface.
- `availability-zone-id` - The ID of the Availability Zone of the network interface.
- `description` - The description of the network interface.
- `group-id` - The ID of a security group associated with the network interface.
- `ipv6-addresses.ipv6-address` - An IPv6 address associated with the network interface.
- `interface-type` - The type of network interface (`api_gateway_managed` | `aws_codestar_connections_managed` | `branch` | `ec2_instance_connect_endpoint` | `efa` | `efa-only` | `efs` | `evs` | `gateway_load_balancer` | `gateway_load_balancer_endpoint` | `global_accelerator_managed` | `interface` | `iot_rules_managed` | `lambda` | `load_balancer` | `nat_gateway` | `network_load_balancer` | `quicksight` | `transit_gateway` | `trunk` | `vpc_endpoint`).
- `mac-address` - The MAC address of the network interface.

- `network-interface-id` - The ID of the network interface.
- `operator.managed` - A Boolean that indicates whether this is a managed network interface.
- `operator.principal` - The principal that manages the network interface. Only valid for managed network interfaces, where `managed` is `true`.
- `owner-id` - The AWS account ID of the network interface owner.
- `private-dns-name` - The private DNS name of the network interface (IPv4).
- `private-ip-address` - The private IPv4 address or addresses of the network interface.
- `requester-id` - The alias or AWS account ID of the principal or service that created the network interface.
- `requester-managed` - Indicates whether the network interface is being managed by an AWS service (for example, AWS Management Console, Auto Scaling, and so on).
- `source-dest-check` - Indicates whether the network interface performs source/destination checking. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the network interface to perform network address translation (NAT) in your VPC.
- `status` - The status of the network interface. If the network interface is not attached to an instance, the status is `available`; if a network interface is attached to an instance the status is `in-use`.
- `subnet-id` - The ID of the subnet for the network interface.
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC for the network interface.

Type: Array of Filter objects

Required: No

**IncludeManagedResources**

Indicates whether to include managed resources in the output. If this parameter is set to `true`, the output includes resources that are managed by AWS services, even if managed resource visibility is set to hidden.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. You cannot specify this parameter and the network interface IDs parameter in the same request. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NetworkInterfaceId.N**

The network interface IDs.

Default: Describes all your network interfaces.

Type: Array of strings

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**networkInterfaceSet**

Information about the network interfaces.

Type: Array of NetworkInterface objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes all your network interfaces.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaces
&AUTHPARAMS
```

#### Sample Response

```
<DescribeNetworkInterfacesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>fc45294c-006b-457b-bab9-012f5b3b0e40</requestId>
     <networkInterfaceSet>
       <item>
         <networkInterfaceId>eni-0f62d866</networkInterfaceId>
         <subnetId>subnet-c53c87ac</subnetId>
         <vpcId>vpc-cc3c87a5</vpcId>
         <availabilityZone>api-southeast-1b</availabilityZone>
         <description/>
         <ownerId>053230519467</ownerId>
         <requesterManaged>false</requesterManaged>
         <status>in-use</status>
         <macAddress>02:81:60:cb:27:37</macAddress>
```

```
      <privateIpAddress>10.0.0.146</privateIpAddress>
      <sourceDestCheck>true</sourceDestCheck>
      <groupSet>
        <item>
          <groupId>sg-3f4b5653</groupId>
          <groupName>default</groupName>
        </item>
      </groupSet>
      <attachment>
        <attachmentId>eni-attach-6537fc0c</attachmentId>
        <instanceId>i-1234567890abcdef0</instanceId>
        <instanceOwnerId>053230519467</instanceOwnerId>
        <deviceIndex>0</deviceIndex>
        <status>attached</status>
        <attachTime>2012-07-01T21:45:27.000Z</attachTime>
        <deleteOnTermination>true</deleteOnTermination>
      </attachment>
      <tagSet/>
      <privateIpAddressesSet>
        <item>
          <privateIpAddress>10.0.0.146</privateIpAddress>
          <primary>true</primary>
        </item>
        <item>
          <privateIpAddress>10.0.0.148</privateIpAddress>
          <primary>false</primary>
        </item>
        <item>
          <privateIpAddress>10.0.0.150</privateIpAddress>
          <primary>false</primary>
        </item>
      </privateIpAddressesSet>
      <ipv6AddressesSet/>
    </item>
    <item>
      <networkInterfaceId>eni-a66ed5cf</networkInterfaceId>
      <subnetId>subnet-cd8a35a4</subnetId>
      <vpcId>vpc-f28a359b</vpcId>
      <availabilityZone>ap-southeast-1b</availabilityZone>
      <description>Primary network interface</description>
      <ownerId>053230519467</ownerId>
      <requesterManaged>false</requesterManaged>
      <status>in-use</status>
      <macAddress>02:78:d7:00:8a:1e</macAddress>
```

```
          <privateIpAddress>10.0.1.233</privateIpAddress>
          <sourceDestCheck>true</sourceDestCheck>
          <groupSet>
            <item>
              <groupId>sg-a2a0b2ce</groupId>
              <groupName>quick-start-1</groupName>
            </item>
          </groupSet>
          <attachment>
            <attachmentId>eni-attach-a99c57c0</attachmentId>
            <instanceId>i-0598c7d356eba48d7</instanceId>
            <instanceOwnerId>053230519467</instanceOwnerId>
            <deviceIndex>0</deviceIndex>
            <status>attached</status>
            <attachTime>2012-06-27T20:08:44.000Z</attachTime>
            <deleteOnTermination>true</deleteOnTermination>
          </attachment>
          <tagSet/>
          <privateIpAddressesSet>
            <item>
              <privateIpAddress>10.0.1.233</privateIpAddress>
              <primary>true</primary>
            </item>
            <item>
              <privateIpAddress>10.0.1.20</privateIpAddress>
              <primary>false</primary>
            </item>
          </privateIpAddressesSet>
          <ipv6AddressesSet>
           <item>
             <ipv6Address>2001:db8:1234:1a00::123</ipv6Address>
           </item>
           <item>
             <ipv6Address>2001:db8:1234:1a00::456</ipv6Address>
           </item>
         </ipv6AddressesSet>
        </item>
      </networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```

### Example 2

This example uses a filter to describe only network interfaces that are in Availability Zone `us-east-2a`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaces
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-2a
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeOutpostLags

Describes the Outposts link aggregation groups (LAGs).

> **Note**
>
> LAGs are only available for second-generation Outposts racks at this time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters to use for narrowing down the request. The following filters are supported:

- `service-link-virtual-interface-id` - The ID of the service link virtual interface.
- `service-link-virtual-interface-arn` - The ARN of the service link virtual interface.
- `outpost-id` - The Outpost ID.
- `outpost-arn` - The Outpost ARN.
- `owner-id` - The ID of the AWS account that owns the service link virtual interface.
- `vlan` - The ID of the address pool.
- `local-address` - The local address.
- `peer-address` - The peer address.
- `peer-bgp-asn` - The peer BGP ASN.
- `outpost-lag-id` - The Outpost LAG ID.

- `configuration-state` - The configuration state of the service link virtual interface.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**OutpostLagId.N**

The IDs of the Outpost LAGs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**outpostLagSet**

The Outpost LAGs.

Type: Array of OutpostLag objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribePlacementGroups

Describes the specified placement groups or all of your placement groups.

> **Note**
>
> To describe a specific placement group that is *shared* with your account, you must specify the ID of the placement group using the `GroupId` parameter. Specifying the name of a *shared* placement group using the `GroupNames` parameter will result in an error.

For more information, see Placement groups in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `group-name` - The name of the placement group.
- `group-arn` - The Amazon Resource Name (ARN) of the placement group.
- `spread-level` - The spread level for the placement group (`host` | `rack`).
- `state` - The state of the placement group (`pending` | `available` | `deleting` | `deleted`).
- `strategy` - The strategy of the placement group (`cluster` | `spread` | `partition`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that

have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources that have a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**GroupId.N**

The IDs of the placement groups.

Type: Array of strings

Required: No

**GroupName.N**

The names of the placement groups.

Constraints:

- You can specify a name only if the placement group is owned by your account.
- If a placement group is *shared* with your account, specifying the name results in an error. You must use the `GroupId` parameter instead.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**placementGroupSet**

Information about the placement groups.

Type: Array of PlacementGroup objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes the placement group named `ABC-spread`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&GroupName.1=ABC-spread
&AUTHPARAMS
```

#### Sample Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
   <placementGroupSet>
      <item>
         <groupName>ABC-spread</groupName>
         <spreadLevel>rack</spreadLevel>
         <strategy>spread</strategy>
         <state>available</state>
      </item>
   </placementGroupSet>
</DescribePlacementGroupsResponse>
```

### Example 2

This example filters the response to include only placement groups that include the string `Project` in the name.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
```

```
&Filter.1.Name=group-name
&Filter.1.Value=*Project*
&AUTHPARAMS
```

### Sample Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
   <placementGroupSet>
      <item>
         <groupName>Project-cluster</groupName>
         <strategy>cluster</strategy>
         <state>available</state>
      </item>
   </placementGroupSet>
</DescribePlacementGroupsResponse>
```

## Example 3

This example describes the partition placement group named `HDSF-Group-A` with three partitions.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&GroupName.1=HDSF-Group-A
&AUTHPARAMS
```

### Sample Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
   <placementGroupSet>
      <item>
         <groupName>HDSF-Group-A</groupName>
         <strategy>partition</strategy>
         <partitionCount>3</partitionCount>
         <state>available</state>
      </item>
   </placementGroupSet>
</DescribePlacementGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribePrefixLists

Describes available AWS services in a prefix list format, which includes the prefix list name and prefix list ID of the service and the IP address range for the service.

We recommend that you use DescribeManagedPrefixLists instead.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `prefix-list-id`: The ID of a prefix list.
- `prefix-list-name`: The name of a prefix list.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**PrefixListId.N**

One or more prefix list IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**prefixListSet**

All available prefix lists.

Type: Array of PrefixList objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example lists all available AWS prefix lists.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePrefixLists
&AUTHPARAMS
```

### Sample Response

```
<DescribePrefixListsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <prefixListSet>
        <item>
            <prefixListName>com.amazonaws.us-west-2.s3</prefixListName>
            <prefixListId>pl-12345678</prefixListId>
            <cidrSet>
              <item>54.123.456.7/19</item>
            </cidrSet>
        </item>
    </prefixListSet>
    <requestId>614db4d4-ac7b-4cb6-853e-example</requestId>
</DescribePrefixListsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribePrincipalIdFormat

Describes the ID format settings for the root user and all IAM roles and IAM users that have explicitly specified a longer ID (17-character ID) preference.

By default, all IAM roles and IAM users default to the same ID settings as the root user, unless they explicitly override the settings. This request is useful for identifying those IAM users and IAM roles that have overridden the default ID settings.

The following resource types support longer IDs: `bundle` | `conversion-task` | `customer-gateway` | `dhcp-options` | `elastic-ip-allocation` | `elastic-ip-association` | `export-task` | `flow-log` | `image` | `import-task` | `instance` | `internet-gateway` | `network-acl` | `network-acl-association` | `network-interface` | `network-interface-attachment` | `prefix-list` | `reservation` | `route-table` | `route-table-association` | `security-group` | `snapshot` | `subnet` | `subnet-cidr-block-association` | `volume` | `vpc` | `vpc-cidr-block-association` | `vpc-endpoint` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned NextToken value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to request the next page of results.

Type: String

Required: No

**Resource.N**

The type of resource: `bundle` | `conversion-task` | `customer-gateway` | `dhcp-options` | `elastic-ip-allocation` | `elastic-ip-association` | `export-task` | `flow-log` | `image` | `import-task` | `instance` | `internet-gateway` | `network-acl` | `network-acl-association` | `network-interface` | `network-interface-attachment` | `prefix-list` | `reservation` | `route-table` | `route-table-association` | `security-group` | `snapshot` | `subnet` | `subnet-cidr-block-association` | `volume` | `vpc` | `vpc-cidr-block-association` | `vpc-endpoint` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway`

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is null when there are no more results to return.

Type: String

**principalSet**

Information about the ID format settings for the ARN.

Type: Array of PrincipalIdFormat objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the ID format for the root user and all IAM roles and IAM users that have explicitly specified a longer ID preference.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePrincipalIdFormat
&AUTHPARAMS
```

#### Sample Response

```
<DescribePrincipalIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <principalSet>
        <item>
            <arn>arn:aws:iam::123456789012:root</arn>
            <statusSet>
                <item>
                    <deadline>2016-12-15T12:00:00.000Z</deadline>
                    <resource>reservation</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <deadline>2016-12-15T12:00:00.000Z</deadline>
                    <resource>instance</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <deadline>2016-12-15T12:00:00.000Z</deadline>
                    <resource>volume</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
```

```
            <deadline>2016-12-15T12:00:00.000Z</deadline>
            <resource>snapshot</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-interface-attachment</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-interface</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>elastic-ip-allocation</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>elastic-ip-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>vpc</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>subnet</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>route-table</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>route-table-association</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-acl</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-acl-association</resource>
            <useLongIds>true</useLongIds>
        </item>
```

```
                <item>
                    <resource>dhcp-options</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>internet-gateway</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>vpc-cidr-block-association</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>vpc-ipv6-cidr-block-association</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>subnet-ipv6-cidr-block-association</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>vpc-peering-connection</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>security-group</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>flow-log</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>customer-gateway</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>vpc-endpoint</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>vpn-connection</resource>
                    <useLongIds>true</useLongIds>
                </item>
```

```
                <item>
                    <resource>vpn-gateway</resource>
                    <useLongIds>true</useLongIds>
            </item>
                </statusSet>
            </item>
            <item>
                <arn>arn:aws:iam::987654321000:user/user1</arn>
                <statusSet>
                    <item>
                        <deadline>2016-12-15T12:00:00.000Z</deadline>
                        <resource>reservation</resource>
                        <useLongIds>true</useLongIds>
                    </item>
                    <item>
                        <deadline>2016-12-15T12:00:00.000Z</deadline>
                        <resource>instance</resource>
                        <useLongIds>true</useLongIds>
                    </item>
                    <item>
                        <deadline>2016-12-15T12:00:00.000Z</deadline>
                        <resource>volume</resource>
                        <useLongIds>true</useLongIds>
                    </item>
                    <item>
                        <deadline>2016-12-15T12:00:00.000Z</deadline>
                        <resource>snapshot</resource>
                        <useLongIds>true</useLongIds>
                    </item>
                    <item>
                        <resource>network-interface-attachment</resource>
                        <useLongIds>true</useLongIds>
                    </item>
                    <item>
                        <resource>network-interface</resource>
                        <useLongIds>true</useLongIds>
                    </item>
                    <item>
                        <resource>elastic-ip-allocation</resource>
                        <useLongIds>true</useLongIds>
                    </item>
                    <item>
                        <resource>elastic-ip-association</resource>
                        <useLongIds>true</useLongIds>
```

```
                </item>
                <item>
                    <resource>vpc</resource>
                    <useLongIds>false</useLongIds>
                </item>
                <item>
                    <resource>subnet</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>route-table</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>route-table-association</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>network-acl</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>network-acl-association</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>dhcp-options</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>internet-gateway</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>vpc-cidr-block-association</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>vpc-ipv6-cidr-block-association</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>subnet-ipv6-cidr-block-association</resource>
                    <useLongIds>true</useLongIds>
```

```
                </item>
                <item>
                    <resource>vpc-peering-connection</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>security-group</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>flow-log</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>customer-gateway</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>vpc-endpoint</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>vpn-connection</resource>
                    <useLongIds>true</useLongIds>
                </item>
                <item>
                    <resource>vpn-gateway</resource>
                    <useLongIds>true</useLongIds>
                </item>
            </statusSet>
        </item>
    </principalSet>
</DescribePrincipalIdFormatResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribePublicIpv4Pools

Describes the specified IPv4 address pools.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Filter.N**

One or more filters.

- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 10.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**PoolId.N**

The IDs of the address pools.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**publicIpv4PoolSet**

Information about the address pools.

Type: Array of PublicIpv4Pool objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeRegions

Describes the Regions that are enabled for your account, or all Regions.

For a list of the Regions supported by Amazon EC2, see Amazon EC2 service endpoints.

For information about enabling and disabling Regions for your account, see Specify which AWS Regions your account can use in the *AWS Account Management Reference Guide*.

> **Note**
>
> The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllRegions**

Indicates whether to display all Regions, including Regions that are disabled for your account.

Type: Boolean

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `endpoint` - The endpoint of the Region (for example, `ec2.us-east-1.amazonaws.com`).

- `opt-in-status` - The opt-in status of the Region (`opt-in-not-required` | `opted-in` | `not-opted-in`).
- `region-name` - The name of the Region (for example, `us-east-1`).

Type: Array of Filter objects

Required: No

**RegionName.N**

The names of the Regions. You can specify any Regions, whether they are enabled and disabled for your account.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**regionInfo**

Information about the Regions.

Type: Array of Region objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example displays information about all Regions enabled for your account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&AUTHPARAMS
```

## Example 2

This example displays information about all Regions, even the Regions that are disabled for your account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&AllRegions=true
&AUTHPARAMS
```

## Example 3

This example displays information about the specified Regions only.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRegions
&RegionName.1=us-east-1
&RegionName.2=eu-west-1
&AUTHPARAMS
```

### Sample Response

```
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <regionInfo>
      <item>
         <regionName>us-east-1</regionName>
         <regionEndpoint>ec2.us-east-1.amazonaws.com</regionEndpoint>
         <optInStatus>opt-in-not-required</optInStatus>
         <geographySet>
            <item>
               <name>United States of America</name>
            </item>
         </geographySet>
```

```
      </item>
      <item>
         <regionName>eu-west-1</regionName>
         <regionEndpoint>ec2.eu-west-1.amazonaws.com</regionEndpoint>
         <optInStatus>opt-in-not-required</optInStatus>
         <geographySet>
            <item>
               <name>Ireland</name>
            </item>
         </geographySet>
      </item>
   </regionInfo>
</DescribeRegionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeReplaceRootVolumeTasks

Describes a root volume replacement task. For more information, see Replace a root volume in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

Filter to use:

- `instance-id` - The ID of the instance for which the root volume replacement task was created.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 50.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**ReplaceRootVolumeTaskId.N**

The ID of the root volume replacement task to view.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**replaceRootVolumeTaskSet**

Information about the root volume replacement task.

Type: Array of ReplaceRootVolumeTask objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeReservedInstances

Describes one or more of the Reserved Instances that you purchased.

For more information about Reserved Instances, see Reserved Instances in the *Amazon EC2 User Guide*.

> **Note**
>
> The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `availability-zone` - The Availability Zone where the Reserved Instance can be used.
- `availability-zone-id` - The ID of the Availability Zone where the Reserved Instance can be used.
- `duration` - The duration of the Reserved Instance (one year or three years), in seconds (`31536000` | `94608000`).
- `end` - The time when the Reserved Instance expires (for example, 2015-08-07T11:54:42.000Z).
- `fixed-price` - The purchase price of the Reserved Instance (for example, 9800.0).

- `instance-type` - The instance type that is covered by the reservation.
- `scope` - The scope of the Reserved Instance (`Region` or `Availability Zone`).
- `product-description` - The Reserved Instance product platform description (`Linux/UNIX` | `Linux with SQL Server Standard` | `Linux with SQL Server Web` | `Linux with SQL Server Enterprise` | `SUSE Linux` | `Red Hat Enterprise Linux` | `Red Hat Enterprise Linux with HA` | `Windows` | `Windows with SQL Server Standard` | `Windows with SQL Server Web` | `Windows with SQL Server Enterprise`).
- `reserved-instances-id` - The ID of the Reserved Instance.
- `start` - The time at which the Reserved Instance purchase request was placed (for example, 2014-08-07T11:54:42.000Z).
- `state` - The state of the Reserved Instance (`payment-pending` | `active` | `payment-failed` | `retired`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `usage-price` - The usage price of the Reserved Instance, per hour (for example, 0.84).

Type: Array of Filter objects

Required: No

**OfferingClass**

Describes whether the Reserved Instance is Standard or Convertible.

Type: String

Valid Values: `standard | convertible`

Required: No

**OfferingType**

The Reserved Instance offering type. If you are using tools that predate the 2011-11-01 API version, you only have access to the `Medium Utilization` Reserved Instance offering type.

Type: String

Valid Values: `Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront`

Required: No

**ReservedInstancesId.N**

One or more Reserved Instance IDs.

Default: Describes all your Reserved Instances, or only those otherwise specified.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**reservedInstancesSet**

A list of Reserved Instances.

Type: Array of ReservedInstances objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes Reserved Instances owned by your account.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstances
```

```
&AUTHPARAMS
```

### Sample Response

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <reservedInstancesSet>
   ...
      <item>
         <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</
reservedInstancesId>
         <instanceType>m1.xlarge</instanceType>
         <availabilityZone>us-east-1b</availabilityZone>
         <start>2015-07-14T11:00:00:00.000Z</start>
         <end>2016-07-13T1212:00:00:000Z</end>
         <duration>31536000</duration>
         <fixedPrice>0.0</fixedPrice>
         <usagePrice>0.034</usagePrice>
         <instanceCount>2</instanceCount>
         <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
         <state>active</state>
         <instanceTenancy>default</instanceTenancy>
         <currencyCode>USD</currencyCode>
         <offeringType>Partial Upfront</offeringType>
         <recurringCharges>
                  <item>
                        <frequency>Hourly</frequency>
                        <amount>0.05</amount>
                  </item>
         </recurringCharges>
         <offeringClass>standard</offeringClass>
         <scope>AvailabilityZone</scope>
      </item>
      ...
   </reservedInstancesSet>
</DescribeReservedInstancesResponse>
```

## Example

This example filters the response to include only one-year, `m1.small` Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to `Linux/UNIX (Amazon VPC)`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstances
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.3.Name=product-description
&Filter.3.Value.1=Linux%2FUNIX
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeReservedInstancesListings

Describes your account's Reserved Instance listings in the Reserved Instance Marketplace.

The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

As a seller, you choose to list some or all of your Reserved Instances, and you specify the upfront price to receive for them. Your Reserved Instances are then listed in the Reserved Instance Marketplace and are available for purchase.

As a buyer, you specify the configuration of the Reserved Instance to purchase, and the Marketplace matches what you're searching for with what's available. The Marketplace first sells the lowest priced Reserved Instances to you, and continues to sell available Reserved Instance listings to you until your demand is met. You are charged based on the total price of all of the listings that you purchase.

For more information, see Sell in the Reserved Instance Marketplace in the *Amazon EC2 User Guide*.

> **Note**
>
> The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Filter.N**

One or more filters.

- `reserved-instances-id` - The ID of the Reserved Instances.
- `reserved-instances-listing-id` - The ID of the Reserved Instances listing.
- `status` - The status of the Reserved Instance listing (`pending` | `active` | `cancelled` | `closed`).

- `status-message` - The reason for the status.

Type: Array of Filter objects

Required: No

**ReservedInstancesId**

One or more Reserved Instance IDs.

Type: String

Required: No

**ReservedInstancesListingId**

One or more Reserved Instance listing IDs.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**reservedInstancesListingsSet**

Information about the Reserved Instance listing.

Type: Array of ReservedInstancesListing objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example shows all the listings associated with your account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesListings
&AUTHPARAMS
```

### Sample Response

```
<DescribeReservedInstancesListingsResponse>
    <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
    <reservedInstancesListingsSet>
        <item>
            <reservedInstancesListingId>253dfbf9-c335-4808-b956-d942cEXAMPLE</
reservedInstancesListingId>
            <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</
reservedInstancesId>
            <createDate>2012-07-06T19:35:29.000Z</createDate>
            <updateDate>2012-07-06T19:35:30.000Z</updateDate>
            <status>active</status>
            <statusMessage>ACTIVE</statusMessage>
            <instanceCounts>
                <item>
                    <state>Available</state>
                    <instanceCount>20</instanceCount>
                </item>
                <item>
                    <state>Sold</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Cancelled</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Pending</state>
                    <instanceCount>0</instanceCount>
                </item>
            </instanceCounts>
```

```
            <priceSchedules>
                <item>
                    <term>8</term>
                    <price>480.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>7</term>
                    <price>420.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>6</term>
                    <price>360.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>active</active>
                </item>
                <item>
                    <term>5</term>
                    <price>300.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>4</term>
                    <price>240.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>3</term>
                    <price>180.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>2</term>
                    <price>120.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
```

```
                    <term>1</term>
                    <price>60.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
            </priceSchedules>
            <tagSet/>
            <clientToken>myclienttoken1</clientToken>
        </item>
    </reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeReservedInstancesModifications

Describes the modifications made to your Reserved Instances. If no parameter is specified, information about all your Reserved Instances modification requests is returned. If a modification ID is specified, only information about the specific modification is returned.

For more information, see Modify Reserved Instances in the *Amazon EC2 User Guide*.

> **Note**
>
> The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Filter.N**

One or more filters.

- `client-token` - The idempotency token for the modification request.
- `create-date` - The time when the modification request was created.
- `effective-date` - The time when the modification becomes effective.
- `modification-result.reserved-instances-id` - The ID for the Reserved Instances created as part of the modification request. This ID is only available when the status of the modification is `fulfilled`.
- `modification-result.target-configuration.availability-zone` - The Availability Zone for the new Reserved Instances.
- `modification-result.target-configuration.availability-zone-id` - The ID of the Availability Zone for the new Reserved Instances.
- `modification-result.target-configuration.instance-count` - The number of new Reserved Instances.
- `modification-result.target-configuration.instance-type` - The instance type of the new Reserved Instances.

- `reserved-instances-id` - The ID of the Reserved Instances modified.
- `reserved-instances-modification-id` - The ID of the modification request.
- `status` - The status of the Reserved Instances modification request (`processing` | `fulfilled` | `failed`).
- `status-message` - The reason for the status.
- `update-date` - The time when the modification request was last updated.

Type: Array of Filter objects

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

**ReservedInstancesModificationId.N**

IDs for the submitted modification request.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**reservedInstancesModificationsSet**

The Reserved Instance modification information.

Type: Array of ReservedInstancesModification objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example illustrates one usage of DescribeReservedInstancesModifications.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesModifications
&AUTHPARAMS
```

### Example 2

This example filters the response to include only Reserved Instances modification requests with status `processing`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesModifications
&Filter.1.Name=status
&Filter.1.Value.1=processing
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeReservedInstancesOfferings

Describes Reserved Instance offerings that are available for purchase. With Reserved Instances, you purchase the right to launch instances for a period of time. During that time period, you do not receive insufficient capacity errors, and you pay a lower usage rate than the rate charged for On-Demand instances for the actual time used.

If you have listed your own Reserved Instances for sale in the Reserved Instance Marketplace, they will be excluded from these results. This is to ensure that you do not purchase your own Reserved Instances.

For more information, see Sell in the Reserved Instance Marketplace in the *Amazon EC2 User Guide*.

> **Note**
>
> The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZone**

The Availability Zone in which the Reserved Instance can be used.

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both.

Type: String

Required: No

**AvailabilityZoneId**

The ID of the Availability Zone.

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `availability-zone` - The Availability Zone where the Reserved Instance can be used.
- `availability-zone-id` - The ID of the Availability Zone where the Reserved Instance can be used.
- `duration` - The duration of the Reserved Instance (for example, one year or three years), in seconds (`31536000` | `94608000`).
- `fixed-price` - The purchase price of the Reserved Instance (for example, 9800.0).
- `instance-type` - The instance type that is covered by the reservation.
- `marketplace` - Set to `true` to show only Reserved Instance Marketplace offerings. When this filter is not used, which is the default behavior, all offerings from both AWS and the Reserved Instance Marketplace are listed.
- `product-description` - The Reserved Instance product platform description (`Linux/UNIX` | `Linux with SQL Server Standard` | `Linux with SQL Server Web` | `Linux with SQL Server Enterprise` | `SUSE Linux` | `Red Hat Enterprise Linux` | `Red Hat Enterprise Linux with HA` | `Windows` | `Windows with SQL Server Standard` | `Windows with SQL Server Web` | `Windows with SQL Server Enterprise`).
- `reserved-instances-offering-id` - The Reserved Instances offering ID.
- `scope` - The scope of the Reserved Instance (`Availability Zone` or `Region`).
- `usage-price` - The usage price of the Reserved Instance, per hour (for example, 0.84).

Type: Array of Filter objects

Required: No

**IncludeMarketplace**

Include Reserved Instance Marketplace offerings in the response.

Type: Boolean

Required: No

**InstanceTenancy**

The tenancy of the instances covered by the reservation. A Reserved Instance with a tenancy of `dedicated` is applied to instances that run in a VPC on single-tenant hardware (i.e., Dedicated Instances).

**Important:** The `host` value cannot be used with this parameter. Use the `default` or `dedicated` values only.

Default: `default`

Type: String

Valid Values: `default | dedicated | host`

Required: No

**InstanceType**

The instance type that the reservation will cover (for example, `m1.small`). For more information, see Amazon EC2 instance types in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge`

| c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge

| m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small |

t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge

| m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge

| c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge

```
| i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge |
m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge
| m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge |
m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium |
r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge
| r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge
| r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large |
c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge
| c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl
| c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large |
g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge
| r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge |
r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge
| r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-
flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge |
r8i-flex.12xlarge | r8i-flex.16xlarge
```

Required: No

**MaxDuration**

The maximum duration (in seconds) to filter when searching for offerings.

Default: 94608000 (3 years)

Type: Long

Required: No

**MaxInstanceCount**

The maximum number of instances to filter when searching for offerings.

Default: 20

Type: Integer

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. The maximum is 100.

Default: 100

Type: Integer

Required: No

**MinDuration**

The minimum duration (in seconds) to filter when searching for offerings.

Default: 2592000 (1 month)

Type: Long

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

**OfferingClass**

The offering class of the Reserved Instance. Can be `standard` or `convertible`.

Type: String

Valid Values: `standard | convertible`

Required: No

**OfferingType**

The Reserved Instance offering type. If you are using tools that predate the 2011-11-01 API version, you only have access to the `Medium Utilization` Reserved Instance offering type.

Type: String

Valid Values: `Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront`

Required: No

**ProductDescription**

The Reserved Instance product platform description. Instances that include `(Amazon VPC)` in the description are for use with Amazon VPC.

Type: String

Valid Values: `Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)`

Required: No

**ReservedInstancesOfferingId.N**

One or more Reserved Instances offering IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**reservedInstancesOfferingsSet**

A list of Reserved Instances offerings.

Type: Array of ReservedInstancesOffering objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example Describing Reserved Instance Marketplace Offerings Only

This example requests a list of Linux/UNIX, No Upfront Reserved Instances that are available through the Reserved Instance Marketplace only. When using the Query API, all strings must be URL-encoded.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=marketplace
&Filter.1.Value.1=true
&IncludeMarketplace=true
&OfferingType=No+Upfront
&ProductDescription=Linux%2FUNIX
&Version=2016-11-15
&AUTHPARAMS
```

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&AUTHPARAMS
```

#### Sample Response

```
<DescribeReservedInstancesOfferingsResponse>
    <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
    <reservedInstancesOfferingsSet>
        <item>
            <reservedInstancesOfferingId>253dfbf9-c335-4808-b956-d942cEXAMPLE</
reservedInstancesOfferingId>
            <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</
reservedInstancesId>
            <createDate>2012-07-06T19:35:29.000Z</createDate>
```

```
            <updateDate>2012-07-06T19:35:30.000Z</updateDate>
            <status>active</status>
            <statusMessage>ACTIVE</statusMessage>
            <instanceCounts>
                <item>
                    <state>Available</state>
                    <instanceCount>20</instanceCount>
                </item>
                <item>
                    <state>Sold</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Cancelled</state>
                    <instanceCount>0</instanceCount>
                </item>
                <item>
                    <state>Pending</state>
                    <instanceCount>0</instanceCount>
                </item>
            </instanceCounts>
            <priceSchedules>
                <item>
                    <term>8</term>
                    <price>480.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>7</term>
                    <price>420.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>6</term>
                    <price>360.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>active</active>
                </item>
                <item>
                    <term>5</term>
                    <price>300.0</price>
                    <currencyCode>USD</currencyCode>
```

```
                    <active>false</active>
                </item>
                <item>
                    <term>4</term>
                    <price>240.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>3</term>
                    <price>180.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>2</term>
                    <price>120.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
                <item>
                    <term>1</term>
                    <price>60.0</price>
                    <currencyCode>USD</currencyCode>
                    <active>false</active>
                </item>
            </priceSchedules>
            <tagSet/>
            <clientToken>myclienttoken1</clientToken>
        </item>
    </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a7f5-0841cEXAMPLE</
reservedInstancesOfferingId>
      <instanceType>m3.xlarge</instanceType>
      <availabilityZone>us-east-1e</availabilityZone>
      <duration>2332800</duration>
```

```
      <fixedPrice>0.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>No Upfront</offeringType>
      <recurringCharges>
           <item>
                <frequency>Hourly</frequency>
                <amount>0.19</amount>
            </item>
      </recurringCharges>
      <marketplace>true</marketplace>
      <pricingDetailsSet>
        <item>
          <price>0.0</price>
          <count>3</count>
        </item>
      </pricingDetailsSet>
       <offeringClass>standard</offeringClass>
      <scope>Availability Zone</scope>
    </item>
    <item>
      <reservedInstancesOfferingId>2bc7dafa-dafd-4257-bdf9-c0814EXAMPLE</
reservedInstancesOfferingId>
      <instanceType>m3.2xlarge</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>15552000</duration>
      <fixedPrice>1.01</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>No Upfront</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.38</amount>
        </item>
      </recurringCharges>
      <marketplace>true</marketplace>
      <pricingDetailsSet>
        <item>
          <price>1.01</price>
```

```
          <count>1</count>
        </item>
      </pricingDetailsSet>
      <offeringClass>standard</offeringClass>
      <scope>Availability Zone</scope>
    </item>
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

## Example Describing Offerings Only

This example lists AWS offerings only.

### Sample Request

```
http://ec2.amazonaws.com/doc/2016-11-15/?Action=DescribeReservedInstancesOfferings
&IncludeMarketplace=false
&AUTHPARAMS
```

### Sample Response

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>2bc7dafa-dafd-4257-b6tf-c0814EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a6y5-0841cEXAMPLE</
reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1e</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>631.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Partial Upfront</offeringType>
      <recurringCharges>
           <item>
                <frequency>Hourly</frequency>
                <amount>0.28</amount>
            </item>
      </recurringCharges>
```

```
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
      <offeringClass>standard</offeringClass>
      <scope>Availability Zone</scope>
    </item>
    <item>
      <reservedInstancesOfferingId>2bc7dafa-rafd-6t7y-bdf9-c0814EXAMPLE</
reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1b</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>631.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Partial Upfront</offeringType>
      <recurringCharges>
        <item>
          <frequency>Hourly</frequency>
          <amount>0.88</amount>
        </item>
      </recurringCharges>
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
      <offeringClass>convertible</offeringClass>
      <scope>Availability Zone</scope>
  </reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

## Example Using Tokens to Manage Results

You can use pagination support to query the results sequentially and in parts.

Specify the maximum number of results that are returned in the response. Then, each paginated response contains a token that can be provided as input to a subsequent DescribeReservedInstancesOfferings call to fetch the next page. (Make sure that you use URL encoding for the token value.)

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
```

```
&MaxResults=5
&AUTHPARAMS
```

### Sample Response

```
<DescribeReservedInstancesOfferingsResponse>
  <requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
  ...
    <item>
      <reservedInstancesOfferingId>649fd0c8-7846-46b8-8f84-a6400EXAMPLE</
reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>631.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Partial Upfront</offeringType>
      <recurringCharges>
        <item>
          <frequency>>Hourly</frequency>
          <amount>0.028</amount>
        </item>
      <recurringCharges>
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
      <offeringClass>standard</offeringClass>
      <scope>Availability Zone</scope>
    </item>
  ...
  </reservedInstancesOfferingsSet>
  <nextToken>h/C8YKPQBHEjW8xKz1827/Zzyb0VqsqkjRo3TqhFYeE=</nextToken>
</DescribeReservedInstancesOfferingsResponse>
&MaxResults=5
&NextToken=h%2FC8YKPQBHEjW8xKz1827%2FZzyb0VqsqkjRo3TqhFYeE%3D
&AUTHPARAMS
```

### Example Using Filters

This example filters the response to include only one-year, `m1.small` or `m1.large` Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to `Linux/UNIX (Amazon VPC)`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.2.Value.2=m1.large
&Filter.3.Name=product-description
&Filter.3.Value.1=Linux%2FUNIX
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeRouteServerEndpoints

Describes one or more route server endpoints.

A route server endpoint is an AWS-managed component inside a subnet that facilitates BGP (Border Gateway Protocol) connections between your route server and your BGP peers.

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to apply to the describe request.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**RouteServerEndpointId.N**

The IDs of the route server endpoints to describe.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**routeServerEndpointSet**

Information about the described route server endpoints.

Type: Array of RouteServerEndpoint objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeRouteServerPeers

Describes one or more route server peers.

A route server peer is a session between a route server endpoint and the device deployed in AWS (such as a firewall appliance or other network security function running on an EC2 instance). The device must meet these requirements:

- Have an elastic network interface in the VPC
- Support BGP (Border Gateway Protocol)
- Can initiate BGP sessions

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to apply to the describe request.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**RouteServerPeerId.N**

The IDs of the route server peers to describe.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**routeServerPeerSet**

Information about the described route server peers.

Type: Array of RouteServerPeer objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeRouteServers

Describes one or more route servers.

Amazon VPC Route Server simplifies routing for traffic between workloads that are deployed within a VPC and its internet gateways. With this feature, VPC Route Server dynamically updates VPC and internet gateway route tables with your preferred IPv4 or IPv6 routes to achieve routing fault tolerance for those workloads. This enables you to automatically reroute traffic within a VPC, which increases the manageability of VPC routing and interoperability with third-party workloads.

Route server supports the follow route table types:

- VPC route tables not associated with subnets
- Subnet route tables
- Internet gateway route tables

Route server does not support route tables associated with virtual private gateways. To propagate routes into a transit gateway route table, use Transit Gateway Connect.

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to apply to the describe request.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**RouteServerId.N**

The IDs of the route servers to describe.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**routeServerSet**

Information about the described route servers.

Type: Array of RouteServer objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeRouteTables

Describes your route tables. The default is to describe all your route tables. Alternatively, you can specify specific route table IDs or filter the results to include only the route tables that match specific criteria.

Each subnet in your VPC must be associated with a route table. If a subnet is not explicitly associated with any route table, it is implicitly associated with the main route table. This command does not return the subnet ID for implicit associations.

For more information, see Route tables in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `association.gateway-id` - The ID of the gateway involved in the association.
- `association.route-table-association-id` - The ID of an association ID for the route table.
- `association.route-table-id` - The ID of the route table involved in the association.
- `association.subnet-id` - The ID of the subnet involved in the association.
- `association.main` - Indicates whether the route table is the main route table for the VPC (`true` | `false`). Route tables that do not have an association ID are not returned in the response.

- owner-id - The ID of the AWS account that owns the route table.
- route-table-id - The ID of the route table.
- route.destination-cidr-block - The IPv4 CIDR range specified in a route in the table.
- route.destination-ipv6-cidr-block - The IPv6 CIDR range specified in a route in the route table.
- route.destination-prefix-list-id - The ID (prefix) of the AWS service specified in a route in the table.
- route.egress-only-internet-gateway-id - The ID of an egress-only Internet gateway specified in a route in the route table.
- route.gateway-id - The ID of a gateway specified in a route in the table.
- route.instance-id - The ID of an instance specified in a route in the table.
- route.nat-gateway-id - The ID of a NAT gateway.
- route.transit-gateway-id - The ID of a transit gateway.
- route.origin - Describes how the route was created. CreateRouteTable indicates that the route was automatically created when the route table was created; CreateRoute indicates that the route was manually added to the route table; EnableVgwRoutePropagation indicates that the route was propagated by route propagation.
- route.state - The state of a route in the route table (active | blackhole). The blackhole state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, the specified NAT instance has been terminated, and so on).
- route.vpc-peering-connection-id - The ID of a VPC peering connection specified in a route in the table.
- tag - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key Owner and the value TeamA, specify tag:Owner for the filter name and TeamA for the filter value.
- tag-key - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- vpc-id - The ID of the VPC for the route table.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 100.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**RouteTableId.N**

The IDs of the route tables.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**routeTableSet**

Information about the route tables.

Type: Array of RouteTable objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all your route tables. The first route table in the returned list is the VPC's main route table. Its association ID represents the association between the table and the VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRouteTables
&AUTHPARAMS
```

#### Sample Response

```
<DescribeRouteTablesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>fe876446-c8c0-4f2d-a6df-ed506example</requestId>
    <routeTableSet>
        <item>
            <routeTableId>rtb-1122334455667788a</routeTableId>
            <vpcId>vpc-12345678912345678</vpcId>
            <ownerId>111122223333</ownerId>
            <routeSet>
                <item>
                    <destinationCidrBlock>10.0.1.0/32</destinationCidrBlock>
                    <gatewayId>igw-012345678901abcdef</gatewayId>
                    <state>active</state>
                    <origin>CreateRoute</origin>
                </item>
                <item>
                    <destinationCidrBlock>172.31.0.0/16</destinationCidrBlock>
                    <gatewayId>local</gatewayId>
```

```
                    <state>active</state>
                    <origin>CreateRouteTable</origin>
                </item>
                <item>
                    <destinationCidrBlock>0.0.0.0/0</destinationCidrBlock>
                    <gatewayId>igw-012345678901abcdef</gatewayId>
                    <state>active</state>
                    <origin>CreateRoute</origin>
                </item>
            </routeSet>
            <associationSet>
                <item>
                    <routeTableAssociationId>rtbassoc-04ca27a6914a0b4fc</
routeTableAssociationId>
                    <routeTableId>rtb-1122334455667788a</routeTableId>
                    <main>true</main>
                </item>
            </associationSet>
            <propagatingVgwSet/>
            <tagSet/>
        </item>
    </routeTableSet>
</DescribeRouteTablesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeScheduledInstanceAvailability

Finds available schedules that meet the specified criteria.

You can search for an available schedule no more than 3 months in advance. You must meet the minimum required duration of 1,200 hours per year. For example, the minimum daily schedule is 4 hours, the minimum weekly schedule is 24 hours, and the minimum monthly schedule is 100 hours.

After you find a schedule that meets your needs, call PurchaseScheduledInstances to purchase Scheduled Instances with that schedule.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `availability-zone` - The Availability Zone (for example, `us-west-2a`).
- `instance-type` - The instance type (for example, `c4.large`).
- `platform` - The platform (`Linux/UNIX` or `Windows`).

Type: Array of Filter objects

Required: No

**FirstSlotStartTimeRange**

The time period for the first schedule to start.

Type: SlotDateTimeRangeRequest object

Required: Yes

**MaxResults**

The maximum number of results to return in a single call. This value can be between 5 and 300. The default value is 300. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 300.

Required: No

**MaxSlotDurationInHours**

The maximum available duration, in hours. This value must be greater than `MinSlotDurationInHours` and less than 1,720.

Type: Integer

Required: No

**MinSlotDurationInHours**

The minimum available duration, in hours. The minimum required duration is 1,200 hours per year. For example, the minimum daily schedule is 4 hours, the minimum weekly schedule is 24 hours, and the minimum monthly schedule is 100 hours.

Type: Integer

Required: No

**NextToken**

The token for the next set of results.

Type: String

Required: No

**Recurrence**

The schedule recurrence.

Type: ScheduledInstanceRecurrenceRequest object

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**scheduledInstanceAvailabilitySet**

Information about the available Scheduled Instances.

Type: Array of ScheduledInstanceAvailability objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeScheduledInstances

Describes the specified Scheduled Instances or all your Scheduled Instances.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `availability-zone` - The Availability Zone (for example, `us-west-2a`).
- `instance-type` - The instance type (for example, `c4.large`).
- `platform` - The platform (`Linux/UNIX` or `Windows`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return in a single call. This value can be between 5 and 300. The default value is 100. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

**NextToken**

The token for the next set of results.

Type: String

Required: No

**ScheduledInstanceId.N**

The Scheduled Instance IDs.

Type: Array of strings

Required: No

**SlotStartTimeRange**

The time period for the first schedule to start.

Type: SlotStartTimeRangeRequest object

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**scheduledInstanceSet**

Information about the Scheduled Instances.

Type: Array of ScheduledInstance objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSecondaryInterfaces

Describes one or more of your secondary interfaces.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `attachment.attachment-id` - The ID of the secondary interface attachment.
- `attachment.instance-id` - The ID of the instance to which the secondary interface is attached.
- `attachment.instance-owner-id` - The ID of the AWS account that owns the instance to which the secondary interface is attached.
- `attachment.status` - The attachment status (`attaching` | `attached` | `detaching` | `detached`).
- `private-ipv4-addresses.private-ip-address` - The private IPv4 address associated with the secondary interface.
- `owner-id` - The ID of the AWS account that owns the secondary interface.
- `secondary-interface-arn` - The ARN of the secondary interface.
- `secondary-interface-id` - The ID of the secondary interface.
- `secondary-interface-type` - The type of secondary interface (`secondary`).
- `secondary-network-id` - The ID of the secondary network.
- `secondary-network-type` - The type of the secondary network (`rdma`).

- `secondary-subnet-id` - The ID of the secondary subnet.
- `status` - The status of the secondary interface (`available` | `in-use`).
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**SecondaryInterfaceId.N**

The IDs of the secondary interfaces.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**secondaryInterfaceSet**

Information about the secondary interfaces.

Type: Array of SecondaryInterface objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes all secondary interfaces in the current Region.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecondaryInterfaces
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSecondaryInterfacesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <secondaryInterfaceSet>
      <item>
         <secondaryInterfaceId>si-0123456789abcdef0</secondaryInterfaceId>
         <secondaryInterfaceArn>arn:aws:ec2:us-east-2:123456789012:secondary-interface/
si-0123456789abcdef0</secondaryInterfaceArn>
```

```
         <ownerId>123456789012</ownerId>
         <secondarySubnetId>ss-0123456789abcdef0</secondarySubnetId>
         <secondaryNetworkId>sn-0123456789abcdef0</secondaryNetworkId>
         <secondaryNetworkType>rdma</secondaryNetworkType>
         <availabilityZoneId>use2-az1</availabilityZoneId>
         <availabilityZone>us-east-2a</availabilityZone>
         <macAddress>02:2f:8f:b0:cf:75</macAddress>
         <sourceDestCheck>true</sourceDestCheck>
         <status>in-use</status>
         <secondaryInterfaceType>secondary</secondaryInterfaceType>
         <privateIpv4Addresses>
            <item>
               <privateIpAddress>10.0.1.17</privateIpAddress>
            </item>
         </privateIpv4Addresses>
         <attachment>
            <status>attached</status>
            <deviceIndex>0</deviceIndex>
            <networkCardIndex>1</networkCardIndex>
            <instanceId>i-1234567890abcdef0</instanceId>
            <deleteOnTermination>true</deleteOnTermination>
            <attachmentId>si-attach-0123456789abcdef0</attachmentId>
            <instanceOwnerId>123456789012</instanceOwnerId>
            <attachTime>2026-02-28T23:35:33.000Z</attachTime>
         </attachment>
         <tagSet>
            <item>
               <key>Name</key>
               <value>Prod Secondary Interface</value>
            </item>
         </tagSet>
      </item>
   </secondaryInterfaceSet>
</DescribeSecondaryInterfacesResponse>
```

## Example 2

This example uses filters to describe secondary interfaces attached to a specific instance.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecondaryInterfaces
&Filter.1.Name=attachment.instance-id
```

```
&Filter.1.Value.1=i-1234567890abcdef0
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSecondaryNetworks

Describes one or more secondary networks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters. The following are the possible values:

- `ipv4-cidr-block-association.association-id` - The association ID for an IPv4 CIDR block associated with the secondary network.
- `ipv4-cidr-block-association.cidr-block` - An IPv4 CIDR block associated with the secondary network.
- `ipv4-cidr-block-association.state` - The state of an IPv4 CIDR block associated with the secondary network.
- `owner-id` - The ID of the AWS account that owns the secondary network.
- `secondary-network-id` - The ID of the secondary network.
- `secondary-network-arn` - The ARN of the secondary network.
- `state` - The state of the secondary network (`create-in-progress` | `create-complete` | `create-failed` | `delete-in-progress` | `delete-complete` | `delete-failed`).
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `type` - The type of the secondary network (`rdma`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**SecondaryNetworkId.N**

The IDs of the secondary networks.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**secondaryNetworkSet**

Information about the secondary networks.

Type: Array of SecondaryNetwork objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes the specified secondary networks.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecondaryNetworks
   &SecondaryNetworkId.1=sn-0123456789abcdef0
   &SecondaryNetworkId.2=sn-0987654321fedcba0
   &AUTHPARAMS
```

#### Sample Response

```
<DescribeSecondaryNetworksResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <secondaryNetworkSet>
      <item>
         <secondaryNetworkId>sn-0123456789abcdef0</secondaryNetworkId>
         <secondaryNetworkArn>arn:aws:ec2:us-east-2:123456789012:secondary-network/
sn-0123456789abcdef0</secondaryNetworkArn>
         <ownerId>123456789012</ownerId>
         <type>rdma</type>
```

```
         <state>create-complete</state>
         <ipv4CidrBlockAssociations>
            <item>
               <associationId>sn-cidr-assoc-56789901234abcdef0</associationId>
               <cidrBlock>10.0.0.0/16</cidrBlock>
               <state>associated</state>
            </item>
         </ipv4CidrBlockAssociations>
         <tagSet>
            <item>
               <key>Name</key>
               <value>Prod Secondary Network</value>
            </item>
         </tagSet>
      </item>
      <item>
         <secondaryNetworkId>sn-0987654321fedcba0</secondaryNetworkId>
         <secondaryNetworkArn>arn:aws:ec2:us-east-2:123456789012:secondary-network/
sn-0987654321fedcba0</secondaryNetworkArn>
         <ownerId>123456789012</ownerId>
         <type>rdma</type>
         <state>create-complete</state>
         <ipv4CidrBlockAssociations>
            <item>
               <associationId>sn-cidr-assoc-09876543210fedcba0</associationId>
               <cidrBlock>10.1.0.0/16</cidrBlock>
               <state>associated</state>
            </item>
         </ipv4CidrBlockAssociations>
         <tagSet>
            <item>
               <key>Name</key>
               <value>Dev Secondary Network</value>
            </item>
         </tagSet>
      </item>
   </secondaryNetworkSet>
</DescribeSecondaryNetworksResponse>
```

## Example 2

This example uses filters to describe any secondary network you own that has a tag with the key Environment and the value Production and whose state is create-complete.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecondaryNetworks
   &Filter.1.Name=tag:Environment
   &Filter.1.Value.1=Production
   &Filter.2.Name=state
   &Filter.2.Value.1=create-complete
   &AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSecondarySubnets

Describes one or more of your secondary subnets.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `ipv4-cidr-block-association.association-id` - The association ID for an IPv4 CIDR block associated with the secondary subnet.
- `ipv4-cidr-block-association.cidr-block` - An IPv4 CIDR block associated with the secondary subnet.
- `ipv4-cidr-block-association.state` - The state of an IPv4 CIDR block associated with the secondary subnet.
- `owner-id` - The ID of the AWS account that owns the secondary subnet.
- `secondary-network-id` - The ID of the secondary network.
- `secondary-network-type` - The type of the secondary network (`rdma`).
- `secondary-subnet-id` - The ID of the secondary subnet.
- `secondary-subnet-arn` - The ARN of the secondary subnet.
- `state` - The state of the secondary subnet (`create-in-progress` | `create-complete` | `create-failed` | `delete-in-progress` | `delete-complete` | `delete-failed`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that

have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**SecondarySubnetId.N**

The IDs of the secondary subnets.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**secondarySubnetSet**

Information about the secondary subnets.

Type: Array of SecondarySubnet objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the specified secondary subnets.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecondarySubnets
&SecondarySubnetId.1=ss-0123456789abcdef0
&SecondarySubnetId.2=ss-0987654321fedcba0
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSecondarySubnetsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <secondarySubnetSet>
      <item>
         <secondarySubnetId>ss-0123456789abcdef0</secondarySubnetId>
         <secondarySubnetArn>arn:aws:ec2:us-east-2:123456789012:secondary-subnet/
ss-0123456789abcdef0</secondarySubnetArn>
         <secondaryNetworkId>sn-0123456789abcdef0</secondaryNetworkId>
         <secondaryNetworkType>rdma</secondaryNetworkType>
         <ownerId>123456789012</ownerId>
         <availabilityZoneId>use2-az1</availabilityZoneId>
```

```
         <availabilityZone>us-east-2a</availabilityZone>
         <ipv4CidrBlockAssociations>
            <item>
               <associationId>ss-cidr-assoc-56789901234abcdef0</associationId>
               <cidrBlock>10.0.0.0/24</cidrBlock>
               <state>associated</state>
            </item>
         </ipv4CidrBlockAssociations>
         <state>create-complete</state>
         <tagSet>
            <item>
               <key>Name</key>
               <value>Prod Secondary Subnet</value>
            </item>
         </tagSet>
      </item>
      <item>
         <secondarySubnetId>ss-0987654321fedcba0</secondarySubnetId>
         <secondarySubnetArn>arn:aws:ec2:us-east-2:123456789012:secondary-subnet/
ss-0987654321fedcba0</secondarySubnetArn>
         <secondaryNetworkId>sn-0123456789abcdef0</secondaryNetworkId>
         <secondaryNetworkType>rdma</secondaryNetworkType>
         <ownerId>123456789012</ownerId>
         <availabilityZoneId>use2-az1</availabilityZoneId>
         <availabilityZone>us-east-2a</availabilityZone>
         <ipv4CidrBlockAssociations>
            <item>
               <associationId>ss-cidr-assoc-09876543210fedcba0</associationId>
               <cidrBlock>10.0.1.0/24</cidrBlock>
               <state>associated</state>
            </item>
         </ipv4CidrBlockAssociations>
         <state>create-complete</state>
         <tagSet>
            <item>
               <key>Name</key>
               <value>Dev Secondary Subnet</value>
            </item>
         </tagSet>
      </item>
   </secondarySubnetSet>
</DescribeSecondarySubnetsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSecurityGroupReferences

Describes the VPCs on the other side of a VPC peering or Transit Gateway connection that are referencing the security groups you've specified in this request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupId.N**

The IDs of the security groups in your account.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**securityGroupReferenceSet**

Information about the VPCs with the referencing security groups.

Type: Array of SecurityGroupReference objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes the security group references for sg-11aa22bb. The response indicates that this security group is referenced by a security group in VPC vpc-1a2b3c4d.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroupReferences
&GroupId.1=sg-11aa22bb
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSecurityGroupReferencesResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>19744c88-baa2-45df-905f-example</requestId>
    <securityGroupReferenceSet>
        <item>
            <referencingVpcId>vpc-1a2b3c4d</referencingVpcId>
            <vpcPeeringConnectionId>pcx-b04deed9</vpcPeeringConnectionId>
            <groupId>sg-11aa22bb</groupId>
        </item>
    </securityGroupReferenceSet>
</DescribeSecurityGroupReferencesResponse>
```

### Example 2

This example describes the security group references for sg-11aa22bb and sg-1111aaaa.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroupReferences
&GroupId.1=sg-11aa22bb
&GroupId.2=sg-1111aaaa
&AUTHPARAMS
```

### Sample Response

```
<DescribeSecurityGroupReferencesResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>d1835dca-61c1-459d-99cb-example</requestId>
    <securityGroupReferenceSet>
        <item>
            <referencingVpcId>vpc-81326ae4</referencingVpcId>
            <vpcPeeringConnectionId>pcx-b04deed9</vpcPeeringConnectionId>
            <groupId>sg-11aa22bb</groupId>
        </item>
        <item>
            <referencingVpcId>vpc-1a2b3c4d</referencingVpcId>
            <vpcPeeringConnectionId>pcx-aabbccdd</vpcPeeringConnectionId>
            <groupId>sg-1111aaaa</groupId>
        </item>
    </securityGroupReferenceSet>
</DescribeSecurityGroupReferencesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSecurityGroupRules

Describes one or more of your security group rules.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `group-id` - The ID of the security group.
- `security-group-rule-id` - The ID of the security group rule.
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. This value can be between 5 and 1000. If this parameter is not specified, then all items are returned. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**SecurityGroupRuleId.N**

The IDs of the security group rules.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**securityGroupRuleSet**

Information about security group rules.

Type: Array of SecurityGroupRule objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSecurityGroups

Describes the specified security groups or all of your security groups.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters. If using multiple filters for rules, the results include security groups for which any combination of rules - not necessarily a single rule - match all filters.

- `description` - The description of the security group.
- `egress.ip-permission.cidr` - An IPv4 CIDR block for an outbound security group rule.
- `egress.ip-permission.from-port` - For an outbound rule, the start of port range for the TCP and UDP protocols, or an ICMP type number.
- `egress.ip-permission.group-id` - The ID of a security group that has been referenced in an outbound security group rule.
- `egress.ip-permission.group-name` - The name of a security group that is referenced in an outbound security group rule.
- `egress.ip-permission.ipv6-cidr` - An IPv6 CIDR block for an outbound security group rule.
- `egress.ip-permission.prefix-list-id` - The ID of a prefix list to which a security group rule allows outbound access.
- `egress.ip-permission.protocol` - The IP protocol for an outbound security group rule (`tcp` | udp | `icmp`, a protocol number, or -1 for all protocols).

- `egress.ip-permission.to-port` - For an outbound rule, the end of port range for the TCP and UDP protocols, or an ICMP code.
- `egress.ip-permission.user-id` - The ID of an AWS account that has been referenced in an outbound security group rule.
- `group-id` - The ID of the security group.
- `group-name` - The name of the security group.
- `ip-permission.cidr` - An IPv4 CIDR block for an inbound security group rule.
- `ip-permission.from-port` - For an inbound rule, the start of port range for the TCP and UDP protocols, or an ICMP type number.
- `ip-permission.group-id` - The ID of a security group that has been referenced in an inbound security group rule.
- `ip-permission.group-name` - The name of a security group that is referenced in an inbound security group rule.
- `ip-permission.ipv6-cidr` - An IPv6 CIDR block for an inbound security group rule.
- `ip-permission.prefix-list-id` - The ID of a prefix list from which a security group rule allows inbound access.
- `ip-permission.protocol` - The IP protocol for an inbound security group rule (`tcp` | `udp` | `icmp`, a protocol number, or -1 for all protocols).
- `ip-permission.to-port` - For an inbound rule, the end of port range for the TCP and UDP protocols, or an ICMP code.
- `ip-permission.user-id` - The ID of an AWS account that has been referenced in an inbound security group rule.
- `owner-id` - The AWS account ID of the owner of the security group.
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC specified when the security group was created.

Type: Array of Filter objects

Required: No

**GroupId.N**

The IDs of the security groups. Required for security groups in a nondefault VPC.

Default: Describes all of your security groups.

Type: Array of strings

Required: No

**GroupName.N**

[Default VPC] The names of the security groups. You can specify either the security group name or the security group ID.

Default: Describes all of your security groups.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. This value can be between 5 and 1000. If this parameter is not specified, then all items are returned. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**securityGroupInfo**

Information about the security groups.

Type: Array of SecurityGroup objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes the specified security group. The response indicates that this security group references another security group. The referenced group can be in a different VPC if used through a VPC peering connection. If the referenced security group or the VPC peering connection is deleted, the rule becomes stale but is not automatically removed from the security group.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&GroupId.1=sg-1a2b3c4d
&AUTHPARAMS
```

## Sample Response

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>edb7c570-be05-4192-bd1b-example</requestId>
    <securityGroupInfo>
        <item>
            <ownerId>123456789012</ownerId>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>MySecurityGroup</groupName>
            <groupDescription>MySecurityGroup</groupDescription>
            <vpcId>vpc-81326ae4</vpcId>
            <ipPermissions>
                <item>
                    <ipProtocol>tcp</ipProtocol>
                    <fromPort>22</fromPort>
                    <toPort>22</toPort>
                    <groups/>
                    <ipRanges>
                        <item>
                            <cidrIp>0.0.0.0/0</cidrIp>
                        </item>
                    </ipRanges>
                    <prefixListIds/>
                </item>
                <item>
                    <ipProtocol>icmp</ipProtocol>
                    <fromPort>-1</fromPort>
                    <toPort>-1</toPort>
                    <groups>
                        <item>
                            <securityGroupRuleId>sgr-abcdefghi01234560</
securityGroupRuleId>
                            <userId>111222333444</userId>
                            <groupId>sg-11aa22bb</groupId>
                            <vpcId>vpc-dd326ab8</vpcId>
                            <vpcPeeringConnectionId>pcx-11223344</
vpcPeeringConnectionId>
                            <peeringStatus>active</peeringStatus>
                        </item>
                    </groups>
                    <ipRanges/>
                    <prefixListIds/>
                </item>
            </ipPermissions>
```

```
            <ipPermissionsEgress>
                <item>
                    <ipProtocol>-1</ipProtocol>
                    <groups/>
                    <ipRanges>
                        <item>
                            <cidrIp>0.0.0.0/0</cidrIp>
                        </item>
                    </ipRanges>
                    <prefixListIds/>
                </item>
            </ipPermissionsEgress>
        </item>
    </securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

## Example 2

This example describes all security groups that grant access over port 22 and that grant access from instances associated with `app_server_group` or `database_group`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&Filter.1.Name=ip-permission.protocol
&Filter.1.Value.1=tcp
&Filter.2.Name=ip-permission.from-port
&Filter.2.Value.1=22
&Filter.3.Name=ip-permission.to-port
&Filter.3.Value.1=22
&Filter.4.Name=ip-permission.group-name
&Filter.4.Value.1=app_server_group
&Filter.4.Value.2=database_group
&AUTHPARAMS
```

## Example 3

This example describes the specified security group. The security group has a rule that allows all outbound IPv6 traffic (this rule is added by default for security groups in an IPv6-enabled VPC) and a rule that allows inbound access over SSH for IPv6 traffic.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&GroupId.1=sg-9bf6ceff
&AUTHPARAMS
```

### Sample Response

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>1d62eae0-acdd-481d-88c9-example</requestId>
    <securityGroupInfo>
        <item>
            <ownerId>123456789012</ownerId>
            <groupId>sg-9bf6ceff</groupId>
            <groupName>SSHAccess</groupName>
            <groupDescription>Security group for SSH access</groupDescription>
            <vpcId>vpc-31896b55</vpcId>
            <ipPermissions>
                <item>
                    <ipProtocol>tcp</ipProtocol>
                    <fromPort>22</fromPort>
                    <toPort>22</toPort>
                    <groups/>
                    <ipRanges>
                        <item>
                            <cidrIp>0.0.0.0/0</cidrIp>
                        </item>
                    </ipRanges>
                    <ipv6Ranges>
                        <item>
                            <cidrIpv6>::/0</cidrIpv6>
                        </item>
                    </ipv6Ranges>
                    <prefixListIds/>
                </item>
            </ipPermissions>
            <ipPermissionsEgress>
                <item>
                    <ipProtocol>-1</ipProtocol>
                    <groups/>
                    <ipRanges>
                        <item>
                            <cidrIp>0.0.0.0/0</cidrIp>
```

```
                        </item>
                    </ipRanges>
                    <ipv6Ranges>
                        <item>
                            <cidrIpv6>::/0</cidrIpv6>
                        </item>
                    </ipv6Ranges>
                    <prefixListIds/>
                </item>
            </ipPermissionsEgress>
        </item>
    </securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

## Example 4

This example describes the specified security group. For the ingress rule that permits RDP traffic from IPv4 address range `203.0.113.0/24`, there is a rule description.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&GroupId.1=sg-bcc24bcd
&AUTHPARAMS
```

### Sample Response

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>6b0c76fb-0da6-4357-bb60-1fexample</requestId>
    <securityGroupInfo>
        <item>
            <ownerId>123456789012</ownerId>
            <groupId>sg-bcc24bcd</groupId>
            <groupName>default</groupName>
            <groupDescription>default VPC security group</groupDescription>
            <vpcId>vpc-a33cbfda</vpcId>
            <ipPermissions>
                <item>
                    <ipProtocol>-1</ipProtocol>
                    <groups>
                        <item>
                            <userId>123456789012</userId>
```

```
                            <groupId>sg-bcc24bcd</groupId>
                        </item>
                    </groups>
                    <ipRanges/>
                    <ipv6Ranges/>
                    <prefixListIds/>
                </item>
                <item>
                    <ipProtocol>tcp</ipProtocol>
                    <fromPort>3389</fromPort>
                    <toPort>3389</toPort>
                    <groups/>
                    <ipRanges>
                        <item>
                            <cidrIp>203.0.113.0/24</cidrIp>
                            <description>RDP access from B network</description>
                        </item>
                    </ipRanges>
                    <ipv6Ranges/>
                    <prefixListIds/>
                </item>
            </ipPermissions>
            <ipPermissionsEgress>
                <item>
                    <ipProtocol>-1</ipProtocol>
                    <groups/>
                    <ipRanges>
                        <item>
                            <cidrIp>0.0.0.0/0</cidrIp>
                        </item>
                    </ipRanges>
                    <ipv6Ranges/>
                    <prefixListIds/>
                </item>
            </ipPermissionsEgress>
        </item>
    </securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSecurityGroupVpcAssociations

Describes security group VPC associations made with AssociateSecurityGroupVpc.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

Security group VPC association filters.

- `group-id`: The security group ID.
- `group-owner-id`: The group owner ID.
- `state`: The state of the association.
- `vpc-id`: The ID of the associated VPC.
- `vpc-owner-id`: The account ID of the VPC owner.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**securityGroupVpcAssociationSet**

The security group VPC associations.

Type: Array of SecurityGroupVpcAssociation objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeServiceLinkVirtualInterfaces

Describes the Outpost service link virtual interfaces.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters to use for narrowing down the request. The following filters are supported:

- `outpost-lag-id` - The ID of the Outpost LAG.
- `outpost-arn` - The Outpost ARN.
- `owner-id` - The ID of the AWS account that owns the service link virtual interface.
- `state` - The state of the Outpost LAG.
- `vlan` - The ID of the address pool.
- `service-link-virtual-interface-id` - The ID of the service link virtual interface.
- `local-gateway-virtual-interface-id` - The ID of the local gateway virtual interface.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**ServiceLinkVirtualInterfaceId.N**

The IDs of the service link virtual interfaces.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**serviceLinkVirtualInterfaceSet**

Describes the service link virtual interfaces.

Type: Array of ServiceLinkVirtualInterface objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSnapshotAttribute

Describes the specified attribute of the specified snapshot. You can specify only one attribute at a time.

For more information about EBS snapshots, see Amazon EBS snapshots in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The snapshot attribute you would like to view.

Type: String

Valid Values: `productCodes | createVolumePermission`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SnapshotId**

The ID of the EBS snapshot.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**createVolumePermission**

The users and groups that have the permissions for creating volumes from the snapshot.

Type: Array of CreateVolumePermission objects

**productCodes**

The product codes.

Type: Array of ProductCode objects

**requestId**

The ID of the request.

Type: String

**snapshotId**

The ID of the EBS snapshot.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the create volume permissions for the specified snapshot.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute
&SnapshotId=snap-1234567890abcdef0
&Attribute=createVolumePermission
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <snapshotId>snap-1234567890abcdef0</snapshotId>
   <createVolumePermission>
      <item>
         <group>all</group>
      </item>
   </createVolumePermission>
</DescribeSnapshotAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSnapshots

Describes the specified EBS snapshots available to you or all of the EBS snapshots available to you.

The snapshots available to you include public snapshots, private snapshots that you own, and private snapshots owned by other AWS accounts for which you have explicit create volume permissions.

The create volume permissions fall into the following categories:

- *public*: The owner of the snapshot granted create volume permissions for the snapshot to the `all` group. All AWS accounts have create volume permissions for these snapshots.
- *explicit*: The owner of the snapshot granted create volume permissions to a specific AWS account.
- *implicit*: An AWS account has implicit create volume permissions for all snapshots it owns.

The list of snapshots returned can be filtered by specifying snapshot IDs, snapshot owners, or AWS accounts with create volume permissions. If no options are specified, Amazon EC2 returns all snapshots for which you have create volume permissions.

If you specify one or more snapshot IDs, only snapshots that have the specified IDs are returned. If you specify an invalid snapshot ID, an error is returned. If you specify a snapshot ID for which you do not have access, it is not included in the returned results.

If you specify one or more snapshot owners using the `OwnerIds` option, only snapshots from the specified owners and for which you have access are returned. The results can include the AWS account IDs of the specified owners, `amazon` for snapshots owned by Amazon, or `self` for snapshots that you own.

If you specify a list of restorable users, only snapshots with create snapshot permissions for those users are returned. You can specify AWS account IDs (if you own the snapshots), `self` for snapshots for which you own or have explicit permissions, or `all` for public snapshots.

If you are describing a long list of snapshots, we recommend that you paginate the output to make the list more manageable. For more information, see Pagination.

To get the state of fast snapshot restores for a snapshot, use DescribeFastSnapshotRestores.

For more information about EBS snapshots, see Amazon EBS snapshots in the *Amazon EBS User Guide*.

**Important**

We strongly recommend using only paginated requests. Unpaginated requests are susceptible to throttling and timeouts.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `description` - A description of the snapshot.
- `encrypted` - Indicates whether the snapshot is encrypted (`true` | `false`)
- `owner-alias` - The owner alias, from an Amazon-maintained list (`amazon`). This is not the user-configured AWS account alias set using the IAM console. We recommend that you use the related parameter instead of this filter.
- `owner-id` - The AWS account ID of the owner. We recommend that you use the related parameter instead of this filter.
- `progress` - The progress of the snapshot, as a percentage (for example, 80%).
- `snapshot-id` - The snapshot ID.
- `start-time` - The time stamp when the snapshot was initiated.
- `status` - The status of the snapshot (`pending` | `completed` | `error`).
- `storage-tier` - The storage tier of the snapshot (`archive` | `standard`).

- `transfer-type` - The type of operation used to create the snapshot (`time-based` | `standard`).
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `volume-id` - The ID of the volume the snapshot is for.
- `volume-size` - The size of the volume, in GiB.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**Owner.N**

Scopes the results to snapshots with the specified owners. You can specify a combination of AWS account IDs, `self`, and `amazon`.

Type: Array of strings

Required: No

**RestorableBy.N**

The IDs of the AWS accounts that can create volumes from the snapshot.

Type: Array of strings

Required: No

**SnapshotId.N**

The snapshot IDs.

Default: Describes the snapshots for which you have create volume permissions.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**snapshotSet**

Information about the snapshots.

Type: Array of Snapshot objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes a snapshot with an ID of `snap-1234567890abcdef0`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&SnapshotId=snap-1234567890abcdef0
&AUTHPARAMS
```

### Sample Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>12345678-1234-1234-1234-3755ba4b9fa6</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-0abcdef1234567890</snapshotId>
      <volumeId>vol-01234567890abcdef</volumeId>
      <status>completed</status>
      <startTime>2025-02-03T23:53:18.195Z</startTime>
      <progress>100%</progress>
      <ownerId>123456789012</ownerId>
      <volumeSize>8</volumeSize>
      <description>My root volume snapshot</description>
      <tagSet>
        <item>
          <key>purpose</key>
          <value>production_backup</value>
        </item>
      </tagSet>
      <encrypted>true</encrypted>
      <kmsKeyId>arn:aws:kms:us-east-1:123456789012:key/12345678-abcd-9876-ab12-
cd56f438c90b</kmsKeyId>
      <storageTier>standard</storageTier>
      <transferType>standard</transferType>
      <completionTime>2025-02-03T23:56:27.864Z</completionTime>
      <fullSnapshotSizeInBytes>1770520576</fullSnapshotSizeInBytes>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

### Example

This example filters the response to include only snapshots with the `pending` status, and a tag with the key `Owner` and the value `DbAdmin`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&Filter.1.Name=status
&Filter.1.Value.1=pending
&Filter.2.Name=tag:Owner
&Filter.2.Value.1=DbAdmin
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSnapshotTierStatus

Describes the storage tier status of one or more Amazon EBS snapshots.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `snapshot-id` - The snapshot ID.
- `volume-id` - The ID of the volume the snapshot is for.
- `last-tiering-operation` - The state of the last archive or restore action. (`archival-in-progress` | `archival-completed` | `archival-failed` | `permanent-restore-in-progress` | `permanent-restore-completed` | `permanent-restore-failed` | `temporary-restore-in-progress` | `temporary-restore-completed` | `temporary-restore-failed`)

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**snapshotTierStatusSet**

Information about the snapshot's storage tier.

Type: Array of SnapshotTierStatus objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSpotDatafeedSubscription

Describes the data feed for Spot Instances. For more information, see Spot Instance data feed in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**spotDatafeedSubscription**

The Spot Instance data feed subscription.

Type: SpotDatafeedSubscription object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes the data feed for the account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotDatafeedSubscription
&AUTHPARAMS
```

### Sample Response

```
<DescribeSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <spotDatafeedSubscription>
      <ownerId>123456789012</ownerId>
      <bucket>amzn-s3-demo-bucket</bucket>
      <prefix>spotdata_</prefix>
      <state>Active</state>
   </spotDatafeedSubscription>
</DescribeSpotDatafeedSubscriptionResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DescribeSpotFleetInstances

Describes the running instances for the specified Spot Fleet.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

Required: No

**SpotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**activeInstanceSet**

The running instances. This list is refreshed periodically and might be out of date.

Type: Array of ActiveInstance objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**spotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the running instances for Spot Fleet request sfr-123f8fc2-cb31-425e-abcd-example2710.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=DescribeSpotFleetInstances
&SpotFleetRequestId=sfr-123f8fc2-cb31-425e-abcd-example2710
```

```
&AUTHPARAMS
```

### Sample Response

```
<DescribeSpotFleetInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>cfb09950-45e2-472d-a6a9-example</requestId>
    <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRequestId>
    <activeInstanceSet>
        <item>
            <instanceId>i-1234567890abcdef0</instanceId>
            <spotInstanceRequestId>sir-1a1a1a1a</spotInstanceRequestId>
            <instanceType>m3.medium</instanceType>
        </item>
        <item>
            <instanceId>i-1234567890abcdef1</instanceId>
            <spotInstanceRequestId>sir-2b2b2b2b</spotInstanceRequestId>
            <instanceType>m3.medium</instanceType>
        </item>
        <item>
            <instanceId>i-1234567890abcdef2</instanceId>
            <spotInstanceRequestId>sir-3c3c3c3c</spotInstanceRequestId>
            <instanceType>m3.medium</instanceType>
        </item>
        <item>
            <instanceId>i-1234567890abcdef3</instanceId>
            <spotInstanceRequestId>sir-4d4d4d4d</spotInstanceRequestId>
            <instanceType>m3.medium</instanceType>
        </item>
        <item>
            <instanceId>i-1234567890abcdef4</instanceId>
            <spotInstanceRequestId>sir-5e5e5e5e</spotInstanceRequestId>
            <instanceType>m3.medium</instanceType>
        </item>
    </activeInstanceSet>
</DescribeSpotFleetInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSpotFleetRequestHistory

Describes the events for the specified Spot Fleet request during the specified time.

Spot Fleet events are delayed by up to 30 seconds before they can be described. This ensures that you can query by the last evaluated time and not miss a recorded event. Spot Fleet events are available for 48 hours.

For more information, see Monitor fleet events using Amazon EventBridge in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EventType**

The type of events to describe. By default, all events are described.

Type: String

Valid Values: `instanceChange | fleetRequestChange | error | information`

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

Required: No

**SpotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

Required: Yes

**StartTime**

The starting date and time for the events, in UTC format (for example, *YYYY*-*MM*-*DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

Required: Yes

## Response Elements

The following elements are returned by the service.

**historyRecordSet**

Information about the events in the history of the Spot Fleet request.

Type: Array of HistoryRecord objects

**lastEvaluatedTime**

The last date and time for the events, in UTC format (for example, *YYYY*-*MM*-*DD*T*HH*:*MM*:*SS*Z). All records up to this time were retrieved.

If `nextToken` indicates that there are more items, this value is not present.

Type: Timestamp

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**spotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

**startTime**

The starting date and time for the events, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the events for Spot Fleet request sfr-123f8fc2-cb31-425e-abcd-example2710 from the specified start time.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotFleetRequestHistory
&SpotFleetRequestId=sfr-123f8fc2-cb31-425e-abcd-example2710
&StartTime=2015-07-01T12:00:00Z
&AUTHPARAMS
```

## Sample Response

```
<DescribeSpotFleetRequestHistoryResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>30be3aaf-afd2-408c-b62b-example</requestId>
    <lastEvaluatedTime>2015-07-01T13:29:40+0000</lastEvaluatedTime>
    <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRequestId>
    <startTime>2015-07-01T12:00:00Z</startTime>
    <historyRecordSet>
        <item>
            <eventInformation>
                <eventSubType>submitted</eventSubType>
            </eventInformation>
            <eventType>fleetRequestChange</eventType>
            <timestamp>2015-07-01T13:10:10.219Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <eventSubType>active</eventSubType>
            </eventInformation>
            <eventType>fleetRequestChange</eventType>
            <timestamp>2015-07-01T13:10:11.624Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <eventDescription>m3.medium, ami-1ecae776, Linux/UNIX (Amazon VPC); old
 price: 0.0153, new price: 0.0153</eventDescription>
                <eventSubType>price_update</eventSubType>
            </eventInformation>
            <eventType>fleetRequestChange</eventType>
            <timestamp>2015-07-01T13:10:13.365Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <instanceId>i-1234567890abcdef0</instanceId>
                <eventSubType>launched</eventSubType>
            </eventInformation>
            <eventType>instanceChange</eventType>
            <timestamp>2015-07-01T13:19:53.795Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <instanceId>i-1234567890abcdef1</instanceId>
                <eventSubType>launched</eventSubType>
```

```
            </eventInformation>
            <eventType>instanceChange</eventType>
            <timestamp>2015-07-01T13:20:39.777Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <instanceId>i-1234567890abcdef2</instanceId>
                <eventSubType>launched</eventSubType>
            </eventInformation>
            <eventType>instanceChange</eventType>
            <timestamp>2015-07-01T13:20:57.773Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <instanceId>i-1234567890abcdef3</instanceId>
                <eventSubType>launched</eventSubType>
            </eventInformation>
            <eventType>instanceChange</eventType>
            <timestamp>2015-07-01T13:22:05.696Z</timestamp>
        </item>
        <item>
            <eventInformation>
                <instanceId>i-1234567890abcdef4</instanceId>
                <eventSubType>launched</eventSubType>
            </eventInformation>
            <eventType>instanceChange</eventType>
            <timestamp>2015-07-01T13:23:58.927Z</timestamp>
        </item>
    </historyRecordSet>
</DescribeSpotFleetRequestHistoryResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSpotFleetRequests

Describes your Spot Fleet requests.

Spot Fleet requests are deleted 48 hours after they are canceled and their instances are terminated.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

Required: No

**SpotFleetRequestId.N**

The IDs of the Spot Fleet requests.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**spotFleetRequestConfigSet**

Information about the configuration of your Spot Fleet.

Type: Array of SpotFleetRequestConfig objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all of your Spot Fleet requests.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotFleetRequests
&AUTHPARAMS
```

## Sample Response

```
<DescribeSpotFleetRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>4d68a6cc-8f2e-4be1-b425-example</requestId>
    <spotFleetRequestConfigSet>
        <item>
            <spotFleetRequestId>sfr-12345678-cb31-425e-8c23-example2710</
spotFleetRequestId>
            <spotFleetRequestState>cancelled</spotFleetRequestState>
            <spotFleetRequestConfig>
                <spotPrice>0.0153</spotPrice>
                <targetCapacity>20</targetCapacity>
                <iamFleetRole>arn:aws:iam::123456789011:role/spot-fleet-role</
iamFleetRole>
                <launchSpecifications>
                    <item>
                        <subnetId>subnet-1a2b3c4d</subnetId>
                        <ebsOptimized>false</ebsOptimized>
                        <imageId>ami-1ecae776</imageId>
                        <instanceType>m4.xlarge</instanceType>
                    </item>
                    <item>
                        <subnetId>subnet-1a2b3c4d</subnetId>
                        <ebsOptimized>false</ebsOptimized>
                        <imageId>ami-1ecae776</imageId>
                        <instanceType>m3.medium</instanceType>
                    </item>
                </launchSpecifications>
            </spotFleetRequestConfig>
        </item>
        <item>
            <spotFleetRequestId>sfr-abcdefgh-e71f-450d-880d-examplec127</
spotFleetRequestId>
            <spotFleetRequestState>active</spotFleetRequestState>
            <spotFleetRequestConfig>
                <spotPrice>0.0153</spotPrice>
                <targetCapacity>5</targetCapacity>
                <iamFleetRole>arn:aws:iam::123456789011:role/spot-fleet-role</
iamFleetRole>
                <launchSpecifications>
                    <item>
                        <subnetId>subnet-abc123ab</subnetId>
                        <ebsOptimized>false</ebsOptimized>
                        <imageId>ami-1ecae776</imageId>
```

```
                        <instanceType>m4.large</instanceType>
                    </item>
                    <item>
                        <subnetId>subnet-abc123ab</subnetId>
                        <ebsOptimized>false</ebsOptimized>
                        <imageId>ami-1ecae776</imageId>
                        <instanceType>m3.medium</instanceType>
                    </item>
                </launchSpecifications>
            </spotFleetRequestConfig>
        </item>
    </spotFleetRequestConfigSet>
</DescribeSpotFleetRequestsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSpotInstanceRequests

Describes the specified Spot Instance requests.

You can use `DescribeSpotInstanceRequests` to find a running Spot Instance by examining the response. If the status of the Spot Instance is `fulfilled`, the instance ID appears in the response and contains the identifier of the instance. Alternatively, you can use DescribeInstances with a filter to look for instances where the instance lifecycle is `spot`.

We recommend that you set `MaxResults` to a value between 5 and 1000 to limit the number of items returned. This paginates the output, which makes the list more manageable and returns the items faster. If the list of items exceeds your `MaxResults` value, then that number of items is returned along with a `NextToken` value that can be passed to a subsequent `DescribeSpotInstanceRequests` request to retrieve the remaining items.

Spot Instance requests are deleted four hours after they are canceled and their instances are terminated.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `availability-zone-group` - The Availability Zone group.
- `create-time` - The time stamp when the Spot Instance request was created.
- `fault-code` - The fault code related to the request.

- `fault-message` - The fault message related to the request.
- `instance-id` - The ID of the instance that fulfilled the request.
- `launch-group` - The Spot Instance launch group.
- `launch.block-device-mapping.delete-on-termination` - Indicates whether the EBS volume is deleted on instance termination.
- `launch.block-device-mapping.device-name` - The device name for the volume in the block device mapping (for example, `/dev/sdh` or `xvdh`).
- `launch.block-device-mapping.snapshot-id` - The ID of the snapshot for the EBS volume.
- `launch.block-device-mapping.volume-size` - The size of the EBS volume, in GiB.
- `launch.block-device-mapping.volume-type` - The type of EBS volume: `gp2` or `gp3` for General Purpose SSD, `io1` or `io2` for Provisioned IOPS SSD, `st1` for Throughput Optimized HDD, `sc1` for Cold HDD, or `standard` for Magnetic.
- `launch.group-id` - The ID of the security group for the instance.
- `launch.group-name` - The name of the security group for the instance.
- `launch.image-id` - The ID of the AMI.
- `launch.instance-type` - The type of instance (for example, `m3.medium`).
- `launch.kernel-id` - The kernel ID.
- `launch.key-name` - The name of the key pair the instance launched with.
- `launch.monitoring-enabled` - Whether detailed monitoring is enabled for the Spot Instance.
- `launch.ramdisk-id` - The RAM disk ID.
- `launched-availability-zone` - The Availability Zone in which the request is launched.
- `launched-availability-zone-id` - The ID of the Availability Zone in which the request is launched.
- `network-interface.addresses.primary` - Indicates whether the IP address is the primary private IP address.
- `network-interface.delete-on-termination` - Indicates whether the network interface is deleted when the instance is terminated.
- `network-interface.description` - A description of the network interface.
- `network-interface.device-index` - The index of the device for the network interface attachment on the instance.

- `network-interface.group-id` - The ID of the security group associated with the network interface.
- `network-interface.network-interface-id` - The ID of the network interface.
- `network-interface.private-ip-address` - The primary private IP address of the network interface.
- `network-interface.subnet-id` - The ID of the subnet for the instance.
- `product-description` - The product description associated with the instance (`Linux/UNIX` | `Windows`).
- `spot-instance-request-id` - The Spot Instance request ID.
- `spot-price` - The maximum hourly price for any Spot Instance launched to fulfill the request.
- `state` - The state of the Spot Instance request (`open` | `active` | `closed` | `cancelled` | `failed`). Spot request status information can help you track your Amazon EC2 Spot Instance requests. For more information, see Spot request status in the *Amazon EC2 User Guide*.
- `status-code` - The short code describing the most recent evaluation of your Spot Instance request.
- `status-message` - The message explaining the status of the Spot Instance request.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `type` - The type of Spot Instance request (`one-time` | `persistent`).
- `valid-from` - The start date of the request.
- `valid-until` - The end date of the request.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**SpotInstanceRequestId.N**

The IDs of the Spot Instance requests.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**spotInstanceRequestSet**

The Spot Instance requests.

Type: Array of SpotInstanceRequest objects

# Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example for DescribeSpotInstanceRequests

This example returns information about current Spot Instance requests. In the response, if the status of the Spot Instance is `fulfilled`, the instance ID appears in the response and contains the identifier of the instance.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&AUTHPARAMS
```

### Sample Response

```
<DescribeSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotInstanceRequestSet>
    <item>
      <spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
      <spotPrice>0.09</spotPrice>
      <type>one-time</type>
      <state>active</state>
      <status>
        <code>fulfilled</code>
        <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
        <message>Your Spot request is fulfilled.</message>
      </status>
      <launchSpecification>
        <imageId>ami-1a2b3c4d</imageId>
        <keyName>my-key-pair</keyName>
        <groupSet>
          <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>websrv</groupName>
          </item>
        </groupSet>
        <instanceType>m3.medium</instanceType>
```

```
        <monitoring>
          <enabled>false</enabled>
        </monitoring>
        <ebsOptimized>false</ebsOptimized>
      </launchSpecification>
      <instanceId>i-1234567890abcdef0</instanceId>
      <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
      <productDescription>Linux/UNIX</productDescription>
      <launchedAvailabilityZone>us-west-2a</launchedAvailabilityZone>
    </item>
  <spotInstanceRequestSet/>
<DescribeSpotInstanceRequestsResponse>
```

## Example for DescribeSpotInstanceRequests

This example describes all persistent Spot Instance requests that have resulted in the launch of at least one instance, that has been fulfilled in the us-west-2a Availability Zone, and that also has monitoring enabled.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&Filter.1.Name=type
&Filter.1.Value.1=persistent
&Filter.2.Name=instance-type
&Filter.2.Value.1=m3.medium
&Filter.3.Name=monitoring-enabled
&Filter.3.Value.1=true
&Filter.4.Name=launched-availability-zone
&Filter.4.Value.1=us-west-2a
&AUTHPARAMS
```

## Example for DescribeInstances

Alternatively, you can use DescribeInstances and use a filter to look for instances where the instance lifecycle contains `spot`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-lifecycle
&Filter.1.Value.1=spot
```

```
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSpotPriceHistory

Describes the Spot price history. For more information, see Spot Instance pricing history in the *Amazon EC2 User Guide*.

When you specify a start and end time, the operation returns the prices of the instance types within that time range. It also returns the last price change before the start time, which is the effective price as of the start time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZone**

Filters the results by the specified Availability Zone.

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both

Type: String

Required: No

**AvailabilityZoneId**

Filters the results by the specified ID of the Availability Zone.

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndTime**

The date and time, up to the current date, from which to stop retrieving the price history data, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

Required: No

**Filter.N**

The filters.

- `availability-zone` - The Availability Zone for which prices should be returned.
- `availability-zone-id` - The ID of the Availability Zone for which prices should be returned.
- `instance-type` - The type of instance (for example, `m3.medium`).
- `product-description` - The product description for the Spot price (`Linux/UNIX` | `Red Hat Enterprise Linux` | `SUSE Linux` | `Windows` | `Linux/UNIX (Amazon VPC)` | `Red Hat Enterprise Linux (Amazon VPC)` | `SUSE Linux (Amazon VPC)` | `Windows (Amazon VPC)`).
- `spot-price` - The Spot price. The value must match exactly (or use wildcards; greater than or less than comparison is not supported).
- `timestamp` - The time stamp of the Spot price history, in UTC format (for example, *ddd MMM dd HH*:*mm*:*ss* UTC *YYYY*). You can use wildcards (* and ?). Greater than or less than comparison is not supported.

Type: Array of Filter objects

Required: No

**InstanceType.N**

Filters the results by the specified instance types.

Type: Array of strings

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal |`

c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium |

m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge

| r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge |

r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge |

r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge

```
| i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge |
u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge
| f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge
| c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge |
i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium |
c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge
| c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge |
c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge
| i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge
| i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge |
m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge
| m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge |
m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium |
r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge
| r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge
| r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large |
c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge
| c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl
| c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large |
g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge
| r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge |
r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge
| r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-
flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge |
r8i-flex.12xlarge | r8i-flex.16xlarge
```

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**ProductDescription.N**

Filters the results by the specified basic product descriptions.

Type: Array of strings

Required: No

**StartTime**

The date and time, up to the past 90 days, from which to start retrieving the price history data, in UTC format (for example, *YYYY*-*MM*-*DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is an empty string ("") or `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**spotPriceHistorySet**

The historical Spot prices.

Type: Array of SpotPrice objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example gets the Spot price history for the first day in November 2016 for the specified Availability Zone.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&StartTime=2016-11-01T00:00:00.000Z
&EndTime=2016-11-01T23:59:59.000Z
&AvailabilityZone=us-west-2a
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSpotPriceHistoryResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <spotPriceHistorySet>
    <item>
      <instanceType>m3.medium</instanceType>
      <productDescription>Linux/UNIX</productDescription>
      <spotPrice>0.287</spotPrice>
      <timestamp>2016-11-01T20:56:05.000Z</timestamp>
      <availabilityZone>us-west-2a</availabilityZone>
    </item>
    <item>
      <instanceType>m3.medium</instanceType>
      <productDescription>Windows</productDescription>
      <spotPrice>0.033</spotPrice>
      <timestamp>2016-11-01T22:33:47.000Z</timestamp>
      <availabilityZone>us-west-2a</availabilityZone>
    </item>
  </spotPriceHistorySet>
```

```
  <nextToken/>
</DescribeSpotPriceHistoryResponse>
```

### Example with Filters

This example uses filters to get the same results as the previous example.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&Filter.1.Name=timestamp
&Filter.1.Value.1='Tue Nov 01 01* UTC 2016'
&Filter.2.Name=availability-zone
&Filter.2.Value.1=us-west-2a
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeStaleSecurityGroups

Describes the stale security group rules for security groups referenced across a VPC peering connection, transit gateway connection, or with a security group VPC association. Rules are stale when they reference a deleted security group. Rules can also be stale if they reference a security group in a peer VPC for which the VPC peering connection has been deleted, across a transit gateway where the transit gateway has been deleted (or the transit gateway security group referencing feature has been disabled), or if a security group VPC association has been disassociated.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**staleSecurityGroupSet**

Information about the stale security groups.

Type: Array of StaleSecurityGroup objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes stale security group rules for vpc-11223344. The response shows that sg-5fa68d3a in your account has a stale ingress SSH rule that references sg-279ab042 in the peer

VPC, and sg-fe6fba9a in your account has a stale egress SSH rule that references sg-ef6fba8b in the peer VPC.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeStaleSecurityGroups
&VpcId=vpc-11223344
&AUTHPARAMS
```

### Sample Response

```
<DescribeStaleSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>ece1f9a0-b201-4eec-b74b-example</requestId>
        <staleSecurityGroupSet>
        <item>
            <staleIpPermissionsEgress>
                <item>
                    <fromPort>22</fromPort>
                    <toPort>22</toPort>
                    <groups>
                        <item>
                            <vpcId>vpc-7a20e51f</vpcId>
                            <groupId>sg-ef6fba8b</groupId>
                            <vpcPeeringConnectionId>pcx-b04deed9</
vpcPeeringConnectionId>
                            <peeringStatus>active</peeringStatus>
                            <description>Access to pcx-b04deed9</description>
                        </item>
                    </groups>
                    <ipProtocol>tcp</ipProtocol>
                </item>
            </staleIpPermissionsEgress>
            <groupName>Sg-1</groupName>
            <vpcId>vpc-11223344</vpcId>
            <groupId>sg-fe6fba9a</groupId>
            <description>Sg-1 for peering</description>
            <staleIpPermissions/>
        </item>
        <item>
            <staleIpPermissionsEgress/>
            <groupName>Sg-2</groupName>
            <vpcId>vpc-11223344</vpcId>
            <groupId>sg-5fa68d3a</groupId>
```

```
            <description>Sg-2 for peering</description>
            <staleIpPermissions>
                <item>
                    <fromPort>22</fromPort>
                    <toPort>22</toPort>
                    <groups>
                        <item>
                            <vpcId>vpc-7a20e51f</vpcId>
                            <groupId>sg-279ab042</groupId>
                            <vpcPeeringConnectionId>pcx-b04deed9</
vpcPeeringConnectionId>
                            <peeringStatus>active</peeringStatus>
                            <description>Access from pcx-b04deed9</description>
                        </item>
                    </groups>
                    <ipProtocol>tcp</ipProtocol>
                </item>
            </staleIpPermissions>
        </item>
    </staleSecurityGroupSet>
</DescribeStaleSecurityGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeStoreImageTasks

Describes the progress of the AMI store tasks. You can describe the store tasks for specified AMIs. If you don't specify the AMIs, you get a paginated list of store tasks from the last 31 days.

For each AMI task, the response indicates if the task is `InProgress`, `Completed`, or `Failed`. For tasks `InProgress`, the response shows the estimated progress as a percentage.

Tasks are listed in reverse chronological order. Currently, only tasks from the past 31 days can be viewed.

To use this API, you must have the required permissions. For more information, see Permissions for storing and restoring AMIs using S3 in the *Amazon EC2 User Guide*.

For more information, see Store and restore an AMI using S3 in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `task-state` - Returns tasks in a certain state (`InProgress` | `Completed` | `Failed`)
- `bucket` - Returns task information for tasks that targeted a specific bucket. For the filter value, specify the bucket name.

> **Note**
>
> When you specify the `ImageIds` parameter, any filters that you specify are ignored. To use the filters, you must remove the `ImageIds` parameter.

Type: Array of Filter objects

Required: No

**ImageId.N**

The AMI IDs for which to show progress. Up to 20 AMI IDs can be included in a request.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

You cannot specify this parameter and the `ImageIds` parameter in the same call.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 200.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**storeImageTaskResultSet**

The information about the AMI store tasks.

Type: Array of StoreImageTaskResult objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeSubnets

Describes your subnets. The default is to describe all your subnets. Alternatively, you can specify specific subnet IDs or filter the results to include only the subnets that match specific criteria.

For more information, see Subnets in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `availability-zone` - The Availability Zone for the subnet. You can also use `availabilityZone` as the filter name.
- `availability-zone-id` - The ID of the Availability Zone for the subnet. You can also use `availabilityZoneId` as the filter name.
- `available-ip-address-count` - The number of IPv4 addresses in the subnet that are available.
- `cidr-block` - The IPv4 CIDR block of the subnet. The CIDR block you specify must exactly match the subnet's CIDR block for information to be returned for the subnet. You can also use `cidr` or `cidrBlock` as the filter names.
- `customer-owned-ipv4-pool` - The customer-owned IPv4 address pool associated with the subnet.
- `default-for-az` - Indicates whether this is the default subnet for the Availability Zone (`true` | `false`). You can also use `defaultForAz` as the filter name.

- `enable-dns64` - Indicates whether DNS queries made to the Amazon-provided DNS Resolver in this subnet should return synthetic IPv6 addresses for IPv4-only destinations.
- `enable-lni-at-device-index` - Indicates the device position for local network interfaces in this subnet. For example, 1 indicates local network interfaces in this subnet are the secondary network interface (eth1).
- `ipv6-cidr-block-association.ipv6-cidr-block` - An IPv6 CIDR block associated with the subnet.
- `ipv6-cidr-block-association.association-id` - An association ID for an IPv6 CIDR block associated with the subnet.
- `ipv6-cidr-block-association.state` - The state of an IPv6 CIDR block associated with the subnet.
- `ipv6-native` - Indicates whether this is an IPv6 only subnet (`true` | `false`).
- `map-customer-owned-ip-on-launch` - Indicates whether a network interface created in this subnet (including a network interface created by RunInstances) receives a customer-owned IPv4 address.
- `map-public-ip-on-launch` - Indicates whether instances launched in this subnet receive a public IPv4 address.
- `outpost-arn` - The Amazon Resource Name (ARN) of the Outpost.
- `owner-id` - The ID of the AWS account that owns the subnet.
- `private-dns-name-options-on-launch.hostname-type` - The type of hostname to assign to instances in the subnet at launch. For IPv4-only and dual-stack (IPv4 and IPv6) subnets, an instance DNS name can be based on the instance IPv4 address (ip-name) or the instance ID (resource-name). For IPv6 only subnets, an instance DNS name must be based on the instance ID (resource-name).
- `private-dns-name-options-on-launch.enable-resource-name-dns-a-record` - Indicates whether to respond to DNS queries for instance hostnames with DNS A records.
- `private-dns-name-options-on-launch.enable-resource-name-dns-aaaa-record` - Indicates whether to respond to DNS queries for instance hostnames with DNS AAAA records.
- `state` - The state of the subnet (`pending` | `available`).
- `subnet-arn` - The Amazon Resource Name (ARN) of the subnet.
- `subnet-id` - The ID of the subnet.

- `tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC for the subnet.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**SubnetId.N**

The IDs of the subnets.

Default: Describes all your subnets.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**subnetSet**

Information about the subnets.

Type: Array of Subnet objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes the subnets.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSubnets
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSubnetsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>1927e20c-0ed0-4a02-a6d7-d955fbd2d13c</requestId>
    <subnetSet>
        <item>
```

```
            <subnetId>subnet-0bb1c79de301436ee</subnetId>
            <subnetArn>arn:aws:ec2:us-east-2:111122223333:subnet/
subnet-0bb1c79de3EXAMPLE</subnetArn>
            <state>available</state>
            <ownerId>111122223333</ownerId>
            <vpcId>vpc-0ee975135dEXAMPLE</vpcId>
            <cidrBlock>10.0.2.0/24</cidrBlock>
            <ipv6CidrBlockAssociationSet/>
            <availableIpAddressCount>251</availableIpAddressCount>
            <availabilityZone>us-east-2c</availabilityZone>
            <availabilityZoneId>use2-az3</availabilityZoneId>
            <defaultForAz>false</defaultForAz>
            <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
            <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation>
        </item>
        <item>
            <subnetId>subnet-02bf4c428bf44ebce</subnetId>
            <subnetArn>arn:aws:ec2:us-east-2:111122223333:subnet/
subnet-02bf4c428bEXAMPLE</subnetArn>
            <state>available</state>
            <ownerId>111122223333</ownerId>
            <vpcId>vpc-07e8ffd50fEXAMPLE</vpcId>
            <cidrBlock>10.0.0.0/24</cidrBlock>
            <ipv6CidrBlockAssociationSet>
                <item>
                    <ipv6CidrBlock>2600:1f16:115:200::/64</ipv6CidrBlock>
                    <associationId>subnet-cidr-assoc-002afb9f3cEXAMPLE</associationId>
                    <ipv6CidrBlockState>
                        <state>associated</state>
                    </ipv6CidrBlockState>
                </item>
            </ipv6CidrBlockAssociationSet>
            <availableIpAddressCount>251</availableIpAddressCount>
            <availabilityZone>us-east-2b</availabilityZone>
            <availabilityZoneId>use2-az2</availabilityZoneId>
            <defaultForAz>false</defaultForAz>
            <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
            <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation>
        </item>
    </subnetSet>
</DescribeSubnetsResponse>
```

## Example 2

This example uses filters to describe any subnet you own that is in the VPC with the ID `vpc-0056ae9ffdEXAMPLE` or `vpc-0096ae9ffdEXAMPLE`, and whose state is `available`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSubnets
&Filter.1.Name=vpc-id
&Filter.1.Value.1=vpc-0056ae9ffdEXAMPLE
&Filter.1.Value.2=vpc-0096ae9ffdEXAMPLE
&Filter.2.Name=state
&Filter.2.Value.1=available
&AUTHPARAMS
```

### Sample Response

```
<DescribeSubnetsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>43e9cb52-0e10-40fe-b457-988c8fbfea26</requestId>
    <subnetSet>
        <item>
            <subnetId>subnet-0f8c6c2f37EXAMPLE</subnetId>
            <subnetArn>arn:aws:ec2:us-west-2:123456789012:subnet/
subnet-0f8c6c2f37903e9dc</subnetArn>
            <state>available</state>
            <ownerId>123456789012</ownerId>
            <vpcId>vpc-0056ae9ffdEXAMPLE</vpcId>
            <cidrBlock>172.168.0.0/16</cidrBlock>
            <ipv6CidrBlockAssociationSet/>
            <availableIpAddressCount>65531</availableIpAddressCount>
            <availabilityZone>us-west-2b</availabilityZone>
            <availabilityZoneId>usw2-az2</availabilityZoneId>
            <defaultForAz>false</defaultForAz>
            <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
            <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation>
        </item>
    </subnetSet>
</DescribeSubnetsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTags

Describes the specified tags for your EC2 resources.

For more information about tags, see Tag your Amazon EC2 resources in the *Amazon Elastic Compute Cloud User Guide*.

**Important**

We strongly recommend using only paginated requests. Unpaginated requests are susceptible to throttling and timeouts.

**Note**

The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `key` - The tag key.
- `resource-id` - The ID of the resource.
- `resource-type` - The resource type. For a list of possible values, see TagSpecification.

- `tag`:<key> - The key/value combination of the tag. For example, specify "tag:Owner" for the filter name and "TeamA" for the filter value to find resources with the tag "Owner=TeamA".
- `value` - The tag value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. This value can be between 5 and 1000. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**tagSet**

The tags.

Type: Array of TagDescription objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all the tags in your account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&AUTHPARAMS
```

#### Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/"/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <tagSet>
      <item>
         <resourceId>ami-1a2b3c4d</resourceId>
         <resourceType>image</resourceType>
         <key>webserver</key>
         <value/>
      </item>
       <item>
         <resourceId>ami-1a2b3c4d</resourceId>
         <resourceType>image</resourceType>
         <key>stack</key>
         <value>Production</value>
      </item>
      <item>
         <resourceId>i-1234567890abcdef0</resourceId>
         <resourceType>instance</resourceType>
         <key>webserver</key>
```

```
         <value/>
      </item>
       <item>
         <resourceId>i-1234567890abcdef0</resourceId>
         <resourceType>instance</resourceType>
         <key>stack</key>
         <value>Production</value>
      </item>
      <item>
         <resourceId>i-0598c7d356eba48d7</resourceId>
         <resourceType>instance</resourceType>
         <key>database_server</key>
         <value/>
      </item>
       <item>
         <resourceId>i-0598c7d356eba48d7</resourceId>
         <resourceType>instance</resourceType>
         <key>stack</key>
         <value>Test</value>
      </item>
    </tagSet>
</DescribeTagsResponse>
```

## Example

This example describes only the tags for the AMI with ID ami-1a2b3c4d.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-id
&Filter.1.Value.1=ami-1a2b3c4d
&AUTHPARAMS
```

### Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/"/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <tagSet>
      <item>
         <resourceId>ami-1a2b3c4d</resourceId>
         <resourceType>image</resourceType>
         <key>webserver</key>
```

```
         <value/>
      </item>
      <item>
         <resourceId>ami-1a2b3c4d</resourceId>
         <resourceType>image</resourceType>
         <key>stack</key>
         <value>Production</value>
      </item>
    </tagSet>
</DescribeTagsResponse>
```

## Example

This example describes the tags for all your instances.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&AUTHPARAMS
```

### Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/"/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <tagSet>
       <item>
         <resourceId>i-0598c7d356eba48d7</resourceId>
         <resourceType>instance</resourceType>
         <key>webserver</key>
         <value/>
      </item>
       <item>
         <resourceId>i-0598c7d356eba48d7</resourceId>
         <resourceType>instance</resourceType>
         <key>stack</key>
         <value>Production</value>
      </item>
      <item>
         <resourceId>i-1234567890abcdef0</resourceId>
         <resourceType>instance</resourceType>
         <key>database_server</key>
```

```
          <value/>
       </item>
        <item>
          <resourceId>i-1234567890abcdef0</resourceId>
          <resourceType>instance</resourceType>
          <key>stack</key>
          <value>Test</value>
       </item>
     </tagSet>
</DescribeTagsResponse>
```

## Example

This example describes the tags for all your instances tagged with the key *webserver*. You can use wildcards with filters, so you could specify the value as `?ebserver` to find tags with the key *webserver* or *Webserver*.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=key
&Filter.1.Value.1=webserver
&AUTHPARAMS
```

### Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/"/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <tagSet>
       <item>
         <resourceId>i-1234567890abcdef0</resourceId>
         <resourceType>instance</resourceType>
         <key>webserver</key>
         <value/>
       </item>
     </tagSet>
</DescribeTagsResponse>
```

## Example

This example describes the tags for all your instances tagged with either stack=Test or stack=Production.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
&Filter.2.Value.1=stack
&Filter.3.Name=value
&Filter.3.Value.1=Test
&Filter.3.Value.2=Production
&AUTHPARAMS
```

### Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/"/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <tagSet>
       <item>
         <resourceId>i-1234567890abcdef0</resourceId>
         <resourceType>instance</resourceType>
         <key>stack</key>
         <value>Production</value>
      </item>
       <item>
         <resourceId>i-0598c7d356eba48d7</resourceId>
         <resourceType>instance</resourceType>
         <key>stack</key>
         <value>Test</value>
      </item>
    </tagSet>
</DescribeTagsResponse>
```

## Example

This example describes the tags for all your instances tagged with Purpose=[empty string].

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
```

```
&Filter.2.Value.1=Purpose
&Filter.3.Name=value
&Filter.3.Value.1=
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTrafficMirrorFilterRules

Describe traffic mirror filters that determine the traffic that is mirrored.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

Traffic mirror filters.

- `traffic-mirror-filter-rule-id`: The ID of the Traffic Mirror rule.
- `traffic-mirror-filter-id`: The ID of the filter that this rule is associated with.
- `rule-number`: The number of the Traffic Mirror rule.
- `rule-action`: The action taken on the filtered traffic. Possible actions are `accept` and `reject`.
- `traffic-direction`: The traffic direction. Possible directions are `ingress` and `egress`.
- `protocol`: The protocol, for example UDP, assigned to the Traffic Mirror rule.
- `source-cidr-block`: The source CIDR block assigned to the Traffic Mirror rule.
- `destination-cidr-block`: The destination CIDR block assigned to the Traffic Mirror rule.
- `description`: The description of the Traffic Mirror rule.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TrafficMirrorFilterId**

Traffic filter ID.

Type: String

Required: No

**TrafficMirrorFilterRuleId.N**

Traffic filter rule IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. The value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorFilterRuleSet**

Traffic mirror rules.

Type: Array of TrafficMirrorFilterRule objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTrafficMirrorFilters

Describes one or more Traffic Mirror filters.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `description`: The Traffic Mirror filter description.
- `traffic-mirror-filter-id`: The ID of the Traffic Mirror filter.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TrafficMirrorFilterId.N**

The ID of the Traffic Mirror filter.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. The value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorFilterSet**

Information about one or more Traffic Mirror filters.

Type: Array of TrafficMirrorFilter objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTrafficMirrorSessions

Describes one or more Traffic Mirror sessions. By default, all Traffic Mirror sessions are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `description`: The Traffic Mirror session description.
- `network-interface-id`: The ID of the Traffic Mirror session network interface.
- `owner-id`: The ID of the account that owns the Traffic Mirror session.
- `packet-length`: The assigned number of packets to mirror.
- `session-number`: The assigned session number.
- `traffic-mirror-filter-id`: The ID of the Traffic Mirror filter.
- `traffic-mirror-session-id`: The ID of the Traffic Mirror session.
- `traffic-mirror-target-id`: The ID of the Traffic Mirror target.
- `virtual-network-id`: The virtual network ID of the Traffic Mirror session.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TrafficMirrorSessionId.N**

The ID of the Traffic Mirror session.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. The value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorSessionSet**

Describes one or more Traffic Mirror sessions. By default, all Traffic Mirror sessions are described. Alternatively, you can filter the results.

Type: Array of TrafficMirrorSession objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTrafficMirrorTargets

Information about one or more Traffic Mirror targets.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `description`: The Traffic Mirror target description.
- `network-interface-id`: The ID of the Traffic Mirror session network interface.
- `network-load-balancer-arn`: The Amazon Resource Name (ARN) of the Network Load Balancer that is associated with the session.
- `owner-id`: The ID of the account that owns the Traffic Mirror session.
- `traffic-mirror-target-id`: The ID of the Traffic Mirror target.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TrafficMirrorTargetId.N**

The ID of the Traffic Mirror targets.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. The value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorTargetSet**

Information about one or more Traffic Mirror targets.

Type: Array of TrafficMirrorTarget objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTransitGatewayAttachments

Describes one or more attachments between resources and transit gateways. By default, all attachments are described. Alternatively, you can filter the results by attachment ID, attachment state, resource ID, or resource owner.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `association.state` - The state of the association (`associating` | `associated` | `disassociating`).
- `association.transit-gateway-route-table-id` - The ID of the route table for the transit gateway.
- `resource-id` - The ID of the resource.
- `resource-owner-id` - The ID of the AWS account that owns the resource.
- `resource-type` - The resource type. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `peering` | `connect`.
- `state` - The state of the attachment. Valid values are `available` | `deleted` | `deleting` | `failed` | `failing` | `initiatingRequest` | `modifying` | `pendingAcceptance` | `pending` | `rollingBack` | `rejected` | `rejecting`.
- `transit-gateway-attachment-id` - The ID of the attachment.
- `transit-gateway-id` - The ID of the transit gateway.
- `transit-gateway-owner-id` - The ID of the AWS account that owns the transit gateway.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayAttachmentIds.N**

The IDs of the attachments.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayAttachments**

Information about the attachments.

Type: Array of TransitGatewayAttachment objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTransitGatewayConnectPeers

Describes one or more Connect peers.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `state` - The state of the Connect peer (`pending` | `available` | `deleting` | `deleted`).
- `transit-gateway-attachment-id` - The ID of the attachment.
- `transit-gateway-connect-peer-id` - The ID of the Connect peer.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayConnectPeerIds.N**

The IDs of the Connect peers.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayConnectPeerSet**

Information about the Connect peers.

Type: Array of TransitGatewayConnectPeer objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTransitGatewayConnects

Describes one or more Connect attachments.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `options.protocol` - The tunnel protocol (`gre`).
- `state` - The state of the attachment (`initiating` | `initiatingRequest` | `pendingAcceptance` | `rollingBack` | `pending` | `available` | `modifying` | `deleting` | `deleted` | `failed` | `rejected` | `rejecting` | `failing`).
- `transit-gateway-attachment-id` - The ID of the Connect attachment.
- `transit-gateway-id` - The ID of the transit gateway.
- `transport-transit-gateway-attachment-id` - The ID of the transit gateway attachment from which the Connect attachment was created.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayAttachmentIds.N**

The IDs of the attachments.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayConnectSet**

Information about the Connect attachments.

Type: Array of TransitGatewayConnect objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTransitGatewayMeteringPolicies

Describes one or more transit gateway metering policies.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to apply when describing transit gateway metering policies.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayMeteringPolicyIds.N**

The IDs of the transit gateway metering policies to describe.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayMeteringPolicies**

Information about the transit gateway metering policies.

Type: Array of TransitGatewayMeteringPolicy objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTransitGatewayMulticastDomains

Describes one or more transit gateway multicast domains.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `state` - The state of the transit gateway multicast domain. Valid values are `pending` | `available` | `deleting` | `deleted`.
- `transit-gateway-id` - The ID of the transit gateway.
- `transit-gateway-multicast-domain-id` - The ID of the transit gateway multicast domain.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayMulticastDomainIds.N**

The ID of the transit gateway multicast domain.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayMulticastDomains**

Information about the transit gateway multicast domains.

Type: Array of TransitGatewayMulticastDomain objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example describes your multicast domains.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTransitGatewayMulticastDomains
&AUTHPARAMS
```

### Sample Response

```
<DescribeTransitGatewayMulticastDomainsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>e19ec53b-f3f5-4eae-97c3-a9605EXAMPLE</requestId>
    <transitGatewayMulticastDomains>
        <item>
            <creationTime>2019-11-19T22:05:50.000Z</creationTime>
            <state>available</state>
            <tagSet/>
            <transitGatewayId>tgw-06150e5ae0EXAMPLE</transitGatewayId>
            <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
        </item>
    </transitGatewayMulticastDomains>
</DescribeTransitGatewayMulticastDomainsResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTransitGatewayPeeringAttachments

Describes your transit gateway peering attachments.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `transit-gateway-attachment-id` - The ID of the transit gateway attachment.
- `local-owner-id` - The ID of your AWS account.
- `remote-owner-id` - The ID of the AWS account in the remote Region that owns the transit gateway.
- `state` - The state of the peering attachment. Valid values are `available` | `deleted` | `deleting` | `failed` | `failing` | `initiatingRequest` | `modifying` | `pendingAcceptance` | `pending` | `rollingBack` | `rejected` | `rejecting`).
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources that have a tag with a specific key, regardless of the tag value.
- `transit-gateway-id` - The ID of the transit gateway.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayAttachmentIds.N**

One or more IDs of the transit gateway peering attachments.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayPeeringAttachments**

The transit gateway peering attachments.

Type: Array of TransitGatewayPeeringAttachment objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes your peering attachment.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTransitGatewayPeeringAttachments
&AUTHPARAMS
```

#### Sample Response

```
<DescribeTransitGatewayPeeringAttachmentsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>f2ad2616-b1bc-42ab-8533-bd50example</requestId>
    <transitGatewayPeeringAttachments>
        <item>
            <accepterTgwInfo>
                <ownerId>111111111111</ownerId>
                <region>us-west-2</region>
                <transitGatewayId>tgw-123456789012abc12</transitGatewayId>
            </accepterTgwInfo>
            <creationTime>2019-11-11T11:25:31.000Z</creationTime>
            <requesterTgwInfo>
                <ownerId>123456789012</ownerId>
                <region>us-east-1</region>
                <transitGatewayId>tgw-abc123abc123abc12</transitGatewayId>
            </requesterTgwInfo>
            <state>pendingAcceptance</state>
            <tagSet/>
```

```
            <transitGatewayAttachmentId>tgw-attach-1122334455aabbcc1</
transitGatewayAttachmentId>
        </item>
    </transitGatewayPeeringAttachments>
</DescribeTransitGatewayPeeringAttachmentsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTransitGatewayPolicyTables

Describes one or more transit gateway route policy tables.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters associated with the transit gateway policy table.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayPolicyTableIds.N**

The IDs of the transit gateway policy tables.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token for the next page of results.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayPolicyTables**

Describes the transit gateway policy tables.

Type: Array of TransitGatewayPolicyTable objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTransitGatewayRouteTableAnnouncements

Describes one or more transit gateway route table advertisements.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters associated with the transit gateway policy table.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayRouteTableAnnouncementIds.N**

The IDs of the transit gateway route tables that are being advertised.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token for the next page of results.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayRouteTableAnnouncements**

Describes the transit gateway route table announcement.

Type: Array of TransitGatewayRouteTableAnnouncement objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTransitGatewayRouteTables

Describes one or more transit gateway route tables. By default, all transit gateway route tables are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `default-association-route-table` - Indicates whether this is the default association route table for the transit gateway (`true` | `false`).
- `default-propagation-route-table` - Indicates whether this is the default propagation route table for the transit gateway (`true` | `false`).
- `state` - The state of the route table (`available` | `deleting` | `deleted` | `pending`).
- `transit-gateway-id` - The ID of the transit gateway.
- `transit-gateway-route-table-id` - The ID of the transit gateway route table.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayRouteTableIds.N**

The IDs of the transit gateway route tables.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayRouteTables**

Information about the transit gateway route tables.

Type: Array of TransitGatewayRouteTable objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTransitGateways

Describes one or more transit gateways. By default, all transit gateways are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `options.propagation-default-route-table-id` - The ID of the default propagation route table.
- `options.amazon-side-asn` - The private ASN for the Amazon side of a BGP session.
- `options.association-default-route-table-id` - The ID of the default association route table.
- `options.auto-accept-shared-attachments` - Indicates whether there is automatic acceptance of attachment requests (`enable` | `disable`).
- `options.default-route-table-association` - Indicates whether resource attachments are automatically associated with the default association route table (`enable` | `disable`).
- `options.default-route-table-propagation` - Indicates whether resource attachments automatically propagate routes to the default propagation route table (`enable` | `disable`).
- `options.dns-support` - Indicates whether DNS support is enabled (`enable` | `disable`).
- `options.vpn-ecmp-support` - Indicates whether Equal Cost Multipath Protocol support is enabled (`enable` | `disable`).
- `owner-id` - The ID of the AWS account that owns the transit gateway.

- `state` - The state of the transit gateway (`available` | `deleted` | `deleting` | `modifying` | `pending`).
- `transit-gateway-id` - The ID of the transit gateway.
- `tag-key` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayIds.N**

The IDs of the transit gateways.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewaySet**

Information about the transit gateways.

Type: Array of TransitGateway objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes your transit gateways.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTransitGateways
&AUTHPARAMS
```

#### Sample Response

```
<DescribeTransitGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>151283df-f7dc-4317-89b4-01c9888b1d45</requestId>
    <transitGatewaySet>
        <item>
            <creationTime>2019-05-08T13:21:33.000Z</creationTime>
            <description>example tgw</description>
```

```
            <options>
                <amazonSideAsn>64512</amazonSideAsn>
                <associationDefaultRouteTableId>tgw-rtb-002573ed1eEXAMPLE</
associationDefaultRouteTableId>
                <autoAcceptSharedAttachments>disable</autoAcceptSharedAttachments>
                <defaultRouteTableAssociation>enable</defaultRouteTableAssociation>
                <defaultRouteTablePropagation>enable</defaultRouteTablePropagation>
                <dnsSupport>enable</dnsSupport>
                <propagationDefaultRouteTableId>tgw-rtb-002573ed1eEXAMPLE</
propagationDefaultRouteTableId>
                <vpnEcmpSupport>enable</vpnEcmpSupport>
            </options>
            <ownerId>111122223333</ownerId>
            <state>available</state>
            <tagSet/>
            <transitGatewayArn>arn:aws:ec2:us-east-1:111122223333:transit-gateway/
tgw-02f776b1a7EXAMPLE</transitGatewayArn>
            <transitGatewayId>tgw-02f776b1a7EXAMPLE</transitGatewayId>
        </item>
    </transitGatewaySet>
</DescribeTransitGatewaysResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTransitGatewayVpcAttachments

Describes one or more VPC attachments. By default, all VPC attachments are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `state` - The state of the attachment. Valid values are `available` | `deleted` | `deleting` | `failed` | `failing` | `initiatingRequest` | `modifying` | `pendingAcceptance` | `pending` | `rollingBack` | `rejected` | `rejecting`.
- `transit-gateway-attachment-id` - The ID of the attachment.
- `transit-gateway-id` - The ID of the transit gateway.
- `vpc-id` - The ID of the VPC.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayAttachmentIds.N**

The IDs of the attachments.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayVpcAttachments**

Information about the VPC attachments.

Type: Array of TransitGatewayVpcAttachment objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes your transit gateway VPC attachments.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTransitGatewayVpcAttachment
&AUTHPARAMS
```

### Sample Response

```
<DescribeTransitGatewayVpcAttachmentsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>5eeb22d7-c1cf-4efd-9725-1e92e8f9a4e7</requestId>
    <transitGatewayVpcAttachments>
        <item>
            <creationTime>2019-07-17T16:04:27.000Z</creationTime>
            <options>
                <dnsSupport>enable</dnsSupport>
                <ipv6Support>disable</ipv6Support>
            </options>
            <state>available</state>
            <subnetIds>
                <item>subnet-0187aff814EXAMPLE</item>
            </subnetIds>
            <tagSet/>
            <transitGatewayAttachmentId>tgw-attach-0d2c54bdb3EXAMPLE</
transitGatewayAttachmentId>
            <transitGatewayId>tgw-02f776b1a7EXAMPLE</transitGatewayId>
            <vpcId>vpc-0065acced4EXAMPLE</vpcId>
            <vpcOwnerId>111122223333</vpcOwnerId>
        </item>
    </transitGatewayVpcAttachments>
</DescribeTransitGatewayVpcAttachmentsResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeTrunkInterfaceAssociations

Describes one or more network interface trunk associations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId.N**

The IDs of the associations.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `gre-key` - The ID of a trunk interface association.
- `interface-protocol` - The interface protocol. Valid values are `VLAN` and `GRE`.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**interfaceAssociationSet**

Information about the trunk associations.

Type: Array of TrunkInterfaceAssociation objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVerifiedAccessEndpoints

Describes the specified AWS Verified Access endpoints.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**VerifiedAccessEndpointId.N**

The ID of the Verified Access endpoint.

Type: Array of strings

Required: No

**VerifiedAccessGroupId**

The ID of the Verified Access group.

Type: String

Required: No

**VerifiedAccessInstanceId**

The ID of the Verified Access instance.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**verifiedAccessEndpointSet**

Details about the Verified Access endpoints.

Type: Array of VerifiedAccessEndpoint objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVerifiedAccessGroups

Describes the specified Verified Access groups.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**VerifiedAccessGroupId.N**

The ID of the Verified Access groups.

Type: Array of strings

Required: No

**VerifiedAccessInstanceId**

The ID of the Verified Access instance.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**verifiedAccessGroupSet**

Details about the Verified Access groups.

Type: Array of VerifiedAccessGroup objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVerifiedAccessInstanceLoggingConfigurations

Describes the specified AWS Verified Access instances.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 10.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**VerifiedAccessInstanceId.N**

The IDs of the Verified Access instances.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**loggingConfigurationSet**

The logging configuration for the Verified Access instances.

Type: Array of VerifiedAccessInstanceLoggingConfiguration objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVerifiedAccessInstances

Describes the specified AWS Verified Access instances.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 200.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**VerifiedAccessInstanceId.N**

The IDs of the Verified Access instances.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**verifiedAccessInstanceSet**

Details about the Verified Access instances.

Type: Array of VerifiedAccessInstance objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVerifiedAccessTrustProviders

Describes the specified AWS Verified Access trust providers.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. Filter names and values are case-sensitive.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 200.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**VerifiedAccessTrustProviderId.N**

The IDs of the Verified Access trust providers.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**verifiedAccessTrustProviderSet**

Details about the Verified Access trust providers.

Type: Array of VerifiedAccessTrustProvider objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVolumeAttribute

Describes the specified attribute of the specified volume. You can specify only one attribute at a time.

For more information about EBS volumes, see Amazon EBS volumes in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The attribute of the volume. This parameter is required.

Type: String

Valid Values: `autoEnableIO | productCodes`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VolumeId**

The ID of the volume.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**autoEnableIO**

The state of `autoEnableIO` attribute.

Type: AttributeBooleanValue object

**productCodes**

A list of product codes.

Type: Array of ProductCode objects

**requestId**

The ID of the request.

Type: String

**volumeId**

The ID of the volume.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the `autoEnableIO` attribute of the volume vol-1234567890abcdef0.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=autoEnableIO
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-1234567890abcdef0</volumeId>
  <autoEnableIO>
    <value>false</value>
  </autoEnableIO>
</DescribeVolumeAttributeResponse>
```

### Example

This example describes the `productCodes` attribute of the volume vol-1234567890abcdef0.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=productCodes
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeId>vol-1234567890abcdef0</volumeId>
  <productCodes>
      <item>
          <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
          <type>marketplace</type>
        </item>
  </productCodes>
</DescribeVolumeAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVolumes

Describes the specified EBS volumes or all of your EBS volumes.

If you are describing a long list of volumes, we recommend that you paginate the output to make the list more manageable. For more information, see Pagination.

For more information about EBS volumes, see Amazon EBS volumes in the *Amazon EBS User Guide*.

**Important**

We strongly recommend using only paginated requests. Unpaginated requests are susceptible to throttling and timeouts.

**Note**

The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `attachment.attach-time` - The time stamp when the attachment initiated.

- `attachment.delete-on-termination` - Whether the volume is deleted on instance termination.
- `attachment.device` - The device name specified in the block device mapping (for example, `/dev/sda1`).
- `attachment.instance-id` - The ID of the instance the volume is attached to.
- `attachment.status` - The attachment state (`attaching` | `attached` | `detaching`).
- `availability-zone` - The Availability Zone in which the volume was created.
- `availability-zone-id` - The ID of the Availability Zone in which the volume was created.
- `create-time` - The time stamp when the volume was created.
- `encrypted` - Indicates whether the volume is encrypted (`true` | `false`)
- `fast-restored` - Indicates whether the volume was created from a snapshot that is enabled for fast snapshot restore (`true` | `false`).
- `multi-attach-enabled` - Indicates whether the volume is enabled for Multi-Attach (`true` | `false`)
- `operator.managed` - A Boolean that indicates whether this is a managed volume.
- `operator.principal` - The principal that manages the volume. Only valid for managed volumes, where `managed` is `true`.
- `size` - The size of the volume, in GiB.
- `snapshot-id` - The snapshot from which the volume was created.
- `status` - The state of the volume (`creating` | `available` | `in-use` | `deleting` | `deleted` | `error`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `volume-id` - The volume ID.
- `volume-type` - The Amazon EBS volume type (`gp2` | `gp3` | `io1` | `io2` | `st1` | `sc1`| `standard`)

Type: Array of Filter objects

Required: No

**IncludeManagedResources**

Indicates whether to include managed resources in the output. If this parameter is set to `true`, the output includes resources that are managed by AWS services, even if managed resource visibility is set to hidden.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**VolumeId.N**

The volume IDs. If not specified, then all volumes are included in the response.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**volumeSet**

Information about the volumes.

Type: Array of Volume objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all volumes associated with your account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumes
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVolumesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <volumeSet>
      <item>
         <volumeId>vol-1234567890abcdef0</volumeId>
         <size>80</size>
         <snapshotId/>
         <availabilityZone>us-east-1a</availabilityZone>
         <status>in-use</status>
         <createTime>YYYY-MM-DDTHH:MM:SS.SSSZ</createTime>
         <attachmentSet>
```

```
            <item>
               <volumeId>vol-1234567890abcdef0</volumeId>
               <instanceId>i-1234567890abcdef0</instanceId>
               <device>/dev/sdh</device>
               <status>attached</status>
               <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>
               <deleteOnTermination>false</deleteOnTermination>
            </item>
         </attachmentSet>
         <volumeType>standard</volumeType>
         <encrypted>true</encrypted>
         <multiAttachEnabled>false</multiAttachEnabled>
      </item>
   </volumeSet>
</DescribeVolumesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVolumesModifications

Describes the most recent volume modification request for the specified EBS volumes.

For more information, see Monitor the progress of volume modifications in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `modification-state` - The current modification state (modifying | optimizing | completed | failed).
- `original-iops` - The original IOPS rate of the volume.
- `original-size` - The original size of the volume, in GiB.
- `original-volume-type` - The original volume type of the volume (standard | io1 | io2 | gp2 | sc1 | st1).
- `originalMultiAttachEnabled` - Indicates whether Multi-Attach support was enabled (true | false).
- `start-time` - The modification start time.
- `target-iops` - The target IOPS rate of the volume.
- `target-size` - The target size of the volume, in GiB.
- `target-volume-type` - The target volume type of the volume (standard | io1 | io2 | gp2 | sc1 | st1).

- `targetMultiAttachEnabled` - Indicates whether Multi-Attach support is to be enabled (true | false).
- `volume-id` - The ID of the volume.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results (up to a limit of 500) to be returned in a paginated request. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**VolumeId.N**

The IDs of the volumes.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**volumeModificationSet**

Information about the volume modifications.

Type: Array of VolumeModification objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example displays volume status after modifications to size, type, IOPS provisioning, and Multi-Attach support.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumesModifications
&VolumeId.1=vol-0123456789EXAMPLE
&Version=2016-11-15
```

#### Sample Response

```
<DescribeVolumesModificationsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeModificationSet>
    <item>
      <targetIops>10000</targetIops>
      <originalIops>300</originalIops>
      <modificationState>optimizing</modificationState>
      <targetSize>200</targetSize>
      <targetVolumeType>io1</targetVolumeType>
      <volumeId>vol-0123456789EXAMPLE</volumeId>
      <progress>40</progress>
```

```
      <startTime>2017-01-19T23:58:04.922Z</startTime>
      <originalSize>100</originalSize>
      <originalVolumeType>gp2</originalVolumeType>
      <originalMultiAttachEnabled>false</originalMultiAttachEnabled>
      <targetMultiAttachEnabled>true</targetMultiAttachEnabled>
    </item>
  </volumeModificationSet>
</DescribeVolumesModificationsResponse>
```

## Example 2

This example displays information about all volumes in a Region with a modification state of optimizing or completed.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumesModifications
&Filter.1.Value.2=completed
&Filter.1.Value.1=optimizing
&Version=2016-11-15
&Filter.1.Name=modification-state
```

### Sample Response

```
<DescribeVolumesModificationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
 <requestId>35fdf8d3-6ffa-46dc-8f8e-62fe70bc31a2</requestId>
 <volumeModificationSet>
  <item>
   <targetIops>10000</targetIops>
   <originalIops>100</originalIops>
   <modificationState>optimizing</modificationState>
   <targetSize>2000</targetSize>
   <targetVolumeType>io1</targetVolumeType>
   <volumeId>vol-06397e7a0eEXAMPLE</volumeId>
   <progress>3</progress>
   <startTime>2017-02-10T23:40:57.612Z</startTime>
   <originalSize>10</originalSize>
   <originalVolumeType>gp2</originalVolumeType>
  </item>
  <item>
```

```
    <targetIops>10000</targetIops>
    <originalIops>100</originalIops>
    <modificationState>completed</modificationState>
    <targetSize>200</targetSize>
    <targetVolumeType>io1</targetVolumeType>
    <volumeId>vol-bEXAMPLE</volumeId>
    <progress>100</progress>
    <startTime>2017-02-10T22:50:52.207Z</startTime>
    <endTime>2017-02-10T22:56:04.823Z</endTime>
    <originalSize>8</originalSize>
    <originalVolumeType>gp2</originalVolumeType>
   </item>
  </volumeModificationSet>
</DescribeVolumesModificationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVolumeStatus

Describes the status of the specified volumes. Volume status provides the result of the checks performed on your volumes to determine events that can impair the performance of your volumes. The performance of a volume can be affected if an issue occurs on the volume's underlying host. If the volume's underlying host experiences a power outage or system issue, after the system is restored, there could be data inconsistencies on the volume. Volume events notify you if this occurs. Volume actions notify you if any action needs to be taken in response to the event.

The `DescribeVolumeStatus` operation provides the following information about the specified volumes:

*Status*: Reflects the current status of the volume. The possible values are ok, `impaired` , `warning`, or `insufficient-data`. If all checks pass, the overall status of the volume is ok. If the check fails, the overall status is `impaired`. If the status is `insufficient-data`, then the checks might still be taking place on your volume at the time. We recommend that you retry the request. For more information about volume status, see Monitor the status of your volumes in the *Amazon EBS User Guide*.

*Events*: Reflect the cause of a volume status and might require you to take action. For example, if your volume returns an `impaired` status, then the volume event might be `potential-data-inconsistency`. This means that your volume has been affected by an issue with the underlying host, has all I/O operations disabled, and might have inconsistent data.

*Actions*: Reflect the actions you might have to take in response to an event. For example, if the status of the volume is `impaired` and the volume event shows `potential-data-inconsistency`, then the action shows `enable-volume-io`. This means that you may want to enable the I/O operations for the volume and then check the volume for data consistency. For more information, see Work with an impaired EBS volume.

Volume status is based on the volume status checks, and does not reflect the volume state. Therefore, volume status does not indicate volumes in the `error` state (for example, when a volume is incapable of accepting I/O.)

**Note**

The order of the elements in the response, including those within nested structures, might vary. Applications should not assume the elements appear in a particular order.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `action.code` - The action code for the event (for example, `enable-volume-io`).
- `action.description` - A description of the action.
- `action.event-id` - The event ID associated with the action.
- `availability-zone` - The Availability Zone of the instance.
- `event.description` - A description of the event.
- `event.event-id` - The event ID.
- `event.event-type` - The event type (for `io-enabled`: `passed` | `failed`; for `io-performance`: `io-performance:degraded` | `io-performance:severely-degraded` | `io-performance:stalled`).
- `event.not-after` - The latest end time for the event.
- `event.not-before` - The earliest start time for the event.
- `volume-status.details-name` - The cause for `volume-status.status` (`io-enabled` | `io-performance`).
- `volume-status.details-status` - The status of `volume-status.details-name` (for `io-enabled`: `passed` | `failed`; for `io-performance`: `normal` | `degraded` | `severely-degraded` | `stalled`).
- `volume-status.status` - The status of the volume (ok | `impaired` | `warning` | `insufficient-data`).

Type: Array of Filter objects

Required: No

**IncludeManagedResources**

Indicates whether to include managed resources in the output. If this parameter is set to `true`, the output includes resources that are managed by AWS services, even if managed resource visibility is set to hidden.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**VolumeId.N**

The IDs of the volumes.

Default: Describes all your volumes.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**volumeStatusSet**

Information about the status of the volumes.

Type: Array of VolumeStatusItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the status of all the volumes associated with your account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeStatus
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVolumeStatus xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeStatusSet>
    <item>
      <VolumeId>vol-1234567890abcdef0</volumeId>
      <availabilityZone>us-east-1d</availabilityZone>
      <volumeStatus>
        <status>ok</status>
```

```
        <details>
          <item>
            <title>io-enabled</title>
            <status>passed</status>
          </item>
        </details>
      </volumeStatus>
      </item>
    <item>
      <volumeId>vol-1234567890abcdef1</volumeId>
      <availabilityZone>us-east-1d</availabilityZone>
      <volumeStatus>
        <status>impaired</status>
        <details>
          <item>
            <title>io-enabled</title>
            <status>failed</status>
          </item>
        </details>
      </volumeStatus>
      <eventsSet>
            <item>
              <eventId>evol-61a54008</eventId>
              <eventType>potential-data-inconsistency</eventType>
              <description>THIS IS AN EXAMPLE</description>
              <notBefore>2011-12-01T14:00:00.000Z</notBefore>
              <notAfter>2011-12-01T15:00:00.000Z</notAfter>
            </item>
          </eventsSet>
      <actionsSet>
        <item>
          <code>enable-volume-io</code>
          <eventId> evol-61a54008</eventId>
          <eventType>potential-data-inconsistency</eventType>
          <description>THIS IS AN EXAMPLE</description>
        </item>
      </actionsSet>
    </item>
    </volumeStatusSet>
</DescribeVolumesStatusResponse>
```

### Example

This example describes all the volumes in the `us-east-1d` Availability Zone with `failed` `io-enabled` status.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeStatus
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1d
&Filter.2.Name=volume-status.details-name
&Filter.2.Value.1=io-enabled
&Filter.3.Name=volume-status.details-status
&Filter.3.Value.1=failed
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcAttribute

Describes the specified attribute of the specified VPC. You can specify only one attribute at a time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The VPC attribute.

Type: String

Valid Values: `enableDnsSupport | enableDnsHostnames | enableNetworkAddressUsageMetrics`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**enableDnsHostnames**

Indicates whether the instances launched in the VPC get DNS hostnames. If this attribute is `true`, instances in the VPC get DNS hostnames; otherwise, they do not.

Type: AttributeBooleanValue object

**enableDnsSupport**

Indicates whether DNS resolution is enabled for the VPC. If this attribute is `true`, the Amazon DNS server resolves DNS hostnames for your instances to their corresponding IP addresses; otherwise, it does not.

Type: AttributeBooleanValue object

**enableNetworkAddressUsageMetrics**

Indicates whether Network Address Usage metrics are enabled for your VPC.

Type: AttributeBooleanValue object

**requestId**

The ID of the request.

Type: String

**vpcId**

The ID of the VPC.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes the `enableDnsSupport` attribute of the specified VPC. The sample response indicates that DNS resolution is supported.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsSupport
&AUTHPARAMS
```

### Sample Response

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
  <enableDnsSupport>
    <value>true</value>
  </enableDnsSupport>
</DescribeVpcAttributeResponse>
```

## Example 2

This request describes the `enableDnsHostnames` attribute of the specified VPC. The sample response indicates that DNS hostnames are supported.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsHostnames
&AUTHPARAMS
```

### Sample Response

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcId>vpc-1a2b3c4d</vpcId>
   <enableDnsHostnames>
    <value>true</value>
   </enableDnsHostnames>
</DescribeVpcAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcBlockPublicAccessExclusions

Describe VPC Block Public Access (BPA) exclusions. A VPC BPA exclusion is a mode that can be applied to a single VPC or subnet that exempts it from the account's BPA mode and will allow bidirectional or egress-only access. You can create BPA exclusions for VPCs and subnets even when BPA is not enabled on the account to ensure that there is no traffic disruption to the exclusions when VPC BPA is turned on. To learn more about VPC BPA, see Block public access to VPCs and subnets in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ExclusionId.N**

IDs of exclusions.

Type: Array of strings

Required: No

**Filter.N**

Filters for the request:

- `resource-arn` - The Amazon Resource Name (ARN) of a exclusion.
- `internet-gateway-exclusion-mode` - The mode of a VPC BPA exclusion. Possible values: `allow-bidirectional | allow-egress`.
- `state` - The state of VPC BPA. Possible values: `create-in-progress | create-complete | update-in-progress | update-complete | delete-in-progress | deleted-complete | disable-in-progress | disable-complete`

- `tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `tag-value`: The value of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific value, regardless of the tag key.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**vpcBlockPublicAccessExclusionSet**

Details related to the exclusions.

Type: Array of VpcBlockPublicAccessExclusion objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcBlockPublicAccessOptions

Describe VPC Block Public Access (BPA) options. VPC Block Public Access (BPA) enables you to block resources in VPCs and subnets that you own in a Region from reaching or being reached from the internet through internet gateways and egress-only internet gateways. To learn more about VPC BPA, see Block public access to VPCs and subnets in the *Amazon VPC User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpcBlockPublicAccessOptions**

Details related to the options.

Type: VpcBlockPublicAccessOptions object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcClassicLink

> **Note**
>
> This action is deprecated.

Describes the ClassicLink status of the specified VPCs.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `is-classic-link-enabled` - Whether the VPC is enabled for ClassicLink (`true` | `false`).
- `tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**VpcId.N**

The VPCs for which you want to describe the ClassicLink status.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpcSet**

The ClassicLink status of the VPCs.

Type: Array of VpcClassicLink objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcClassicLinkDnsSupport

> **Note**
>
> This action is deprecated.

Describes the ClassicLink DNS support status of one or more VPCs. If enabled, the DNS hostname of a linked EC2-Classic instance resolves to its private IP address when addressed from an instance in the VPC to which it's linked. Similarly, the DNS hostname of an instance in a VPC resolves to its private IP address when addressed from a linked EC2-Classic instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

**VpcIds.N**

The IDs of the VPCs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

**requestId**

The ID of the request.

Type: String

**vpcs**

Information about the ClassicLink DNS support status of the VPCs.

Type: Array of ClassicLinkDnsSupport objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcEncryptionControls

Describes one or more VPC Encryption Control configurations. VPC Encryption Control enables you to enforce encryption for all data in transit within and between VPCs to meet compliance requirements You can filter the results to return information about specific encryption controls or VPCs.

For more information, see Enforce VPC encryption in transit in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters to apply to the request.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**VpcEncryptionControlId.N**

The IDs of the VPC Encryption Control configurations to describe.

Type: Array of strings

Required: No

**VpcId.N**

The IDs of the VPCs to describe encryption control configurations for.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**vpcEncryptionControlSet**

Information about the VPC Encryption Control configurations.

Type: Array of VpcEncryptionControl objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcEndpointAssociations

Describes the VPC resources, VPC endpoint services, Amazon Lattice services, or service networks associated with the VPC endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `vpc-endpoint-id` - The ID of the VPC endpoint.
- `associated-resource-accessibility` - The association state. When the state is `accessible`, it returns `AVAILABLE`. When the state is `inaccessible`, it returns `PENDING` or `FAILED`.
- `association-id` - The ID of the VPC endpoint association.
- `associated-resource-id` - The ID of the associated resource configuration.
- `service-network-arn` - The Amazon Resource Name (ARN) of the associated service network. Only VPC endpoints of type service network will be returned.
- `resource-configuration-group-arn` - The Amazon Resource Name (ARN) of the resource configuration of type GROUP.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum page size.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

**NextToken**

The pagination token.

Type: String

Required: No

**VpcEndpointId.N**

The IDs of the VPC endpoints.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The pagination token.

Type: String

**requestId**

The ID of the request.

Type: String

**vpcEndpointAssociationSet**

Details of the endpoint associations.

Type: Array of VpcEndpointAssociation objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcEndpointConnectionNotifications

Describes the connection notifications for VPC endpoints and VPC endpoint services.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ConnectionNotificationId**

The ID of the notification.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `connection-notification-arn` - The ARN of the SNS topic for the notification.
- `connection-notification-id` - The ID of the notification.
- `connection-notification-state` - The state of the notification (`Enabled` | `Disabled`).
- `connection-notification-type` - The type of notification (`Topic`).
- `service-id` - The ID of the endpoint service.
- `vpc-endpoint-id` - The ID of the VPC endpoint.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another request with the returned `NextToken` value.

Type: Integer

Required: No

**NextToken**

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**connectionNotificationSet**

The notifications.

Type: Array of ConnectionNotification objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes all of your connection notifications.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpointConnectionNotifications
&AUTHPARAMS
```

### Sample Response

```
<DescribeVpcEndpointConnectionNotificationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>48541e40-9b6f-488e-8da7-a52a7example</requestId>
    <connectionNotificationSet>
        <item>
            <connectionNotificationArn>arn:aws:sns:us-
east-1:123456789012:EndpointNotification</connectionNotificationArn>
            <connectionEvents>
                <item>Accept</item>
                <item>Connect</item>
                <item>Delete</item>
                <item>Reject</item>
            </connectionEvents>
            <connectionNotificationType>Topic</connectionNotificationType>
            <connectionNotificationState>Enabled</connectionNotificationState>
            <connectionNotificationId>vpce-nfn-123cb952bc8af7123</
connectionNotificationId>
            <vpcEndpointId>vpce-1234151a02f327123</vpcEndpointId>
        </item>
    </connectionNotificationSet>
</DescribeVpcEndpointConnectionNotificationsResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcEndpointConnections

Describes the VPC endpoint connections to your VPC endpoint services, including any endpoints that are pending your acceptance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `ip-address-type` - The IP address type (`ipv4` | `ipv6`).
- `service-id` - The ID of the service.
- `vpc-endpoint-owner` - The ID of the AWS account ID that owns the endpoint.
- `vpc-endpoint-region` - The Region of the endpoint or `cross-region` to find endpoints for other Regions.
- `vpc-endpoint-state` - The state of the endpoint (`pendingAcceptance` | `pending` | `available` | `deleting` | `deleted` | `rejected` | `failed`).
- `vpc-endpoint-id` - The ID of the endpoint.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned

`NextToken` value. This value can be between 5 and 1,000; if `MaxResults` is given a value larger than 1,000, only 1,000 results are returned.

Type: Integer

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**vpcEndpointConnectionSet**

Information about the VPC endpoint connections.

Type: Array of VpcEndpointConnection objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes all of the VPC endpoint connections for all of your services.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpointConnections
&AUTHPARAMS
```

### Sample Response

```
<DescribeVpcEndpointConnectionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>ed2d237f-426b-4927-981b-980example</requestId>
    <vpcEndpointConnectionSet>
        <item>
            <vpcEndpointOwner>123456789012</vpcEndpointOwner>
            <creationTimestamp>2017-10-19T12:36:10.939Z</creationTimestamp>
            <vpcEndpointState>available</vpcEndpointState>
            <serviceId>vpce-svc-0127881c0d25a3123</serviceId>
            <vpcEndpointId>vpce-09bce00dc3edcc329</vpcEndpointId>
        </item>
        <item>
            <vpcEndpointOwner>112233445566</vpcEndpointOwner>
            <creationTimestamp>2017-10-18T12:14:41.892Z</creationTimestamp>
            <vpcEndpointState>rejected</vpcEndpointState>
            <serviceId>vpce-svc-0435c4480f65e3abc</serviceId>
            <vpcEndpointId>vpce-051a4ba136c8a12d8</vpcEndpointId>
        </item>
        <item>
            <vpcEndpointOwner>123123123123</vpcEndpointOwner>
            <creationTimestamp>2017-10-18T13:25:07.739Z</creationTimestamp>
            <vpcEndpointState>pendingAcceptance</vpcEndpointState>
            <serviceId>vpce-svc-01f406f3e99f8a123</serviceId>
            <vpcEndpointId>vpce-09593ee8e85835659</vpcEndpointId>
        </item>
    </vpcEndpointConnectionSet>
</DescribeVpcEndpointConnectionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcEndpoints

Describes your VPC endpoints. The default is to describe all your VPC endpoints. Alternatively, you can specify specific VPC endpoint IDs or filter the results to include only the VPC endpoints that match specific criteria.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `ip-address-type` - The IP address type (`ipv4` | `ipv6`).
- `service-name` - The name of the service.
- `service-region` - The Region of the service.
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC in which the endpoint resides.
- `vpc-endpoint-id` - The ID of the endpoint.
- `vpc-endpoint-state` - The state of the endpoint (`pendingAcceptance` | `pending` | `available` | `deleting` | `deleted` | `rejected` | `failed`).

- `vpc-endpoint-type` - The type of VPC endpoint (`Interface` | `Gateway` | `GatewayLoadBalancer` | `Resource` | `ServiceNetwork`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.

Constraint: If the value is greater than 1,000, we return only 1,000 items.

Type: Integer

Required: No

**NextToken**

The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Required: No

**VpcEndpointId.N**

The IDs of the VPC endpoints.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: String

**requestId**

The ID of the request.

Type: String

**vpcEndpointSet**

Information about the VPC endpoints.

Type: Array of VpcEndpoint objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all of your endpoints.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpoints
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpcEndpointsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>8d3e7656-3328-451d-8c86-7156example</requestId>
    <vpcEndpointSet>
        <item>
            <policyDocument>{"Version":"2008-10-17",       "Statement":
[{"Effect":"Allow","Principal":"*","Action":"*","Resource":"*"}]}</policyDocument>
            <routeTableIdSet>
                <item>rtb-3d560345</item>
            </routeTableIdSet>
            <dnsEntrySet/>
            <serviceName>com.amazonaws.us-east-1.dynamodb</serviceName>
            <privateDnsEnabled>true</privateDnsEnabled>
            <groupSet/>
            <vpcEndpointId>vpce-032a826a</vpcEndpointId>
```

```
            <subnetIdSet/>
            <networkInterfaceIdSet/>
            <vpcEndpointType>Gateway</vpcEndpointType>
            <vpcId>vpc-aabb1122</vpcId>
            <creationTimestamp>2017-09-05T20:41:28Z</creationTimestamp>
            <state>available</state>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>TeamA</value>
                </item>
            </tagSet>
        </item>
        <item>
            <policyDocument>{"Statement": [{"Action": "*", "Effect": "Allow",
 "Principal": "*", "Resource": "*"}]}</policyDocument>
            <routeTableIdSet/>
            <dnsEntrySet>
                <item>
                    <hostedZoneId>Z7HUB22UULQXV</hostedZoneId>
                    <dnsName>vpce-0f89a33420c1931d7-bluzidnv.elasticloadbalancing.us-
east-1.vpce.amazonaws.com</dnsName>
                </item>
                <item>
                    <hostedZoneId>Z7HUB22UULQXV</hostedZoneId>
                    <dnsName>vpce-0f89a33420c1931d7-bluzidnv-us-
east-1b.elasticloadbalancing.us-east-1.vpce.amazonaws.com</dnsName>
                </item>
                <item>
                    <hostedZoneId>Z7HUB22UULQXV</hostedZoneId>
                    <dnsName>vpce-0f89a33420c1931d7-bluzidnv-us-
east-1a.elasticloadbalancing.us-east-1.vpce.amazonaws.com</dnsName>
                </item>
            </dnsEntrySet>
            <serviceName>com.amazonaws.us-east-1.elasticloadbalancing</serviceName>
            <privateDnsEnabled>false</privateDnsEnabled>
            <groupSet>
                <item>
                    <groupName>default</groupName>
                    <groupId>sg-54e8bf31</groupId>
                </item>
            </groupSet>
            <vpcEndpointId>vpce-0f89a33420c1931d7</vpcEndpointId>
            <subnetIdSet>
```

```
                <item>subnet-d6fcaa8d</item>
                <item>subnet-7b16de0c</item>
            </subnetIdSet>
            <networkInterfaceIdSet>
                <item>eni-2ec2b084</item>
                <item>eni-1b4a65cf</item>
            </networkInterfaceIdSet>
            <vpcEndpointType>Interface</vpcEndpointType>
            <vpcId>vpc-1a2b3c4d</vpcId>
            <creationTimestamp>2017-09-05T17:55:27.583Z</creationTimestamp>
            <state>available</state>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>TeamA</value>
                </item>
            </tagSet>
        </item>
        <item>
            <creationTimestamp>2020-11-11T08:06:03.522Z</creationTimestamp>
            <networkInterfaceIdSet>
                <item>eni-111111222222333aad</item>
            </networkInterfaceIdSet>
            <ownerId>123456789012</ownerId>
            <requesterManaged>false</requesterManaged>
            <serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-abcd33a1c4321c123</
serviceName>
            <state>available</state>
            <subnetIdSet>
                <item>subnet-aaaabbbb333322211</item>
            </subnetIdSet>
            <tagSet/>
            <vpcEndpointId>vpce-22223333bbbbaaaa1</vpcEndpointId>
            <vpcEndpointType>GatewayLoadBalancer</vpcEndpointType>
            <vpcId>vpc-abcabcabc12312312</vpcId>
         </item>
    </vpcEndpointSet>
</DescribeVpcEndpointsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcEndpointServiceConfigurations

Describes the VPC endpoint service configurations in your account (your services).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `service-name` - The name of the service.
- `service-id` - The ID of the service.
- `service-state` - The state of the service (`Pending` | `Available` | `Deleting` | `Deleted` | `Failed`).
- `supported-ip-address-types` - The IP address type (`ipv4` | `ipv6`).
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1,000; if `MaxResults` is given a value larger than 1,000, only 1,000 results are returned.

Type: Integer

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

**ServiceId.N**

The IDs of the endpoint services.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**serviceConfigurationSet**

Information about the services.

Type: Array of ServiceConfiguration objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all of your VPC endpoint service configurations.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpointServiceConfigurations
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpcEndpointServiceConfigurationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>d5bad480-0167-4a7f-a1c6-2651example</requestId>
    <serviceConfigurationSet>
        <item>
            <serviceState>Available</serviceState>
            <serviceType>
                <item>
                    <serviceType>Interface</serviceType>
                </item>
            </serviceType>
            <baseEndpointDnsNameSet>
                <item>vpce-svc-0799b7d1c483b0123.us-east-1.vpce.amazonaws.com</item>
            </baseEndpointDnsNameSet>
            <acceptanceRequired>true</acceptanceRequired>
            <availabilityZoneSet>
                <item>us-east-1d</item>
            </availabilityZoneSet>
            <serviceId>vpce-svc-0799b7d1c483b0123</serviceId>
```

```
            <serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-0799b7d1c483b0123</
serviceName>
            <networkLoadBalancerArnSet>
                <item>arn:aws:elasticloadbalancing:us-east-1:123456789012:loadbalancer/
net/mynlb/1238753950b25123</item>
            </networkLoadBalancerArnSet>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>TeamA</value>
                </item>
            </tagSet>
        </item>
        <item>
            <serviceState>Available</serviceState>
            <serviceType>
                <item>
                    <serviceType>GatewayLoadBalancer</serviceType>
                </item>
            </serviceType>
            <acceptanceRequired>false</acceptanceRequired>
            <availabilityZoneSet>
                <item>us-east-1d</item>
            </availabilityZoneSet>
            <serviceId>vpce-svc-123abcc1298abc123</serviceId>
            <serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-123abcc1298abc123</
serviceName>
            <gatewayLoadBalancerArnSet>
                <item>arn:aws:elasticloadbalancing:us-east-1:123456789012:loadbalancer/
gwy/GWLBService/abc210844e429abc</item>
            </gatewayLoadBalancerArnSet>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>SecurityAppliance</value>
                </item>
            </tagSet>
        </item>
    </serviceConfigurationSet>
</DescribeVpcEndpointServiceConfigurationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcEndpointServicePermissions

Describes the principals (service consumers) that are permitted to discover your VPC endpoint service. Principal ARNs with path components aren't supported.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `principal` - The ARN of the principal.
- `principal-type` - The principal type (`All` | `Service` | `OrganizationUnit` | `Account` | `User` | `Role`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1,000; if `MaxResults` is given a value larger than 1,000, only 1,000 results are returned.

Type: Integer

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

**ServiceId**

The ID of the service.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**allowedPrincipals**

Information about the allowed principals.

Type: Array of AllowedPrincipal objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example describes the permissions for service `vpce-svc-03d5ebb7d9579a123`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpointServicePermissions
&ServiceId=vpce-svc-03d5ebb7d9579a123
&AUTHPARAMS
```

### Sample Response

```
<DescribeVpcEndpointServicePermissionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>5359c8a3-9151-4964-abed-b4422example</requestId>
    <allowedPrincipals>
        <item>
            <principal>arn:aws:iam::123456789012:root</principal>
            <principalType>Account</principalType>
        </item>
    </allowedPrincipals>
</DescribeVpcEndpointServicePermissionsResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcEndpointServices

Describes available services to which you can create a VPC endpoint.

When the service provider and the consumer have different accounts in multiple Availability Zones, and the consumer views the VPC endpoint service information, the response only includes the common Availability Zones. For example, when the service provider account uses `us-east-1a` and `us-east-1c` and the consumer uses `us-east-1a` and `us-east-1b`, the response includes the VPC endpoint services in the common Availability Zone, `us-east-1a`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `owner` - The ID or alias of the AWS account that owns the service.
- `service-name` - The name of the service.
- `service-region` - The Region of the service.
- `service-type` - The type of service (`Interface` | `Gateway` | `GatewayLoadBalancer`).
- `supported-ip-address-types` - The IP address type (`ipv4` | `ipv6`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.

Constraint: If the value is greater than 1,000, we return only 1,000 items.

Type: Integer

Required: No

**NextToken**

The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Required: No

**ServiceName.N**

The service names.

Type: Array of strings

Required: No

**ServiceRegion.N**

The service Regions.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: String

**requestId**

The ID of the request.

Type: String

**serviceDetailSet**

Information about the service.

Type: Array of ServiceDetail objects

**serviceNameSet**

The supported services.

Type: Array of strings

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes all available endpoint services.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpointServices
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpcEndpointServicesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>19a9ff46-7df6-49b8-9726-3df27527089d</requestId>
    <serviceNameSet>
        <item>com.amazonaws.us-east-1.dynamodb</item>
        <item>com.amazonaws.us-east-1.ec2</item>
        <item>com.amazonaws.us-east-1.ec2messages</item>
        <item>com.amazonaws.us-east-1.elasticloadbalancing</item>
        <item>com.amazonaws.us-east-1.kinesis-streams</item>
```

```
        <item>com.amazonaws.us-east-1.s3</item>
        <item>com.amazonaws.us-east-1.ssm</item>
    </serviceNameSet>
    <serviceDetailSet>
        <item>
            <owner>amazon</owner>
            <serviceType>
                <item>
                    <serviceType>Gateway</serviceType>
                </item>
            </serviceType>
            <baseEndpointDnsNameSet>
                <item>dynamodb.us-east-1.amazonaws.com</item>
            </baseEndpointDnsNameSet>
            <acceptanceRequired>false</acceptanceRequired>
            <availabilityZoneSet>
                <item>us-east-1a</item>
                <item>us-east-1b</item>
                <item>us-east-1c</item>
                <item>us-east-1d</item>
                <item>us-east-1e</item>
                <item>us-east-1f</item>
            </availabilityZoneSet>
            <serviceName>com.amazonaws.us-east-1.dynamodb</serviceName>
            <vpcEndpointPolicySupported>true</vpcEndpointPolicySupported>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>TeamA</value>
                </item>
            </tagSet>
        </item>
        <item>
            <owner>amazon</owner>
            <serviceType>
                <item>
                    <serviceType>Interface</serviceType>
                </item>
            </serviceType>
            <baseEndpointDnsNameSet>
                <item>ec2.us-east-1.vpce.amazonaws.com</item>
            </baseEndpointDnsNameSet>
            <acceptanceRequired>false</acceptanceRequired>
            <privateDnsName>ec2.us-east-1.amazonaws.com</privateDnsName>
```

```
            <availabilityZoneSet>
                <item>us-east-1a</item>
                <item>us-east-1b</item>
                <item>us-east-1c</item>
                <item>us-east-1d</item>
                <item>us-east-1e</item>
                <item>us-east-1f</item>
            </availabilityZoneSet>
            <serviceName>com.amazonaws.us-east-1.ec2</serviceName>
            <vpcEndpointPolicySupported>false</vpcEndpointPolicySupported>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>TeamA</value>
                </item>
            </tagSet>
        </item>
        <item>
            <owner>amazon</owner>
            <serviceType>
                <item>
                    <serviceType>Interface</serviceType>
                </item>
            </serviceType>
            <baseEndpointDnsNameSet>
                <item>ec2messages.us-east-1.vpce.amazonaws.com</item>
            </baseEndpointDnsNameSet>
            <acceptanceRequired>false</acceptanceRequired>
            <privateDnsName>ec2messages.us-east-1.amazonaws.com</privateDnsName>
            <availabilityZoneSet>
                <item>us-east-1a</item>
                <item>us-east-1b</item>
                <item>us-east-1c</item>
                <item>us-east-1d</item>
                <item>us-east-1e</item>
                <item>us-east-1f</item>
            </availabilityZoneSet>
            <serviceName>com.amazonaws.us-east-1.ec2messages</serviceName>
            <vpcEndpointPolicySupported>false</vpcEndpointPolicySupported>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>TeamA</value>
                </item>
```

```
            </tagSet>
        </item>
        <item>
            <owner>amazon</owner>
            <serviceType>
                <item>
                    <serviceType>Interface</serviceType>
                </item>
            </serviceType>
            <baseEndpointDnsNameSet>
                <item>elasticloadbalancing.us-east-1.vpce.amazonaws.com</item>
            </baseEndpointDnsNameSet>
            <acceptanceRequired>false</acceptanceRequired>
            <privateDnsName>elasticloadbalancing.us-east-1.amazonaws.com</
privateDnsName>
            <availabilityZoneSet>
                <item>us-east-1a</item>
                <item>us-east-1b</item>
                <item>us-east-1c</item>
                <item>us-east-1d</item>
                <item>us-east-1e</item>
                <item>us-east-1f</item>
            </availabilityZoneSet>
            <serviceName>com.amazonaws.us-east-1.elasticloadbalancing</serviceName>
            <vpcEndpointPolicySupported>false</vpcEndpointPolicySupported>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>TeamA</value>
                </item>
            </tagSet>
        </item>
        <item>
            <owner>amazon</owner>
            <serviceType>
                <item>
                    <serviceType>Interface</serviceType>
                </item>
            </serviceType>
            <baseEndpointDnsNameSet>
                <item>kinesis.us-east-1.vpce.amazonaws.com</item>
            </baseEndpointDnsNameSet>
            <acceptanceRequired>false</acceptanceRequired>
            <privateDnsName>kinesis.us-east-1.amazonaws.com</privateDnsName>
```

```
            <availabilityZoneSet>
                <item>us-east-1a</item>
                <item>us-east-1b</item>
                <item>us-east-1c</item>
                <item>us-east-1d</item>
                <item>us-east-1e</item>
                <item>us-east-1f</item>
            </availabilityZoneSet>
            <serviceName>com.amazonaws.us-east-1.kinesis-streams</serviceName>
            <vpcEndpointPolicySupported>false</vpcEndpointPolicySupported>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>TeamA</value>
                </item>
            </tagSet>
        </item>
        <item>
            <owner>amazon</owner>
            <serviceType>
                <item>
                    <serviceType>Gateway</serviceType>
                </item>
            </serviceType>
            <baseEndpointDnsNameSet>
                <item>s3.us-east-1.amazonaws.com</item>
            </baseEndpointDnsNameSet>
            <acceptanceRequired>false</acceptanceRequired>
            <availabilityZoneSet>
                <item>us-east-1a</item>
                <item>us-east-1b</item>
                <item>us-east-1c</item>
                <item>us-east-1d</item>
                <item>us-east-1e</item>
                <item>us-east-1f</item>
            </availabilityZoneSet>
            <serviceName>com.amazonaws.us-east-1.s3</serviceName>
            <vpcEndpointPolicySupported>true</vpcEndpointPolicySupported>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>TeamA</value>
                </item>
            </tagSet>
```

```
        </item>
        <item>
            <owner>amazon</owner>
            <serviceType>
                <item>
                    <serviceType>Interface</serviceType>
                </item>
            </serviceType>
            <baseEndpointDnsNameSet>
                <item>ssm.us-east-1.vpce.amazonaws.com</item>
            </baseEndpointDnsNameSet>
            <acceptanceRequired>false</acceptanceRequired>
            <privateDnsName>ssm.us-east-1.amazonaws.com</privateDnsName>
            <availabilityZoneSet>
                <item>us-east-1a</item>
                <item>us-east-1b</item>
                <item>us-east-1c</item>
                <item>us-east-1d</item>
                <item>us-east-1e</item>
            </availabilityZoneSet>
            <serviceName>com.amazonaws.us-east-1.ssm</serviceName>
            <vpcEndpointPolicySupported>true</vpcEndpointPolicySupported>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>TeamA</value>
                </item>
            </tagSet>
        </item>
    </serviceDetailSet>
</DescribeVpcEndpointServicesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcPeeringConnections

Describes your VPC peering connections. The default is to describe all your VPC peering connections. Alternatively, you can specify specific VPC peering connection IDs or filter the results to include only the VPC peering connections that match specific criteria.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `accepter-vpc-info.cidr-block` - The IPv4 CIDR block of the accepter VPC.
- `accepter-vpc-info.owner-id` - The ID of the AWS account that owns the accepter VPC.
- `accepter-vpc-info.vpc-id` - The ID of the accepter VPC.
- `expiration-time` - The expiration date and time for the VPC peering connection.
- `requester-vpc-info.cidr-block` - The IPv4 CIDR block of the requester's VPC.
- `requester-vpc-info.owner-id` - The ID of the AWS account that owns the requester VPC.
- `requester-vpc-info.vpc-id` - The ID of the requester VPC.
- `status-code` - The status of the VPC peering connection (`pending-acceptance` | `failed` | `expired` | `provisioning` | `active` | `deleting` | `deleted` | `rejected`).
- `status-message` - A message that provides more information about the status of the VPC peering connection, if applicable.
- `tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have

a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-peering-connection-id` - The ID of the VPC peering connection.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**VpcPeeringConnectionId.N**

The IDs of the VPC peering connections.

Default: Describes all your VPC peering connections.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**vpcPeeringConnectionSet**

Information about the VPC peering connections.

Type: Array of VpcPeeringConnection objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes all of your VPC peering connections.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpcPeeringConnectionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
 <vpcPeeringConnectionSet>
 <item>
  <vpcPeeringConnectionId>pcx-111aaa22</vpcPeeringConnectionId>
```

```
    <requesterVpcInfo>
     <ownerId>777788889999</ownerId>
     <vpcId>vpc-1a2b3c4d</vpcId>
     <cidrBlock>172.31.0.0/16</cidrBlock>
    </requesterVpcInfo>
    <accepterVpcInfo>
     <ownerId>123456789012</ownerId>
     <vpcId>vpc-aa22cc33</vpcId>
     <cidrBlock>10.0.0.0/16</cidrBlock>
     <peeringOptions>
        <allowEgressFromLocalClassicLinkToRemoteVpc>false</
allowEgressFromLocalClassicLinkToRemoteVpc>
        <allowEgressFromLocalVpcToRemoteClassicLink>true</
allowEgressFromLocalVpcToRemoteClassicLink>
        <allowDnsResolutionFromRemoteVpc>false</allowDnsResolutionFromRemoteVpc>
     </peeringOptions>
    </accepterVpcInfo>
     <status>
      <code>active</code>
      <message>Active</message>
     </status>
     <tagSet/>
     </item>
   </vpcPeeringConnectionSet>
</DescribeVpcPeeringConnectionsResponse>
```

## Example 2

This example describes all of your VPC peering connections that are in the `pending-acceptance` state.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=status-code
&Filter.1.Value=pending-acceptance
&AUTHPARAMS
```

## Example 3

This example describes all of your VPC peering connections that have the tag `Name=Finance` or `Name=Accounts`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=tag:Name
&Filter.1.Value.1=Finance
&Filter.1.Value.2=Accounts
&AUTHPARAMS
```

## Example 4

This example describes all of the VPC peering connections for your specified VPC, `vpc-1a2b3c4d`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=requester-vpc-info.vpc-id
&Filter.1.Value=vpc-1a2b3c4d
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpcs

Describes your VPCs. The default is to describe all your VPCs. Alternatively, you can specify specific VPC IDs or filter the results to include only the VPCs that match specific criteria.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters.

- `cidr` - The primary IPv4 CIDR block of the VPC. The CIDR block you specify must exactly match the VPC's CIDR block for information to be returned for the VPC. Must contain the slash followed by one or two digits (for example, `/28`).
- `cidr-block-association.cidr-block` - An IPv4 CIDR block associated with the VPC.
- `cidr-block-association.association-id` - The association ID for an IPv4 CIDR block associated with the VPC.
- `cidr-block-association.state` - The state of an IPv4 CIDR block associated with the VPC.
- `dhcp-options-id` - The ID of a set of DHCP options.
- `ipv6-cidr-block-association.ipv6-cidr-block` - An IPv6 CIDR block associated with the VPC.
- `ipv6-cidr-block-association.ipv6-pool` - The ID of the IPv6 address pool from which the IPv6 CIDR block is allocated.
- `ipv6-cidr-block-association.association-id` - The association ID for an IPv6 CIDR block associated with the VPC.

- `ipv6-cidr-block-association.state` - The state of an IPv6 CIDR block associated with the VPC.
- `is-default` - Indicates whether the VPC is the default VPC.
- `owner-id` - The ID of the AWS account that owns the VPC.
- `state` - The state of the VPC (`pending` | `available`).
- `tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**VpcId.N**

The IDs of the VPCs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**vpcSet**

Information about the VPCs.

Type: Array of Vpc objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes the specified VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcs
&VpcId.1=vpc-081ec835f3EXAMPLE
&vpcId.2=vpc-0ee975135dEXAMPLE
&VpcId.3=vpc-06e4ab6c6cEXAMPLE
&AUTHPARAMS
```

## Sample Response

```
<DescribeVpcsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>8b67ac77-886c-4027-8f0e-d351f7fc9971</requestId>
    <vpcSet>
        <item>
            <vpcId>vpc-081ec835f3EXAMPLE</vpcId>
            <ownerId>111122223333</ownerId>
            <state>available</state>
            <cidrBlock>10.0.1.0/24</cidrBlock>
            <cidrBlockAssociationSet>
                <item>
                    <cidrBlock>10.0.1.0/24</cidrBlock>
                    <associationId>vpc-cidr-assoc-043f572c17EXAMPLE</associationId>
                    <cidrBlockState>
                        <state>associated</state>
                    </cidrBlockState>
                </item>
            </cidrBlockAssociationSet>
            <dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>MyVPC</value>
                </item>
            </tagSet>
            <instanceTenancy>default</instanceTenancy>
            <isDefault>false</isDefault>
        </item>
        <item>
            <vpcId>vpc-0ee975135dEXAMPLE</vpcId>
            <ownerId>111122223333</ownerId>
            <state>available</state>
            <cidrBlock>10.0.0.0/16</cidrBlock>
            <cidrBlockAssociationSet>
                <item>
                    <cidrBlock>10.0.0.0/16</cidrBlock>
                    <associationId>vpc-cidr-assoc-067c3a0a1fEXAMPLE</associationId>
                    <cidrBlockState>
                        <state>associated</state>
                    </cidrBlockState>
                </item>
            </cidrBlockAssociationSet>
            <dhcpOptionsId>dopt-f30d649a</dhcpOptionsId>
```

```
            <instanceTenancy>default</instanceTenancy>
            <isDefault>false</isDefault>
        </item>
        <item>
            <vpcId>vpc-06e4ab6c6cEXAMPLE</vpcId>
            <ownerId>123456789012</ownerId>
            <state>available</state>
            <cidrBlock>10.0.0.0/16</cidrBlock>
            <cidrBlockAssociationSet>
                <item>
                    <cidrBlock>10.0.0.0/16</cidrBlock>
                    <associationId>vpc-cidr-assoc-00b17b4eddEXAMPLE</associationId>
                    <cidrBlockState>
                        <state>associated</state>
                    </cidrBlockState>
                </item>
            </cidrBlockAssociationSet>
            <dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>Shared VPC</value>
                </item>
            </tagSet>
            <instanceTenancy>default</instanceTenancy>
            <isDefault>false</isDefault>
        </item>
    </vpcSet>
</DescribeVpcsResponse>
```

## Example 2

This example uses filters to describe any VPC you own that uses the set of DHCP options with the ID `dopt-7a8b9c2d` or `dopt-2b2a3d3c` and whose state is `available`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcs
&Filter.1.Name=dhcp-options-id
&Filter.1.Value.1=dopt-7a8b9c2d
&Filter.1.Value.2=dopt-2b2a3d3c
&Filter.2.Name=state
&Filter.2.Value.1=available
```

```
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpnConcentrators

Describes one or more of your VPN concentrators.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to limit the results.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 200. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**VpnConcentratorId.N**

One or more VPN concentrator IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**vpnConcentratorSet**

Information about the VPN concentrators.

Type: Array of VpnConcentrator objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes all VPN Concentrators.

### Sample Request

```
https://ec2.us-east-1.amazonaws.com/?Version=2016-11-15&Action=DescribeVpnConcentrators
```

### Sample Response

```
<DescribeVpnConcentratorsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>e1d4832f-cef7-4809-b9d4-3e54e50aff7a</requestId>
    <vpnConcentratorSet>
        <item>
            <state>available</state>
            <tagSet />
            <transitGatewayAttachmentId>tgw-attach-04a445da95a6814cc</
transitGatewayAttachmentId>
            <transitGatewayId>tgw-0eae06e326d7c27d8</transitGatewayId>
            <type>ipsec.1</type>
            <vpnConcentratorId>vcn-0767cb7521c5c4945</vpnConcentratorId>
        </item>
    </vpnConcentratorSet>
</DescribeVpnConcentratorsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpnConnections

Describes one or more of your VPN connections.

For more information, see AWS Site-to-Site VPN in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `customer-gateway-configuration` - The configuration information for the customer gateway.
- `customer-gateway-id` - The ID of a customer gateway associated with the VPN connection.
- `state` - The state of the VPN connection (`pending` | `available` | `deleting` | `deleted`).
- `option.static-routes-only` - Indicates whether the connection has static routes only. Used for devices that do not support Border Gateway Protocol (BGP).
- `route.destination-cidr-block` - The destination CIDR block. This corresponds to the subnet used in a customer data center.
- `bgp-asn` - The BGP Autonomous System Number (ASN) associated with a BGP device.
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `type` - The type of VPN connection. Currently the only supported type is `ipsec.1`.
- `vpn-connection-id` - The ID of the VPN connection.
- `vpn-gateway-id` - The ID of a virtual private gateway associated with the VPN connection.
- `transit-gateway-id` - The ID of a transit gateway associated with the VPN connection.

Type: Array of Filter objects

Required: No

**VpnConnectionId.N**

One or more VPN connection IDs.

Default: Describes your VPN connections.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpnConnectionSet**

Information about one or more VPN connections.

Type: Array of VpnConnection objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example describes the specified VPN connection. The response includes the customer gateway device configuration information. Because it's a long set of information, we haven't displayed it here. To see an example of the configuration information, see the Your customer gateway device.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&VpnConnectionId.1=vpn-1122334455aabbccd
&AUTHPARAMS
```

### Sample Response

```
<DescribeVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>6791f4b8-5717-4272-aed2-faa18example</requestId>
    <vpnConnectionSet>
        <item>
            <vpnConnectionId>vpn-1122334455aabbccd</vpnConnectionId>
            <state>available</state>
            <customerGatewayConfiguration>..Customer gateway configuration data in
 escaped XML format...</customerGatewayConfiguration>
            <type>ipsec.1</type>
            <customerGatewayId>cgw-01234567abcde1234</customerGatewayId>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>CanadaVPN</value>
                </item>
            </tagSet>
            <vgwTelemetry>
                <item>
                    <outsideIpAddress>203.0.113.3</outsideIpAddress>
                    <status>DOWN</status>
                    <lastStatusChange>2020-07-29T10:35:11.000Z</lastStatusChange>
                    <statusMessage></statusMessage>
                    <acceptedRouteCount>0</acceptedRouteCount>
                </item>
                <item>
                    <outsideIpAddress>203.0.113.5</outsideIpAddress>
```

```
                    <status>UP</status>
                    <lastStatusChange>2020-09-02T09:09:33.000Z</lastStatusChange>
                    <statusMessage></statusMessage>
                    <acceptedRouteCount>0</acceptedRouteCount>
                </item>
            </vgwTelemetry>
            <transitGatewayId>tgw-00112233445566aab</transitGatewayId>
            <options>
                <enableAcceleration>false</enableAcceleration>
                <staticRoutesOnly>true</staticRoutesOnly>
                <localIpv4NetworkCidr>0.0.0.0/0</localIpv4NetworkCidr>
                <remoteIpv4NetworkCidr>0.0.0.0/0</remoteIpv4NetworkCidr>
                <tunnelInsideIpVersion>ipv4</tunnelInsideIpVersion>
            </options>
            <routes/>
            <category>VPN</category>
        </item>
    </vpnConnectionSet>
</DescribeVpnConnectionsResponse>
```

### Example 2

This example describes any VPN connection you own that is associated with the customer gateway with ID cgw-b4dc3961, and whose state is either `pending` or `available`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&Filter.1.Name=customer-gateway-id
&Filter.1.Value.1=cgw-b4dc3961
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DescribeVpnGateways

Describes one or more of your virtual private gateways.

For more information, see AWS Site-to-Site VPN in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `amazon-side-asn` - The Autonomous System Number (ASN) for the Amazon side of the gateway.
- `attachment.state` - The current state of the attachment between the gateway and the VPC (`attaching` | `attached` | `detaching` | `detached`).
- `attachment.vpc-id` - The ID of an attached VPC.
- `availability-zone` - The Availability Zone for the virtual private gateway (if applicable).
- `state` - The state of the virtual private gateway (`pending` | `available` | `deleting` | `deleted`).
- `tag`:<key> - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

- `type` - The type of virtual private gateway. Currently the only supported type is `ipsec.1`.
- `vpn-gateway-id` - The ID of the virtual private gateway.

Type: Array of Filter objects

Required: No

**VpnGatewayId.N**

One or more virtual private gateway IDs.

Default: Describes all your virtual private gateways.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpnGatewaySet**

Information about one or more virtual private gateways.

Type: Array of VpnGateway objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example describes the specified virtual private gateway.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&VpnGatewayId.1=vgw-8db04f81
&AUTHPARAMS
```

### Sample Response

```
<DescribeVpnGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpnGatewaySet>
        <item>
            <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
            <state>available</state>
            <type>ipsec.1</type>
            <attachments>
                <item>
                    <vpcId>vpc-4c090c2a</vpcId>
                    <state>attached</state>
                </item>
            </attachments>
            <amazonSideAsn>65001</amazonSideAsn>
            <tagSet>
                <item>
                    <key>Name</key>
                    <value>NYOffice</value>
                </item>
            </tagSet>
        </item>
    </vpnGatewaySet>
</DescribeVpnGatewaysResponse>
```

## Example 2

This example uses filters to describe any virtual private gateway you own whose state is either `pending` or `available`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&Filter.1.Name=state
&Filter.1.Value.1=pending
```

```
&Filter.1.Value.2=available
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DetachClassicLinkVpc

> **Note**
>
> This action is deprecated.

Unlinks (detaches) a linked EC2-Classic instance from a VPC. After the instance has been unlinked, the VPC security groups are no longer associated with it. An instance is automatically unlinked from a VPC when it's stopped.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance to unlink from the VPC.

Type: String

Required: Yes

**VpcId**

The ID of the VPC to which the instance is linked.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DetachImageWatermark

Removes a watermark from the specified AMI. This is an idempotent operation. It succeeds even if the watermark does not exist on the image.

Removing a watermark from an image does not affect derivative images that already carry the watermark.

Only the AMI owner can detach watermarks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

**WatermarkKey**

The watermark key to remove, in `accountId:watermarkName` format (for example, `123456789012:approvedAmi`).

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DetachInternetGateway

Detaches an internet gateway from a VPC, disabling connectivity between the internet and the VPC. The VPC must not contain any running instances with Elastic IP addresses or public IPv4 addresses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InternetGatewayId**

The ID of the internet gateway.

Type: String

Required: Yes

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

The example detaches the specified internet gateway from the specified VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DetachInternetGateway
&InternetGatewayId=igw-eaad4883
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

#### Sample Response

```
<DetachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DetachInternetGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DetachNetworkInterface

Detaches a network interface from an instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AttachmentId**

The ID of the attachment.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Force**

Specifies whether to force a detachment.

> **Note**
>
> - Use the `Force` parameter only as a last resort to detach a network interface from a failed instance.
> - If you use the `Force` parameter to detach a network interface, you might not be able to attach a different network interface to the same index on the instance without first stopping and starting the instance.
> - If you force the detachment of a network interface, the instance metadata might not get updated. This means that the attributes associated with the detached network

interface might still be visible. The instance metadata will get updated when you stop and start the instance.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example detaches the specified elastic network interface (ENI).

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DetachNetworkInterface
&AttachmentId=eni-attach-d94b09b0
&AUTHPARAMS
```

### Sample Response

```
<DetachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>ce540707-0635-46bc-97da-33a8a362a0e8</requestId>
    <return>true</return>
</DetachNetworkInterfaceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DetachVerifiedAccessTrustProvider

Detaches the specified AWS Verified Access trust provider from the specified AWS Verified Access instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessInstanceId**

The ID of the Verified Access instance.

Type: String

Required: Yes

**VerifiedAccessTrustProviderId**

The ID of the Verified Access trust provider.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessInstance**

Details about the Verified Access instance.

Type: VerifiedAccessInstance object

**verifiedAccessTrustProvider**

Details about the Verified Access trust provider.

Type: VerifiedAccessTrustProvider object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DetachVolume

Detaches an EBS volume from an instance. Make sure to unmount any file systems on the device within your operating system before detaching the volume. Failure to do so can result in the volume becoming stuck in the `busy` state while detaching. If this happens, detachment can be delayed indefinitely until you unmount the volume, force detachment, reboot the instance, or all three. If an EBS volume is the root device of an instance, it can't be detached while the instance is running. To detach the root volume, stop the instance first.

When a volume with an AWS Marketplace product code is detached from an instance, the product code is no longer associated with the instance.

You can't detach or force detach volumes that are attached to AWS-managed resources. Attempting to do this results in the `UnsupportedOperationException` exception.

For more information, see Detach an Amazon EBS volume in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Device**

The device name.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Force**

Forces detachment if the previous detachment attempt did not occur cleanly (for example, logging into an instance, unmounting the volume, and detaching normally). This option can

lead to data loss or a corrupted file system. Use this option only as a last resort to detach a volume from a failed instance. The instance won't have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance. If you are detaching a Multi-Attach enabled volume, you must specify an instance ID.

Type: String

Required: No

**VolumeId**

The ID of the volume.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**associatedResource**

The ARN of the AWS-managed resource to which the volume is attached.

Type: String

**attachTime**

The time stamp when the attachment initiated.

Type: Timestamp

**deleteOnTermination**

Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

**device**

The device name.

If the volume is attached to an AWS-managed resource, this parameter returns `null`.

Type: String

**ebsCardIndex**

The index of the EBS card. Some instance types support multiple EBS cards. The default EBS card index is 0.

Type: Integer

**instanceId**

The ID of the instance.

If the volume is attached to an AWS-managed resource, this parameter returns `null`.

Type: String

**instanceOwningService**

The service principal of the AWS service that owns the underlying resource to which the volume is attached.

This parameter is returned only for volumes that are attached to AWS-managed resources.

Type: String

**requestId**

The ID of the request.

Type: String

**status**

The attachment state of the volume.

Type: String

Valid Values: `attaching | attached | detaching | detached | busy`

**volumeId**

The ID of the volume.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example detaches volume `vol-1234567890abcdef0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DetachVolume
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<DetachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <volumeId>vol-1234567890abcdef0</volumeId>
   <instanceId>i-1234567890abcdef0</instanceId>
   <device>/dev/sdh</device>
   <status>detaching</status>
   <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</DetachVolumeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DetachVpnGateway

Detaches a virtual private gateway from a VPC. You do this if you're planning to turn off the VPC and not use it anymore. You can confirm a virtual private gateway has been completely detached from a VPC by describing the virtual private gateway (any attachments to the virtual private gateway are also described).

You must wait for the attachment's state to switch to `detached` before you can delete the VPC or attach a different VPC to the virtual private gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

**VpnGatewayId**

The ID of the virtual private gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example detaches the specified virtual private gateway from the specified VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DetachVpnGateway
&VpnGatewayId=vgw-8db04f81
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<DetachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</DetachVpnGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableAddressTransfer

Disables Elastic IP address transfer. For more information, see Transfer Elastic IP addresses in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationId**

The allocation ID of an Elastic IP address.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**addressTransfer**

An Elastic IP address transfer.

Type: AddressTransfer object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableAllowedImagesSettings

Disables Allowed AMIs for your account in the specified AWS Region. When set to `disabled`, the image criteria in your Allowed AMIs settings do not apply, and no restrictions are placed on AMI discoverability or usage. Users in your account can launch instances using any public AMI or AMI shared with your account.

> **Note**
>
> The Allowed AMIs feature does not restrict the AMIs owned by your account. Regardless of the criteria you set, the AMIs created by your account will always be discoverable and usable by users in your account.

For more information, see Control the discovery and use of AMIs in Amazon EC2 with Allowed AMIs in *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**allowedImagesSettingsState**

Returns `disabled` if the request succeeds; otherwise, it returns an error.

Type: String

Valid Values: `disabled`

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableAwsNetworkPerformanceMetricSubscription

Disables Infrastructure Performance metric subscriptions.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Destination**

The target Region or Availability Zone that the metric subscription is disabled for. For example, `eu-north-1`.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Metric**

The metric used for the disabled subscription.

Type: String

Valid Values: `aggregate-latency`

Required: No

**Source**

The source Region or Availability Zone that the metric subscription is disabled for. For example, `us-east-1`.

Type: String

Required: No

**Statistic**

The statistic used for the disabled subscription.

Type: String

Valid Values: p50

Required: No

## Response Elements

The following elements are returned by the service.

**output**

Indicates whether the unsubscribe action was successful.

Type: Boolean

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableCapacityManager

Disables EC2 Capacity Manager for your account. This stops data ingestion and removes access to capacity analytics and optimization recommendations. Previously collected data is retained but no new data will be processed.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**capacityManagerStatus**

The current status of Capacity Manager after the disable operation.

Type: String

Valid Values: `enabled | disabled`

**organizationsAccess**

Indicates whether Organizations access is enabled. This will be `false` after disabling Capacity Manager.

Type: Boolean

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example disables Capacity Manager for your account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisableCapacityManager
&AUTHPARAMS
```

#### Sample Response

```
<DisableCapacityManagerResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <capacityManagerStatus>disabled</capacityManagerStatus>
    <organizationsAccess>false</organizationsAccess>
</DisableCapacityManagerResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableEbsEncryptionByDefault

Disables EBS encryption by default for your account in the current Region.

After you disable encryption by default, you can still create encrypted volumes by enabling encryption when you create each volume.

Disabling encryption by default does not change the encryption status of your existing volumes.

For more information, see Amazon EBS encryption in the *Amazon EBS User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**ebsEncryptionByDefault**

The updated status of encryption by default.

Type: Boolean

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableFastLaunch

Discontinue Windows fast launch for a Windows AMI, and clean up existing pre-provisioned snapshots. After you disable Windows fast launch, the AMI uses the standard launch process for each new instance. Amazon EC2 must remove all pre-provisioned snapshots before you can enable Windows fast launch again.

> **Note**
>
> You can only change these settings for Windows AMIs that you own or that have been shared with you.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Force**

Forces the image settings to turn off Windows fast launch for your Windows AMI. This parameter overrides any errors that are encountered while cleaning up resources in your account.

Type: Boolean

Required: No

**ImageId**

Specify the ID of the image for which to disable Windows fast launch.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**imageId**

The ID of the image for which Windows fast launch was disabled.

Type: String

**launchTemplate**

The launch template that was used to launch Windows instances from pre-provisioned snapshots.

Type: FastLaunchLaunchTemplateSpecificationResponse object

**maxParallelLaunches**

The maximum number of instances that Amazon EC2 can launch at the same time to create pre-provisioned snapshots for Windows fast launch.

Type: Integer

**ownerId**

The owner of the Windows AMI for which Windows fast launch was disabled.

Type: String

**requestId**

The ID of the request.

Type: String

**resourceType**

The pre-provisioning resource type that must be cleaned after turning off Windows fast launch for the Windows AMI. Supported values include: `snapshot`.

Type: String

Valid Values: `snapshot`

**snapshotConfiguration**

Parameters that were used for Windows fast launch for the Windows AMI before Windows fast launch was disabled. This informs the clean-up process.

Type: FastLaunchSnapshotConfigurationResponse object

**state**

The current state of Windows fast launch for the specified Windows AMI.

Type: String

Valid Values: `enabling | enabling-failed | enabled | enabled-failed | disabling | disabling-failed`

**stateTransitionReason**

The reason that the state changed for Windows fast launch for the Windows AMI.

Type: String

**stateTransitionTime**

The time that the state changed for Windows fast launch for the Windows AMI.

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableFastSnapshotRestores

Disables fast snapshot restores for the specified snapshots in the specified Availability Zones.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZone.N**

One or more Availability Zones. For example, `us-east-2a`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: Array of strings

Required: No

**AvailabilityZoneId.N**

One or more Availability Zone IDs. For example, `use2-az1`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SourceSnapshotId.N**

The IDs of one or more snapshots. For example, `snap-1234567890abcdef0`.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**successful**

Information about the snapshots for which fast snapshot restores were successfully disabled.

Type: Array of DisableFastSnapshotRestoreSuccessItem objects

**unsuccessful**

Information about the snapshots for which fast snapshot restores could not be disabled.

Type: Array of DisableFastSnapshotRestoreErrorItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableImage

Sets the AMI state to `disabled` and removes all launch permissions from the AMI. A disabled AMI can't be used for instance launches.

A disabled AMI can't be shared. If an AMI was public or previously shared, it is made private. If an AMI was shared with an AWS account, organization, or Organizational Unit, they lose access to the disabled AMI.

A disabled AMI does not appear in DescribeImages API calls by default.

Only the AMI owner can disable an AMI.

You can re-enable a disabled AMI using EnableImage.

For more information, see Disable an AMI in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example disables the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisableImage
&ImageId=ami-0123456789EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DisableImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>11aabb229-4eac-35bd-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisableImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableImageBlockPublicAccess

Disables *block public access for AMIs* at the account level in the specified AWS Region. This removes the *block public access* restriction from your account. With the restriction removed, you can publicly share your AMIs in the specified AWS Region.

For more information, see Block public access to your AMIs in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**imageBlockPublicAccessState**

Returns `unblocked` if the request succeeds; otherwise, it returns an error.

Type: String

Valid Values: `unblocked`

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example disables *block public access for AMIs* at the account level in the specified Region to allow users in your account to publicly share your AMIs in the specified Region.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisableImageBlockPublicAccess
&Region=us-east-1
&AUTHPARAMS
```

#### Sample Response

```
<DisableImageBlockPublicAccessResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>11aabb229-4eac-35bd-99ed-be587EXAMPLE</requestId>
  <return>unblocked</return>
</DisableImageBlockPublicAccessResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableImageDeprecation

Cancels the deprecation of the specified AMI.

For more information, see Deprecate an Amazon EC2 AMI in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example cancels the planned deprecation of the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisableImageDeprecation
&ImageId=ami-0123456789EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DisableImageDeprecationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>11aabb229-4eac-35bd-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisableImageDeprecationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableImageDeregistrationProtection

Disables deregistration protection for an AMI. When deregistration protection is disabled, the AMI can be deregistered.

If you chose to include a 24-hour cooldown period when you enabled deregistration protection for the AMI, then, when you disable deregistration protection, you won't immediately be able to deregister the AMI.

For more information, see Protect an Amazon EC2 AMI from deregistration in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableInstanceSqlHaStandbyDetections

Disable Amazon EC2 instances running in an SQL Server High Availability cluster from SQL Server High Availability instance standby detection monitoring. Once disabled, AWS no longer monitors the metadata for the instances to determine whether they are active or standby nodes in the SQL Server High Availability cluster.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId.N**

The IDs of the instances to disable from SQL Server High Availability standby detection monitoring.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 30 items.

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceSet**

Information about the instances that were disabled from SQL Server High Availability standby detection monitoring.

Type: Array of RegisteredInstance objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableIpamOrganizationAdminAccount

Disable the IPAM account. For more information, see Enable integration with AWS Organizations in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DelegatedAdminAccountId**

The AWS Organizations member account ID that you want to disable as IPAM account.

Type: String

Required: Yes

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**success**

The result of disabling the IPAM account.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableIpamPolicy

Disables an IPAM policy.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPolicyId**

The ID of the IPAM policy to disable.

Type: String

Required: Yes

**OrganizationTargetId**

The ID of the AWS Organizations target for which to disable the IPAM policy. This parameter is required only when IPAM is integrated with AWS Organizations. When IPAM is not integrated with AWS Organizations, omit this parameter and the policy will be disabled for the current account.

A target can be an individual AWS account or an entity within an AWS Organization to which an IPAM policy can be applied.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns true if the IPAM policy was successfully disabled.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DisableRouteServerPropagation

Disables route propagation from a route server to a specified route table.

When enabled, route server propagation installs the routes in the FIB on the route table you've specified. Route server supports IPv4 and IPv6 route propagation.

Amazon VPC Route Server simplifies routing for traffic between workloads that are deployed within a VPC and its internet gateways. With this feature, VPC Route Server dynamically updates VPC and internet gateway route tables with your preferred IPv4 or IPv6 routes to achieve routing fault tolerance for those workloads. This enables you to automatically reroute traffic within a VPC, which increases the manageability of VPC routing and interoperability with third-party workloads.

Route server supports the follow route table types:

- VPC route tables not associated with subnets
- Subnet route tables
- Internet gateway route tables

Route server does not support route tables associated with virtual private gateways. To propagate routes into a transit gateway route table, use Transit Gateway Connect.

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteServerId**

The ID of the route server for which to disable propagation.

Type: String

Required: Yes

**RouteTableId**

The ID of the route table for which to disable route server propagation.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServerPropagation**

Information about the disabled route server propagation.

Type: RouteServerPropagation object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableSerialConsoleAccess

Disables access to the EC2 serial console of all instances for your account. By default, access to the EC2 serial console is disabled for your account. For more information, see Manage account access to the EC2 serial console in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**serialConsoleAccessEnabled**

If `true`, access to the EC2 serial console of all instances is enabled for your account. If `false`, access to the EC2 serial console of all instances is disabled for your account.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableSnapshotBlockPublicAccess

Disables the *block public access for snapshots* setting at the account level for the specified AWS Region. After you disable block public access for snapshots in a Region, users can publicly share snapshots in that Region.

**Important**

Enabling block public access for snapshots in *block-all-sharing* mode does not change the permissions for snapshots that are already publicly shared. Instead, it prevents these snapshots from be publicly visible and publicly accessible. Therefore, the attributes for these snapshots still indicate that they are publicly shared, even though they are not publicly available.
If you disable block public access , these snapshots will become publicly available again.

For more information, see Block public access for snapshots in the *Amazon EBS User Guide* .

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**state**

Returns `unblocked` if the request succeeds.

Type: String

Valid Values: `block-all-sharing | block-new-sharing | unblocked`

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableTransitGatewayRouteTablePropagation

Disables the specified resource attachment from propagating routes to the specified propagation route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

**TransitGatewayRouteTableAnnouncementId**

The ID of the route table announcement.

Type: String

Required: No

**TransitGatewayRouteTableId**

The ID of the propagation route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**propagation**

Information about route propagation.

Type: TransitGatewayPropagation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableVgwRoutePropagation

Disables a virtual private gateway (VGW) from propagating routes to a specified route table of a VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GatewayId**

The ID of the virtual private gateway.

Type: String

Required: Yes

**RouteTableId**

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example disables the virtual private gateway `vgw-d8e09e8a` from automatically propagating routes to the route table with ID `rtb-c98a35a0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisableVgwRoutePropagationResponse
&RouteTableId=rtb-c98a35a0
&GatewayId=vgw-d8e09e8a
&AUTHPARAMS
```

#### Sample Response

```
<DisableVgwRoutePropagationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
    <return>true</return>
</DisableVgwRoutePropagationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableVpcClassicLink

> **Note**
>
> This action is deprecated.

Disables ClassicLink for a VPC. You cannot disable ClassicLink for a VPC that has EC2-Classic instances linked to it.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisableVpcClassicLinkDnsSupport

> **Note**
>
> This action is deprecated.

Disables ClassicLink DNS support for a VPC. If disabled, DNS hostnames resolve to public IP addresses when addressed between a linked EC2-Classic instance and instances in the VPC to which it's linked.

You must specify a VPC ID in the request.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**VpcId**

The ID of the VPC.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example disables ClassicLink DNS support for vpc-8888888.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisableVpcClassicLinkDnsSupport
&VpcId=vpc-8888888
&AUTHPARAMS
```

#### Sample Response

```
<DisableVpcClassicLinkDnsSupportResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisableVpcClassicLinkDnsSupportResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# DisassociateAddress

Disassociates an Elastic IP address from the instance or network interface it's associated with.

This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn't return an error.

An address cannot be disassociated if the all of the following conditions are met:

- Network interface has a `publicDualStackDnsName` publicDnsName
- Public IPv4 address is the primary public IPv4 address
- Network interface only has one remaining public IPv4 address

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId**

The association ID. This parameter is required.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PublicIp**

Deprecated.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example disassociates the specified Elastic IP address from the instance to which it is associated.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateAddress
&AssociationId=eipassoc-aa7486c3
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateCapacityReservationBillingOwner

Cancels a pending request to assign billing of the unused capacity of a Capacity Reservation to a consumer account, or revokes a request that has already been accepted. For more information, see Billing assignment for shared Amazon EC2 Capacity Reservations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**UnusedReservationBillingOwnerId**

The ID of the consumer account to which the request was sent.

Type: String

Length Constraints: Fixed length of 12.

Pattern: `[0-9]{12}`

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateClientVpnTargetNetwork

Disassociates a target network from the specified Client VPN endpoint. When you disassociate the last target network from a Client VPN, the following happens:

- The route that was automatically added for the VPC is deleted
- All active client connections are terminated
- New client connections are disallowed
- The Client VPN endpoint's status changes to `pending-associate`

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId**

The ID of the target network association.

Type: String

Required: Yes

**ClientVpnEndpointId**

The ID of the Client VPN endpoint from which to disassociate the target network.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**associationId**

The ID of the target network association.

Type: String

**requestId**

The ID of the request.

Type: String

**status**

The current state of the target network association.

Type: AssociationStatus object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example disassociates a target network from a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateClientVpnTargetNetwork
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&AssociationId=cvpn-assoc-0bc4bd8cecEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DisassociateClientVpnTargetNetworkResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
```

```
    <requestId>61312648-93ec-4a86-a1d1-098c9EXAMPLE</requestId>
    <status>
        <code>disassociating</code>
    </status>
    <associationId>cvpn-assoc-0bc4bd8cecEXAMPLE</associationId>
</DisassociateClientVpnTargetNetworkResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateEnclaveCertificateIamRole

Disassociates an IAM role from an AWS Certificate Manager (ACM) certificate. Disassociating an IAM role from an ACM certificate removes the Amazon S3 object that contains the certificate, certificate chain, and encrypted private key from the Amazon S3 bucket. It also revokes the IAM role's permission to use the KMS key used to encrypt the private key. This effectively revokes the role's permission to use the certificate.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CertificateArn**

The ARN of the ACM certificate from which to disassociate the IAM role.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RoleArn**

The ARN of the IAM role to disassociate.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateIamInstanceProfile

Disassociates an IAM instance profile from a running or stopped instance.

Use DescribeIamInstanceProfileAssociations to get the association ID.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId**

The ID of the IAM instance profile association.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**iamInstanceProfileAssociation**

Information about the IAM instance profile association.

Type: IamInstanceProfileAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example disassociates the specified IAM instance profile association.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateIamInstanceProfile
&AssociationId=iip-assoc-08049da59357d598c
&AUTHPARAMS
```

### Sample Response

```
<DisassociateIamInstanceProfileResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>4840f938-fc84-4791-8ae5-example</requestId>
    <iamInstanceProfileAssociation>
        <associationId>iip-assoc-08049da59357d598c</associationId>
        <iamInstanceProfile>
            <arn>arn:aws:iam::123456789012:instance-profile/AdminProfile</arn>
            <id>AIPAI5IVIHMFFYY2DKV5Y</id>
        </iamInstanceProfile>
        <instanceId>i-1234567890abcdef0</instanceId>
        <state>disassociating</state>
    </iamInstanceProfileAssociation>
</DisassociateIamInstanceProfileResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateInstanceEventWindow

Disassociates one or more targets from an event window.

For more information, see Define event windows for scheduled events in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationTarget**

One or more targets to disassociate from the specified event window.

Type: InstanceEventWindowDisassociationRequest object

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceEventWindowId**

The ID of the event window.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceEventWindow**

Information about the event window.

Type: InstanceEventWindow object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateIpamByoasn

Remove the association between your Autonomous System Number (ASN) and your BYOIP CIDR. You may want to use this action to disassociate an ASN from a CIDR or if you want to swap ASNs. For more information, see Tutorial: Bring your ASN to IPAM in the *Amazon VPC IPAM guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Asn**

A public 2-byte or 4-byte ASN.

Type: String

Required: Yes

**Cidr**

A BYOIP CIDR.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**asnAssociation**

An ASN and BYOIP CIDR association.

Type: AsnAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateIpamResourceDiscovery

Disassociates a resource discovery from an Amazon VPC IPAM. A resource discovery is an IPAM component that enables IPAM to manage and monitor resources that belong to the owning account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamResourceDiscoveryAssociationId**

A resource discovery association ID.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamResourceDiscoveryAssociation**

A resource discovery association.

Type: IpamResourceDiscoveryAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateNatGatewayAddress

Disassociates secondary Elastic IP addresses (EIPs) from a public NAT gateway. You cannot disassociate your primary EIP. For more information, see Edit secondary IP address associations in the *Amazon VPC User Guide*.

While disassociating is in progress, you cannot associate/disassociate additional EIPs while the connections are being drained. You are, however, allowed to delete the NAT gateway.

An EIP is released only at the end of MaxDrainDurationSeconds. It stays associated and supports the existing connections but does not support any new connections (new connections are distributed across the remaining associated EIPs). As the existing connections drain out, the EIPs (and the corresponding private IP addresses mapped to them) are released.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId.N**

The association IDs of EIPs that have been associated with the NAT gateway.

Type: Array of strings

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxDrainDurationSeconds**

The maximum amount of time to wait (in seconds) before forcibly releasing the IP addresses if connections are still in progress. Default value is 350 seconds.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 4000.

Required: No

**NatGatewayId**

The ID of the NAT gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**natGatewayAddressSet**

Information about the NAT gateway IP addresses.

Type: Array of NatGatewayAddress objects

**natGatewayId**

The ID of the NAT gateway.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateRouteServer

Disassociates a route server from a VPC.

A route server association is the connection established between a route server and a VPC.

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteServerId**

The ID of the route server to disassociate.

Type: String

Required: Yes

**VpcId**

The ID of the VPC to disassociate from the route server.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServerAssociation**

Information about the disassociated route server.

Type: RouteServerAssociation object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateRouteTable

Disassociates a subnet or gateway from a route table.

After you perform this action, the subnet no longer uses the routes in the route table. Instead, it uses the routes in the VPC's main route table. For more information about route tables, see Route tables in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId**

The association ID representing the current association between the route table and subnet or gateway.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example disassociates the specified route table from the subnet it's associated to.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateRouteTable
&AssociationId=rtbassoc-0531ae3257956bdfb
&AUTHPARAMS
```

#### Sample Response

```
<DisassociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</DisassociateRouteTableResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateSecurityGroupVpc

Disassociates a security group from a VPC. You cannot disassociate the security group if any Elastic network interfaces in the associated VPC are still associated with the security group. Note that the disassociation is asynchronous and you can check the status of the request with DescribeSecurityGroupVpcAssociations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupId**

A security group ID.

Type: String

Required: Yes

**VpcId**

A VPC ID.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**state**

The state of the disassociation.

Type: String

Valid Values: `associating | associated | association-failed | disassociating | disassociated | disassociation-failed`

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateSubnetCidrBlock

Disassociates a CIDR block from a subnet. Currently, you can disassociate an IPv6 CIDR block only. You must detach or delete all gateways and resources that are associated with the CIDR block before you can disassociate it.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId**

The association ID for the CIDR block.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipv6CidrBlockAssociation**

Information about the IPv6 CIDR block association.

Type: SubnetIpv6CidrBlockAssociation object

**requestId**

The ID of the request.

Type: String

**subnetId**

The ID of the subnet.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example disassociates the IPv6 CIDR block from the subnet.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateSubnetCidrBlock
&AssociationId=subnet-cidr-assoc-3aa54053
&AUTHPARAMS
```

#### Sample Response

```
<DisassociateSubnetCidrBlockResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <subnetId>subnet-5f46ec3b</subnetId>
    <ipv6CidrBlockAssociation>
        <ipv6CidrBlock>2001:db8:1234:1a00::/64</ipv6CidrBlock>
        <ipv6CidrBlockState>
            <state>disassociating</state>
        </ipv6CidrBlockState>
        <associationId>subnet-cidr-assoc-3aa54053</associationId>
    </ipv6CidrBlockAssociation>
</DisassociateSubnetCidrBlockResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateTransitGatewayMulticastDomain

Disassociates the specified subnets from the transit gateway multicast domain.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SubnetIds.N**

The IDs of the subnets;

Type: Array of strings

Required: Yes

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: Yes

**TransitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**associations**

Information about the association.

Type: TransitGatewayMulticastDomainAssociations object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example disassociates the subnet `subnet-000de86e3bEXAMPLE` from the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateTransitGatewayMulticastDomain
&TransitGatewayAttachmentId=tgw-attach-070e571cd1EXAMPLE
&SubnetId=subnet-000de86e3bEXAMPLE
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DisassociateTransitGatewayMulticastDomainResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>0008db4a-b98a-46f7-b047-e262aEXAMPLE</requestId>
    <associations>
```

```
        <resourceId>vpc-7EXAMPLE</resourceId>
        <resourceType>vpc</resourceType>
        <subnets>
            <item>
                <state>disassociating</state>
                <subnetId>subnet-000de86e3bEXAMPLE</subnetId>
            </item>
        </subnets>
        <transitGatewayAttachmentId>tgw-attach-070e571cd1EXAMPLE</
transitGatewayAttachmentId>
        <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
    </associations>
</DisassociateTransitGatewayMulticastDomainResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateTransitGatewayPolicyTable

Removes the association between an an attachment and a policy table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the transit gateway attachment to disassociate from the policy table.

Type: String

Required: Yes

**TransitGatewayPolicyTableId**

The ID of the disassociated policy table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**association**

Returns details about the transit gateway policy table disassociation.

Type: TransitGatewayPolicyTableAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateTransitGatewayRouteTable

Disassociates a resource attachment from a transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: Yes

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**association**

Information about the association.

Type: TransitGatewayAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateTrunkInterface

Removes an association between a branch network interface with a trunk network interface.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId**

The ID of the association

Type: String

Required: Yes

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# DisassociateVpcCidrBlock

Disassociates a CIDR block from a VPC. To disassociate the CIDR block, you must specify its association ID. You can get the association ID by using DescribeVpcs. You must detach or delete all gateways and resources that are associated with the CIDR block before you can disassociate it.

You cannot disassociate the CIDR block with which you originally created the VPC (the primary CIDR block).

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId**

The association ID for the CIDR block.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**cidrBlockAssociation**

Information about the IPv4 CIDR block association.

Type: VpcCidrBlockAssociation object

**ipv6CidrBlockAssociation**

Information about the IPv6 CIDR block association.

Type: VpcIpv6CidrBlockAssociation object

**requestId**

The ID of the request.

Type: String

**vpcId**

The ID of the VPC.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example disassociates the IPv6 CIDR block from the VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateVpcCidrBlock
&AssociationId=vpc-cidr-assoc-e2a5408b
&AUTHPARAMS
```

#### Sample Response

```
<DisassociateVpcCidrBlockResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <ipv6CidrBlockAssociation>
        <ipv6CidrBlock>2001:db8:1234:1a00::/56</ipv6CidrBlock>
        <ipv6CidrBlockState>
            <state>disassociating</state>
        </ipv6CidrBlockState>
        <associationId>vpc-cidr-assoc-e2a5408b</associationId>
    </ipv6CidrBlockAssociation>
    <vpcId>vpc-a034d6c4</vpcId>
</DisassociateVpcCidrBlockResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableAddressTransfer

Enables Elastic IP address transfer. For more information, see Transfer Elastic IP addresses in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationId**

The allocation ID of an Elastic IP address.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransferAccountId**

The ID of the account that you want to transfer the Elastic IP address to.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**addressTransfer**

An Elastic IP address transfer.

Type: AddressTransfer object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableAllowedImagesSettings

Enables Allowed AMIs for your account in the specified AWS Region. Two values are accepted:

- `enabled`: The image criteria in your Allowed AMIs settings are applied. As a result, only AMIs matching these criteria are discoverable and can be used by your account to launch instances.
- `audit-mode`: The image criteria in your Allowed AMIs settings are not applied. No restrictions are placed on AMI discoverability or usage. Users in your account can launch instances using any public AMI or AMI shared with your account.

  The purpose of `audit-mode` is to indicate which AMIs will be affected when Allowed AMIs is `enabled`. In `audit-mode`, each AMI displays either `"ImageAllowed": true` or `"ImageAllowed": false` to indicate whether the AMI will be discoverable and available to users in the account when Allowed AMIs is enabled.

> **Note**
>
> The Allowed AMIs feature does not restrict the AMIs owned by your account. Regardless of the criteria you set, the AMIs created by your account will always be discoverable and usable by users in your account.

For more information, see Control the discovery and use of AMIs in Amazon EC2 with Allowed AMIs in *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllowedImagesSettingsState**

Specify `enabled` to apply the image criteria specified by the Allowed AMIs settings. Specify `audit-mode` so that you can check which AMIs will be allowed or not allowed by the image criteria.

Type: String

Valid Values: `enabled | audit-mode`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**allowedImagesSettingsState**

Returns `enabled` or `audit-mode` if the request succeeds; otherwise, it returns an error.

Type: String

Valid Values: `enabled | audit-mode`

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableAwsNetworkPerformanceMetricSubscription

Enables Infrastructure Performance subscriptions.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Destination**

The target Region (like `us-east-2`) or Availability Zone ID (like `use2-az2`) that the metric subscription is enabled for. If you use Availability Zone IDs, the Source and Destination Availability Zones must be in the same Region.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Metric**

The metric used for the enabled subscription.

Type: String

Valid Values: `aggregate-latency`

Required: No

**Source**

The source Region (like `us-east-1`) or Availability Zone ID (like `use1-az1`) that the metric subscription is enabled for. If you use Availability Zone IDs, the Source and Destination Availability Zones must be in the same Region.

Type: String

Required: No

**Statistic**

The statistic used for the enabled subscription.

Type: String

Valid Values: `p50`

Required: No

## Response Elements

The following elements are returned by the service.

**output**

Indicates whether the subscribe action was successful.

Type: Boolean

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableCapacityManager

Enables EC2 Capacity Manager for your account. This starts data ingestion for your EC2 capacity usage across On-Demand, Spot, and Capacity Reservations. Initial data processing may take several hours to complete.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**OrganizationsAccess**

Specifies whether to enable cross-account access for AWS Organizations. When enabled, Capacity Manager can aggregate data from all accounts in your organization. Default is false.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**capacityManagerStatus**

The current status of Capacity Manager after the enable operation.

Type: String

Valid Values: `enabled | disabled`

**organizationsAccess**

Indicates whether Organizations access is enabled for cross-account data aggregation.

Type: Boolean

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example enables Capacity Manager with Organizations access for cross-account data aggregation.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=EnableCapacityManager
&OrganizationsAccess=true
&AUTHPARAMS
```

#### Sample Response

```
<EnableCapacityManagerResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <capacityManagerStatus>enabled</capacityManagerStatus>
```

```
    <organizationsAccess>true</organizationsAccess>
</EnableCapacityManagerResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableEbsEncryptionByDefault

Enables EBS encryption by default for your account in the current Region.

After you enable encryption by default, the EBS volumes that you create are always encrypted, either using the default KMS key or the KMS key that you specified when you created each volume. For more information, see Amazon EBS encryption in the *Amazon EBS User Guide*.

You can specify the default KMS key for encryption by default using ModifyEbsDefaultKmsKeyId or ResetEbsDefaultKmsKeyId.

Enabling encryption by default has no effect on the encryption status of your existing volumes.

After you enable encryption by default, you can no longer launch instances using instance types that do not support encryption. For more information, see Supported instance types.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**ebsEncryptionByDefault**

The updated status of encryption by default.

Type: Boolean

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableFastLaunch

When you enable Windows fast launch for a Windows AMI, images are pre-provisioned, using snapshots to launch instances up to 65% faster. To create the optimized Windows image, Amazon EC2 launches an instance and runs through Sysprep steps, rebooting as required. Then it creates a set of reserved snapshots that are used for subsequent launches. The reserved snapshots are automatically replenished as they are used, depending on your settings for launch frequency.

> **Note**
>
> You can only change these settings for Windows AMIs that you own or that have been shared with you.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

Specify the ID of the image for which to enable Windows fast launch.

Type: String

Required: Yes

**LaunchTemplate**

The launch template to use when launching Windows instances from pre-provisioned snapshots. Launch template parameters can include either the name or ID of the launch template, but not both.

Type: FastLaunchLaunchTemplateSpecificationRequest object

Required: No

**MaxParallelLaunches**

The maximum number of instances that Amazon EC2 can launch at the same time to create pre-provisioned snapshots for Windows fast launch. Value must be 6 or greater.

Type: Integer

Required: No

**ResourceType**

The type of resource to use for pre-provisioning the AMI for Windows fast launch. Supported values include: `snapshot`, which is the default value.

Type: String

Required: No

**SnapshotConfiguration**

Configuration settings for creating and managing the snapshots that are used for pre-provisioning the AMI for Windows fast launch. The associated `ResourceType` must be `snapshot`.

Type: FastLaunchSnapshotConfigurationRequest object

Required: No

## Response Elements

The following elements are returned by the service.

**imageId**

The image ID that identifies the AMI for which Windows fast launch was enabled.

Type: String

**launchTemplate**

The launch template that is used when launching Windows instances from pre-provisioned snapshots.

Type: FastLaunchLaunchTemplateSpecificationResponse object

**maxParallelLaunches**

The maximum number of instances that Amazon EC2 can launch at the same time to create pre-provisioned snapshots for Windows fast launch.

Type: Integer

**ownerId**

The owner ID for the AMI for which Windows fast launch was enabled.

Type: String

**requestId**

The ID of the request.

Type: String

**resourceType**

The type of resource that was defined for pre-provisioning the AMI for Windows fast launch.

Type: String

Valid Values: `snapshot`

**snapshotConfiguration**

Settings to create and manage the pre-provisioned snapshots that Amazon EC2 uses for faster launches from the Windows AMI. This property is returned when the associated `resourceType` is `snapshot`.

Type: FastLaunchSnapshotConfigurationResponse object

**state**

The current state of Windows fast launch for the specified AMI.

Type: String

Valid Values: `enabling | enabling-failed | enabled | enabled-failed | disabling | disabling-failed`

**stateTransitionReason**

The reason that the state changed for Windows fast launch for the AMI.

Type: String

**stateTransitionTime**

The time that the state changed for Windows fast launch for the AMI.

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableFastSnapshotRestores

Enables fast snapshot restores for the specified snapshots in the specified Availability Zones.

You get the full benefit of fast snapshot restores after they enter the `enabled` state.

To get the current state of fast snapshot restores, use DescribeFastSnapshotRestores. To disable fast snapshot restores, use DisableFastSnapshotRestores.

For more information, see Amazon EBS fast snapshot restore in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZone.N**

One or more Availability Zones. For example, `us-east-2a`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: Array of strings

Required: No

**AvailabilityZoneId.N**

One or more Availability Zone IDs. For example, `use2-az1`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SourceSnapshotId.N**

The IDs of one or more snapshots. For example, `snap-1234567890abcdef0`. You can specify a snapshot that was shared with you from another AWS account.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**successful**

Information about the snapshots for which fast snapshot restores were successfully enabled.

Type: Array of EnableFastSnapshotRestoreSuccessItem objects

**unsuccessful**

Information about the snapshots for which fast snapshot restores could not be enabled.

Type: Array of EnableFastSnapshotRestoreErrorItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableImage

Re-enables a disabled AMI. The re-enabled AMI is marked as `available` and can be used for instance launches, appears in describe operations, and can be shared. AWS accounts, organizations, and Organizational Units that lost access to the AMI when it was disabled do not regain access automatically. Once the AMI is available, it can be shared with them again.

Only the AMI owner can re-enable a disabled AMI.

For more information, see Disable an Amazon EC2 AMI in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example enables the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=EnableImage
&ImageId=ami-0123456789EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<EnableImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>11aabb229-4eac-35bd-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableImageBlockPublicAccess

Enables *block public access for AMIs* at the account level in the specified AWS Region. This prevents the public sharing of your AMIs. However, if you already have public AMIs, they will remain publicly available.

The API can take up to 10 minutes to configure this setting. During this time, if you run GetImageBlockPublicAccessState, the response will be `unblocked`. When the API has completed the configuration, the response will be `block-new-sharing`.

For more information, see Block public access to your AMIs in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageBlockPublicAccessState**

Specify `block-new-sharing` to enable block public access for AMIs at the account level in the specified Region. This will block any attempt to publicly share your AMIs in the specified Region.

Type: String

Valid Values: `block-new-sharing`

Required: Yes

## Response Elements

The following elements are returned by the service.

**imageBlockPublicAccessState**

Returns `block-new-sharing` if the request succeeds; otherwise, it returns an error.

Type: String

Valid Values: `block-new-sharing`

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example enables *block public access for AMIs* at the account level in the specified Region to prevent users in your account from publicly sharing your AMIs in the specified Region. If you already have public AMIs, they will remain publicly available.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=EnableImageBlockPublicAccess
&Region=us-east-1
&ImageBlockPublicAccessState=block-new-sharing
&AUTHPARAMS
```

#### Sample Response

```
<EnableImageBlockPublicAccessResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>11aabb229-4eac-35bd-99ed-be587EXAMPLE</requestId>
  <return>block-new-sharing</return>
</EnableImageBlockPublicAccessResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableImageDeprecation

Enables deprecation of the specified AMI at the specified date and time.

For more information, see Deprecate an AMI in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DeprecateAt**

The date and time to deprecate the AMI, in UTC, in the following format: *YYYY-MM-DD*T*HH*:*MM*:*SS*Z. If you specify a value for seconds, Amazon EC2 rounds the seconds to the nearest minute.

You can't specify a date in the past. The upper limit for `DeprecateAt` is 10 years from now, except for public AMIs, where the upper limit is 2 years from the creation date.

Type: Timestamp

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example deprecates the specified AMI at the specified date and time. If you specify a value for seconds, Amazon EC2 rounds the seconds to the nearest minute.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=EnableImageDeprecation
&ImageId=ami-0123456789EXAMPLE
&DeprecateAt="2022-06-15T13:17:00.000Z"
&AUTHPARAMS
```

#### Sample Response

```
<EnableImageDeprecationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableImageDeprecationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableImageDeregistrationProtection

Enables deregistration protection for an AMI. When deregistration protection is enabled, the AMI can't be deregistered.

To allow the AMI to be deregistered, you must first disable deregistration protection.

For more information, see Protect an Amazon EC2 AMI from deregistration in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

**WithCooldown**

If `true`, enforces deregistration protection for 24 hours after deregistration protection is disabled.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableInstanceSqlHaStandbyDetections

Enable Amazon EC2 instances running in an SQL Server High Availability cluster for SQL Server High Availability instance standby detection monitoring. Once enabled, AWS monitors the metadata for the instances to determine whether they are active or standby nodes in the SQL Server High Availability cluster. If the instances are determined to be standby failover nodes, AWS automatically applies SQL Server licensing fee waiver for those instances.

To register an instance, it must be running a Windows SQL Server license-included AMI and have the AWS Systems Manager agent installed and running. Only Windows Server 2019 and later and SQL Server (Standard and Enterprise editions) 2017 and later are supported. For more information, see Prerequisites for using SQL Server High Availability instance standby detection.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId.N**

The IDs of the instances to enable for SQL Server High Availability standby detection monitoring.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 30 items.

Required: Yes

**SqlServerCredentials**

The ARN of the AWS Secrets Manager secret containing the SQL Server access credentials. The specified secret must contain valid SQL Server credentials for the specified instances. If not

specified, deafult local user credentials will be used by the AWS Systems Manager agent. To enable instances with different credentials, you must make separate requests.

Type: String

Pattern: `^(?=.{20,2048}$)arn:aws[a-z-]*:secretsmanager:[a-z0-9-]+:\d{12}:secret:[a-zA-Z0-9/_+=.@-]+`

Required: No

## Response Elements

The following elements are returned by the service.

**instanceSet**

Information about the instances that were enabled for SQL Server High Availability standby detection monitoring.

Type: Array of RegisteredInstance objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableIpamOrganizationAdminAccount

Enable an AWS Organizations member account as the IPAM admin account. You cannot select the AWS Organizations management account as the IPAM admin account. For more information, see Enable integration with AWS Organizations in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DelegatedAdminAccountId**

The AWS Organizations member account ID that you want to enable as the IPAM account.

Type: String

Required: Yes

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**success**

The result of enabling the IPAM account.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableIpamPolicy

Enables an IPAM policy.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

For more information, see Define public IPv4 allocation strategy with IPAM policies in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPolicyId**

The ID of the IPAM policy to enable.

Type: String

Required: Yes

**OrganizationTargetId**

A target can be an individual AWS account or an entity within an AWS Organization to which an IPAM policy can be applied.

The ID of the AWS Organizations target for which to enable the IPAM policy. This parameter is required only when IPAM is integrated with AWS Organizations. When IPAM is not integrated with AWS Organizations, omit this parameter and the policy will apply to the current account.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPolicyId**

The ID of the IPAM policy that was enabled.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableReachabilityAnalyzerOrganizationSharing

Establishes a trust relationship between Reachability Analyzer and AWS Organizations. This operation must be performed by the management account for the organization.

After you establish a trust relationship, a user in the management account or a delegated administrator account can run a cross-account analysis using resources from the member accounts.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**returnValue**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableRouteServerPropagation

Defines which route tables the route server can update with routes.

When enabled, route server propagation installs the routes in the FIB on the route table you've specified. Route server supports IPv4 and IPv6 route propagation.

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteServerId**

The ID of the route server for which to enable propagation.

Type: String

Required: Yes

**RouteTableId**

The ID of the route table to which route server will propagate routes.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServerPropagation**

Information about the enabled route server propagation.

Type: RouteServerPropagation object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableSerialConsoleAccess

Enables access to the EC2 serial console of all instances for your account. By default, access to the EC2 serial console is disabled for your account. For more information, see Manage account access to the EC2 serial console in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**serialConsoleAccessEnabled**

If `true`, access to the EC2 serial console of all instances is enabled for your account. If `false`, access to the EC2 serial console of all instances is disabled for your account.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableSnapshotBlockPublicAccess

Enables or modifies the *block public access for snapshots* setting at the account level for the specified AWS Region. After you enable block public access for snapshots in a Region, users can no longer request public sharing for snapshots in that Region. Snapshots that are already publicly shared are either treated as private or they remain publicly shared, depending on the **State** that you specify.

**Important**

Enabling block public access for snapshots in *block all sharing* mode does not change the permissions for snapshots that are already publicly shared. Instead, it prevents these snapshots from be publicly visible and publicly accessible. Therefore, the attributes for these snapshots still indicate that they are publicly shared, even though they are not publicly available.

If you later disable block public access or change the mode to *block new sharing*, these snapshots will become publicly available again.

For more information, see Block public access for snapshots in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**State**

The mode in which to enable block public access for snapshots for the Region. Specify one of the following values:

- `block-all-sharing` - Prevents all public sharing of snapshots in the Region. Users in the account will no longer be able to request new public sharing. Additionally, snapshots that are already publicly shared are treated as private and they are no longer publicly available.
- `block-new-sharing` - Prevents only new public sharing of snapshots in the Region. Users in the account will no longer be able to request new public sharing. However, snapshots that are already publicly shared, remain publicly available.

`unblocked` is not a valid value for **EnableSnapshotBlockPublicAccess**.

Type: String

Valid Values: `block-all-sharing | block-new-sharing | unblocked`

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**state**

The state of block public access for snapshots for the account and Region. Returns either `block-all-sharing` or `block-new-sharing` if the request succeeds.

Type: String

Valid Values: `block-all-sharing | block-new-sharing | unblocked`

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableTransitGatewayRouteTablePropagation

Enables the specified attachment to propagate routes to the specified propagation route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

**TransitGatewayRouteTableAnnouncementId**

The ID of the transit gateway route table announcement.

Type: String

Required: No

**TransitGatewayRouteTableId**

The ID of the propagation route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**propagation**

Information about route propagation.

Type: TransitGatewayPropagation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableVgwRoutePropagation

Enables a virtual private gateway (VGW) to propagate routes to the specified route table of a VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GatewayId**

The ID of the virtual private gateway that is attached to a VPC. The virtual private gateway must be attached to the same VPC that the routing tables are associated with.

Type: String

Required: Yes

**RouteTableId**

The ID of the route table. The routing table must be associated with the same VPC that the virtual private gateway is attached to.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example enables the specified virtual private gateway to propagate routes automatically to the route table with the ID `rtb-c98a35a0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVgwRoutePropagation
&RouteTableID=rtb-c98a35a0
&GatewayId=vgw-d8e09e8a
&AUTHPARAMS
```

#### Sample Response

```
<EnableVgwRoutePropagation xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
    <return>true</return>
</EnableVgwRoutePropagation>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableVolumeIO

Enables I/O operations for a volume that had I/O operations disabled because the data on the volume was potentially inconsistent.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VolumeId**

The ID of the volume.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example enables the I/O operations of the volume vol-8888888.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVolumeIO
&VolumeId= vol-8888888
&AUTHPARAMS
```

#### Sample Response

```
<EnableVolumeIOResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</EnableVolumeIOResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# EnableVpcClassicLink

**Note**

This action is deprecated.

Enables a VPC for ClassicLink. You can then link EC2-Classic instances to your ClassicLink-enabled VPC to allow communication over private IP addresses. You cannot enable your VPC for ClassicLink if any of your VPC route tables have existing routes for address ranges within the `10.0.0.0/8` IP address range, excluding local routes for VPCs in the `10.0.0.0/16` and `10.1.0.0/16` IP address ranges.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# EnableVpcClassicLinkDnsSupport

> **Note**
>
> This action is deprecated.

Enables a VPC to support DNS hostname resolution for ClassicLink. If enabled, the DNS hostname of a linked EC2-Classic instance resolves to its private IP address when addressed from an instance in the VPC to which it's linked. Similarly, the DNS hostname of an instance in a VPC resolves to its private IP address when addressed from a linked EC2-Classic instance.

You must specify a VPC ID in the request.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**VpcId**

The ID of the VPC.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ExportClientVpnClientCertificateRevocationList

Downloads the client certificate revocation list for the specified Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**certificateRevocationList**

Information about the client certificate revocation list.

Type: String

**requestId**

The ID of the request.

Type: String

**status**

The current state of the client certificate revocation list.

Type: ClientCertificateRevocationListStatus object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ExportClientVpnClientConfiguration

Downloads the contents of the Client VPN endpoint configuration file for the specified Client VPN endpoint. The Client VPN endpoint configuration file includes the Client VPN endpoint and certificate information clients need to establish a connection with the Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**clientConfiguration**

The contents of the Client VPN endpoint configuration file.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example downloads a Client VPN endpoint configuration file.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ExportClientVpnClientConfiguration
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<ExportClientVpnClientConfigurationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>44e88bf8-d460-4c43-80b8-a27e4EXAMPLE</requestId>
    <clientConfiguration>client
dev tun
proto udp
remote cvpn-endpoint-00c5d11fc4EXAMPLE.clientvpn.us-east-1.amazonaws.com 443
remote-random-hostname
resolv-retry infinite
nobind
persist-key
persist-tun
remote-cert-tls server
cipher AES-256-CBC
verb 3
<ca>
-----BEGIN CERTIFICATE-----
EXAMPLECAgmgAwIBAgIJAOjnW3hL6o+7MA0GCSqGSIb3DQEBCwUAMBAxDEXAMPLE
-----END CERTIFICATE-----

</ca></clientConfiguration>
```

```
</ExportClientVpnClientConfigurationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ExportImage

Exports an Amazon Machine Image (AMI) to a VM file. For more information, see Exporting a VM directly from an Amazon Machine Image (AMI) in the *VM Import/Export User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Token to enable idempotency for export image requests.

Type: String

Required: No

**Description**

A description of the image being exported. The maximum length is 255 characters.

Type: String

Required: No

**DiskImageFormat**

The disk image format.

Type: String

Valid Values: `VMDK | RAW | VHD`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the image.

Type: String

Required: Yes

**RoleName**

The name of the role that grants VM Import/Export permission to export images to your Amazon S3 bucket. If this parameter is not specified, the default role is named 'vmimport'.

Type: String

Required: No

**S3ExportLocation**

The Amazon S3 bucket for the destination image. The destination bucket must exist.

Type: ExportTaskS3LocationRequest object

Required: Yes

**TagSpecification.N**

The tags to apply to the export image task during creation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**description**

A description of the image being exported.

Type: String

**diskImageFormat**

The disk image format for the exported image.

Type: String

Valid Values: `VMDK` | `RAW` | `VHD`

**exportImageTaskId**

The ID of the export image task.

Type: String

**imageId**

The ID of the image.

Type: String

**progress**

The percent complete of the export image task.

Type: String

**requestId**

The ID of the request.

Type: String

**roleName**

The name of the role that grants VM Import/Export permission to export images to your Amazon S3 bucket.

Type: String

**s3ExportLocation**

Information about the destination Amazon S3 bucket.

Type: ExportTaskS3Location object

**status**

The status of the export image task. The possible values are `active`, `completed`, `deleting`, and `deleted`.

Type: String

**statusMessage**

The status message for the export image task.

Type: String

**tagSet**

Any tags assigned to the export image task.

Type: Array of Tag objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ExportTransitGatewayRoutes

Exports routes from the specified transit gateway route table to the specified S3 bucket. By default, all routes are exported. Alternatively, you can filter by CIDR range.

The routes are saved to the specified bucket in a JSON file. For more information, see Export route tables to Amazon S3 in the *AWS Transit Gateways Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `attachment.transit-gateway-attachment-id` - The id of the transit gateway attachment.
- `attachment.resource-id` - The resource id of the transit gateway attachment.
- `route-search.exact-match` - The exact match of the specified filter.
- `route-search.longest-prefix-match` - The longest prefix that matches the route.
- `route-search.subnet-of-match` - The routes with a subnet that match the specified CIDR filter.
- `route-search.supernet-of-match` - The routes with a CIDR that encompass the CIDR filter. For example, if you have 10.0.1.0/29 and 10.0.1.0/31 routes in your route table and you specify supernet-of-match as 10.0.1.0/30, then the result returns 10.0.1.0/29.
- `state` - The state of the route (`active` | `blackhole`).
- `transit-gateway-route-destination-cidr-block` - The CIDR range.

- `type` - The type of route (`propagated` | `static`).

Type: Array of Filter objects

Required: No

**S3Bucket**

The name of the S3 bucket.

Type: String

Required: Yes

**TransitGatewayRouteTableId**

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**s3Location**

The URL of the exported file in Amazon S3. For example, s3://*bucket_name*/VPCTransitGateway/TransitGatewayRouteTables/*file_name*.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ExportVerifiedAccessInstanceClientConfiguration

Exports the client configuration for a Verified Access instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessInstanceId**

The ID of the Verified Access instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**deviceTrustProviderSet**

The device trust providers.

Type: Array of strings

Valid Values: `jamf | crowdstrike | jumpcloud`

**openVpnConfigurationSet**

The Open VPN configuration.

Type: Array of VerifiedAccessInstanceOpenVpnClientConfiguration objects

**region**

The Region.

Type: String

**requestId**

The ID of the request.

Type: String

**userTrustProvider**

The user identity trust provider.

Type: VerifiedAccessInstanceUserTrustProviderClientConfiguration object

**verifiedAccessInstanceId**

The ID of the Verified Access instance.

Type: String

**version**

The version.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetActiveVpnTunnelStatus

Returns the currently negotiated security parameters for an active VPN tunnel, including IKE version, DH groups, encryption algorithms, and integrity algorithms.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request.

Type: Boolean

Required: No

**VpnConnectionId**

The ID of the VPN connection for which to retrieve the active tunnel status.

Type: String

Required: Yes

**VpnTunnelOutsideIpAddress**

The external IP address of the VPN tunnel for which to retrieve the active status.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**activeVpnTunnelStatus**

Information about the current security configuration of the VPN tunnel.

Type: ActiveVpnTunnelStatus object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetAllowedImagesSettings

Gets the current state of the Allowed AMIs setting and the list of Allowed AMIs criteria at the account level in the specified Region.

> **Note**
>
> The Allowed AMIs feature does not restrict the AMIs owned by your account. Regardless of the criteria you set, the AMIs created by your account will always be discoverable and usable by users in your account.

For more information, see Control the discovery and use of AMIs in Amazon EC2 with Allowed AMIs in *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**imageCriterionSet**

The list of criteria for images that are discoverable and usable in the account in the specified AWS Region.

Type: Array of ImageCriterion objects

**managedBy**

The entity that manages the Allowed AMIs settings. Possible values include:

- `account` - The Allowed AMIs settings is managed by the account.
- `declarative-policy` - The Allowed AMIs settings is managed by a declarative policy and can't be modified by the account.

Type: String

Valid Values: `account | declarative-policy`

**requestId**

The ID of the request.

Type: String

**state**

The current state of the Allowed AMIs setting at the account level in the specified AWS Region.

Possible values:

- `disabled`: All AMIs are allowed.
- `audit-mode`: All AMIs are allowed, but the `ImageAllowed` field is set to `true` if the AMI would be allowed with the current list of criteria if allowed AMIs was enabled.
- `enabled`: Only AMIs matching the image criteria are discoverable and available for use.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetAssociatedEnclaveCertificateIamRoles

Returns the IAM roles that are associated with the specified ACM (ACM) certificate. It also returns the name of the Amazon S3 bucket and the Amazon S3 object key where the certificate, certificate chain, and encrypted private key bundle are stored, and the ARN of the KMS key that's used to encrypt the private key.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CertificateArn**

The ARN of the ACM certificate for which to view the associated IAM roles, encryption keys, and Amazon S3 object information.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**associatedRoleSet**

Information about the associated IAM roles.

Type: Array of AssociatedRole objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetAssociatedIpv6PoolCidrs

Gets information about the IPv6 CIDR block associations for a specified IPv6 address pool.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**PoolId**

The ID of the IPv6 address pool.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipv6CidrAssociationSet**

Information about the IPv6 CIDR block associations.

Type: Array of Ipv6CidrAssociation objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetAwsNetworkPerformanceData

Gets network performance data.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DataQuery.N**

A list of network performance data queries.

Type: Array of DataQuery objects

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndTime**

The ending time for the performance data request. The end time must be formatted as `yyyy-mm-ddThh:mm:ss`. For example, `2022-06-12T12:00:00.000Z`.

Type: Timestamp

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**StartTime**

The starting time for the performance data request. The starting time must be formatted as `yyyy-mm-ddThh:mm:ss`. For example, `2022-06-10T12:00:00.000Z`.

Type: Timestamp

Required: No

## Response Elements

The following elements are returned by the service.

**dataResponseSet**

The list of data responses.

Type: Array of DataResponse objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetCapacityManagerAttributes

Retrieves the current configuration and status of EC2 Capacity Manager for your account, including enablement status, Organizations access settings, and data ingestion status.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**capacityManagerStatus**

The current status of Capacity Manager.

Type: String

Valid Values: `enabled | disabled`

**dataExportCount**

The number of active data export configurations for this account. This count includes all data exports regardless of their current delivery status.

Type: Integer

**earliestDatapointTimestamp**

The timestamp of the earliest data point available in Capacity Manager, in milliseconds since epoch. This indicates how far back historical data is available for queries.

Type: Timestamp

**ingestionStatus**

The current data ingestion status. Initial ingestion may take several hours after enabling Capacity Manager.

Type: String

Valid Values: `initial-ingestion-in-progress | ingestion-complete | ingestion-failed`

**ingestionStatusMessage**

A descriptive message providing additional details about the current ingestion status. This may include error information if ingestion has failed or progress details during initial setup.

Type: String

**latestDatapointTimestamp**

The timestamp of the most recent data point ingested by Capacity Manager, in milliseconds since epoch. This indicates how current your capacity data is.

Type: Timestamp

**organizationsAccess**

Indicates whether Organizations access is enabled for cross-account data aggregation.

Type: Boolean

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example retrieves the current Capacity Manager attributes for your account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=GetCapacityManagerAttributes
&AUTHPARAMS
```

### Sample Response

```
<GetCapacityManagerAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <capacityManagerStatus>enabled</capacityManagerStatus>
    <organizationsAccess>true</organizationsAccess>
    <dataExportCount>2</dataExportCount>
    <ingestionStatus>ingestion-complete</ingestionStatus>
    <ingestionStatusMessage>Data ingestion is up to date.</ingestionStatusMessage>
    <earliestDatapointTimestamp>2025-12-23T20:00:00+00:00</earliestDatapointTimestamp>
    <latestDatapointTimestamp>2026-03-23T15:00:00+00:00</latestDatapointTimestamp>
</GetCapacityManagerAttributesResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# GetCapacityManagerMetricData

Retrieves capacity usage metrics for your EC2 resources. Returns time-series data for metrics like unused capacity, utilization rates, and costs across On-Demand, Spot, and Capacity Reservations. Data can be grouped and filtered by various dimensions such as region, account, and instance family.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndTime**

The end time for the metric data query, in ISO 8601 format. If the end time is beyond the latest ingested data, it will be automatically adjusted to the latest available data point.

Type: Timestamp

Required: Yes

**FilterBy.N**

Conditions to filter the metric data. Each filter specifies a dimension, comparison operator ('equals', 'in'), and values to match against.

Type: Array of CapacityManagerCondition objects

Array Members: Minimum number of 0 items. Maximum number of 20 items.

Required: No

**GroupBy.N**

The dimensions by which to group the metric data. This determines how the data is aggregated and returned.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 20 items.

Length Constraints: Minimum length of 0. Maximum length of 300.

Valid Values: `resource-region | availability-zone-id | account-id | account-name | instance-family | instance-type | instance-platform | reservation-arn | reservation-id | reservation-type | reservation-create-timestamp | reservation-start-timestamp | reservation-end-timestamp | reservation-end-date-type | tenancy | reservation-state | reservation-instance-match-criteria | reservation-unused-financial-owner`

Required: No

**MaxResults**

The maximum number of data points to return. Valid range is 1 to 100,000. Use with NextToken for pagination of large result sets.

Type: Integer

Required: No

**MetricName.N**

The names of the metrics to retrieve. Maximum of 10 metrics per request.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 40 items.

Valid Values: `reservation-total-capacity-hrs-vcpu | reservation-total-capacity-hrs-inst | reservation-max-size-vcpu | reservation-max-size-inst | reservation-min-size-vcpu | reservation-min-size-inst | reservation-unused-total-capacity-hrs-vcpu | reservation-unused-total-capacity-hrs-inst | reservation-unused-total-estimated-cost | reservation-max-unused-size-vcpu | reservation-max-unused-size-`

```
inst | reservation-min-unused-size-vcpu | reservation-min-unused-
size-inst | reservation-max-utilization | reservation-min-utilization
| reservation-avg-utilization-vcpu | reservation-avg-utilization-
inst | reservation-total-count | reservation-total-estimated-cost |
reservation-avg-future-size-vcpu | reservation-avg-future-size-inst |
reservation-min-future-size-vcpu | reservation-min-future-size-inst |
reservation-max-future-size-vcpu | reservation-max-future-size-inst |
reservation-avg-committed-size-vcpu | reservation-avg-committed-size-
inst | reservation-max-committed-size-vcpu | reservation-max-committed-
size-inst | reservation-min-committed-size-vcpu | reservation-min-
committed-size-inst | reserved-total-usage-hrs-vcpu | reserved-total-
usage-hrs-inst | reserved-total-estimated-cost | unreserved-total-usage-
hrs-vcpu | unreserved-total-usage-hrs-inst | unreserved-total-estimated-
cost | spot-total-usage-hrs-vcpu | spot-total-usage-hrs-inst | spot-
total-estimated-cost | spot-avg-run-time-before-interruption-inst |
spot-max-run-time-before-interruption-inst | spot-min-run-time-before-
interruption-inst
```

Required: Yes

**NextToken**

The token for the next page of results. Use this value in a subsequent call to retrieve additional data points.

Type: String

Required: No

**Period**

The granularity, in seconds, of the returned data points.

Type: Integer

Valid Range: Minimum value of 3600.

Required: Yes

**StartTime**

The start time for the metric data query, in ISO 8601 format. The time range (end time - start time) must be a multiple of the specified period.

Type: Timestamp

Required: Yes

## Response Elements

The following elements are returned by the service.

**metricDataResultSet**

The metric data points returned by the query. Each result contains dimension values, timestamp, and metric values with their associated statistics.

Type: Array of MetricDataResult objects

**nextToken**

The token to use to retrieve the next page of results. This value is null when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example retrieves hourly unused capacity metrics grouped by instance family for a specific time range.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=GetCapacityManagerMetricData
```

```
&MetricName.1=reservation-unused-total-capacity-hrs-vcpu
&StartTime=2024-01-15T00:00:00Z
&EndTime=2024-01-16T00:00:00Z
&Period=3600
&GroupBy.1=instanceFamily
&AUTHPARAMS
```

### Sample Response

```
<GetCapacityManagerMetricDataResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <metricDataResultSet>
        <item>
            <dimension>
                <instanceFamily>m5</instanceFamily>
            </dimension>
            <timestamp>2024-01-15T00:00:00.000Z</timestamp>
            <metricValueSet>
                <item>
                    <metric>reservation-unused-total-capacity-hrs-vcpu</metric>
                    <value>150.0</value>
                </item>
            </metricValueSet>
        </item>
        <item>
            <dimension>
                <instanceFamily>c5</instanceFamily>
            </dimension>
            <timestamp>2024-01-15T00:00:00.000Z</timestamp>
            <metricValueSet>
                <item>
                    <metric>reservation-unused-total-capacity-hrs-vcpu</metric>
                    <value>75.5</value>
                </item>
            </metricValueSet>
        </item>
    </metricDataResultSet>
</GetCapacityManagerMetricDataResponse>
```

## Example 2

This example retrieves On-Demand usage metrics grouped by the `environment` tag dimension and filtered to only production resources.

### Sample Request

```
https://ec2.amazonaws.com/?Action=GetCapacityManagerMetricData
&MetricName.1=unreserved-total-usage-hrs-vcpu
&StartTime=2024-01-15T00:00:00Z
&EndTime=2024-01-16T00:00:00Z
&Period=3600
&GroupBy.1=tag:environment
&FilterBy.1.DimensionCondition.Dimension=tag:environment
&FilterBy.1.DimensionCondition.Comparison=equals
&FilterBy.1.DimensionCondition.Value.1=prod
&AUTHPARAMS
```

### Sample Response

```
<GetCapacityManagerMetricDataResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>a1b2c3d4-e5f6-7890-abcd-1234EXAMPLE</requestId>
    <metricDataResultSet>
        <item>
            <dimension>
                <tagSet>
                    <item>
                        <key>environment</key>
                        <value>prod</value>
                    </item>
                </tagSet>
            </dimension>
            <timestamp>2024-01-15T00:00:00.000Z</timestamp>
            <metricValueSet>
                <item>
                    <metric>unreserved-total-usage-hrs-vcpu</metric>
                    <value>320.0</value>
                </item>
            </metricValueSet>
        </item>
    </metricDataResultSet>
</GetCapacityManagerMetricDataResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetCapacityManagerMetricDimensions

Retrieves the available dimension values for capacity metrics within a specified time range. This is useful for discovering what accounts, regions, instance families, and other dimensions have data available for filtering and grouping.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndTime**

The end time for the dimension query, in ISO 8601 format. Only dimensions with data in this time range will be returned.

Type: Timestamp

Required: Yes

**FilterBy.N**

Conditions to filter which dimension values are returned. Each filter specifies a dimension, comparison operator, and values to match against.

Type: Array of CapacityManagerCondition objects

Array Members: Minimum number of 0 items. Maximum number of 20 items.

Required: No

**GroupBy.N**

The dimensions to group by when retrieving available dimension values. This determines which dimension combinations are returned. Required parameter.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 20 items.

Length Constraints: Minimum length of 0. Maximum length of 300.

Valid Values: `resource-region | availability-zone-id | account-id | account-name | instance-family | instance-type | instance-platform | reservation-arn | reservation-id | reservation-type | reservation-create-timestamp | reservation-start-timestamp | reservation-end-timestamp | reservation-end-date-type | tenancy | reservation-state | reservation-instance-match-criteria | reservation-unused-financial-owner`

Required: Yes

**MaxResults**

The maximum number of dimension combinations to return. Valid range is 1 to 1000. Use with NextToken for pagination.

Type: Integer

Required: No

**MetricName.N**

The metric names to use as an additional filter when retrieving dimensions. Only dimensions that have data for these metrics will be returned. Required parameter with maximum size of 1 for v1.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 40 items.

Valid Values: `reservation-total-capacity-hrs-vcpu | reservation-total-capacity-hrs-inst | reservation-max-size-vcpu | reservation-max-size-inst | reservation-min-size-vcpu | reservation-min-size-inst | reservation-unused-total-capacity-hrs-vcpu | reservation-unused-total-capacity-hrs-inst | reservation-unused-total-estimated-cost | reservation-max-unused-size-vcpu | reservation-max-unused-size-inst | reservation-min-unused-size-vcpu | reservation-min-unused-`

```
size-inst | reservation-max-utilization | reservation-min-utilization
| reservation-avg-utilization-vcpu | reservation-avg-utilization-
inst | reservation-total-count | reservation-total-estimated-cost |
reservation-avg-future-size-vcpu | reservation-avg-future-size-inst |
reservation-min-future-size-vcpu | reservation-min-future-size-inst |
reservation-max-future-size-vcpu | reservation-max-future-size-inst |
reservation-avg-committed-size-vcpu | reservation-avg-committed-size-
inst | reservation-max-committed-size-vcpu | reservation-max-committed-
size-inst | reservation-min-committed-size-vcpu | reservation-min-
committed-size-inst | reserved-total-usage-hrs-vcpu | reserved-total-
usage-hrs-inst | reserved-total-estimated-cost | unreserved-total-usage-
hrs-vcpu | unreserved-total-usage-hrs-inst | unreserved-total-estimated-
cost | spot-total-usage-hrs-vcpu | spot-total-usage-hrs-inst | spot-
total-estimated-cost | spot-avg-run-time-before-interruption-inst |
spot-max-run-time-before-interruption-inst | spot-min-run-time-before-
interruption-inst
```

Required: Yes

**NextToken**

The token for the next page of results. Use this value in a subsequent call to retrieve additional dimension values.

Type: String

Required: No

**StartTime**

The start time for the dimension query, in ISO 8601 format. Only dimensions with data in this time range will be returned.

Type: Timestamp

Required: Yes

## Response Elements

The following elements are returned by the service.

**metricDimensionResultSet**

The available dimension combinations that have data within the specified time range and filters.

Type: Array of CapacityManagerDimension objects

**nextToken**

The token to use to retrieve the next page of results. This value is null when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example retrieves the available instance families that have unused capacity data in a given time range.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetCapacityManagerMetricDimensions
&GroupBy.1=instanceFamily
&MetricName.1=reservation-unused-total-capacity-hrs-vcpu
&StartTime=2024-01-15T00:00:00Z
&EndTime=2024-01-16T00:00:00Z
&AUTHPARAMS
```

#### Sample Response

```
<GetCapacityManagerMetricDimensionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
```

```
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <metricDimensionResultSet>
        <item>
            <dimension>
                <instanceFamily>m5</instanceFamily>
            </dimension>
        </item>
        <item>
            <dimension>
                <instanceFamily>c5</instanceFamily>
            </dimension>
        </item>
        <item>
            <dimension>
                <instanceFamily>r5</instanceFamily>
            </dimension>
        </item>
    </metricDimensionResultSet>
</GetCapacityManagerMetricDimensionsResponse>
```

## Example 2

This example retrieves the unique values of the `environment` tag dimension that have On-Demand usage data in a given time range.

### Sample Request

```
https://ec2.amazonaws.com/?Action=GetCapacityManagerMetricDimensions
&GroupBy.1=tag:environment
&MetricName.1=unreserved-total-usage-hrs-vcpu
&StartTime=2024-01-15T00:00:00Z
&EndTime=2024-01-16T00:00:00Z
&AUTHPARAMS
```

### Sample Response

```
<GetCapacityManagerMetricDimensionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>a1b2c3d4-e5f6-7890-abcd-5678EXAMPLE</requestId>
    <metricDimensionResultSet>
        <item>
            <dimension>
```

```
                <tagSet>
                    <item>
                        <key>environment</key>
                        <value>prod</value>
                    </item>
                </tagSet>
            </dimension>
        </item>
        <item>
            <dimension>
                <tagSet>
                    <item>
                        <key>environment</key>
                        <value>staging</value>
                    </item>
                </tagSet>
            </dimension>
        </item>
        <item>
            <dimension>
                <tagSet>
                    <item>
                        <key>environment</key>
                        <value/>
                    </item>
                </tagSet>
            </dimension>
        </item>
    </metricDimensionResultSet>
</GetCapacityManagerMetricDimensionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetCapacityManagerMonitoredTagKeys

Retrieves the tag keys that are currently being monitored by EC2 Capacity Manager. Monitored tag keys are included as dimensions in capacity metric data, enabling you to group and filter metrics by tag values.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. If not specified, up to 1000 results are returned.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results. Use the value returned from a previous call to retrieve additional results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityManagerTagKeySet**

The list of tag keys being monitored by Capacity Manager, including their current status and metadata.

Type: Array of CapacityManagerMonitoredTagKey objects

**nextToken**

The token to use to retrieve the next page of results. This value is null when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example retrieves the tag keys currently being monitored by Capacity Manager.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetCapacityManagerMonitoredTagKeys
&AUTHPARAMS
```

#### Sample Response

```
<GetCapacityManagerMonitoredTagKeysResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
```

```
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <capacityManagerTagKeySet>
        <item>
            <tagKey>Environment</tagKey>
            <status>activated</status>
            <statusMessage/>
            <capacityManagerProvided>false</capacityManagerProvided>
            <earliestDatapointTimestamp>2025-12-23T20:00:00+00:00</
earliestDatapointTimestamp>
        </item>
        <item>
            <tagKey>aws:autoscaling:groupName</tagKey>
            <status>activated</status>
            <statusMessage/>
            <capacityManagerProvided>true</capacityManagerProvided>
            <earliestDatapointTimestamp>2025-12-23T20:00:00+00:00</
earliestDatapointTimestamp>
        </item>
    </capacityManagerTagKeySet>
</GetCapacityManagerMonitoredTagKeysResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetCapacityReservationUsage

Gets usage information about a Capacity Reservation. If the Capacity Reservation is shared, it shows usage information for the Capacity Reservation owner and each AWS account that is currently using the shared capacity. If the Capacity Reservation is not shared, it shows only the Capacity Reservation owner's usage.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**availableInstanceCount**

The remaining capacity. Indicates the number of instances that can be launched in the Capacity Reservation.

Type: Integer

**capacityReservationId**

The ID of the Capacity Reservation.

Type: String

**instanceType**

The type of instance for which the Capacity Reservation reserves capacity.

Type: String

**instanceUsageSet**

Information about the Capacity Reservation usage.

Type: Array of InstanceUsage objects

**interruptible**

Indicates whether the Capacity Reservation is interruptible, meaning instances may be terminated when the owner reclaims capacity.

Type: Boolean

**interruptibleCapacityAllocation**

Information about the capacity allocated to the interruptible Capacity Reservation, including instance counts and allocation status.

Type: InterruptibleCapacityAllocation object

**interruptionInfo**

Details about the interruption configuration and source reservation for interruptible Capacity Reservations.

Type: InterruptionInfo object

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**state**

The current state of the Capacity Reservation. A Capacity Reservation can be in one of the following states:

- `active` - The capacity is available for use.
- `expired` - The Capacity Reservation expired automatically at the date and time specified in your reservation request. The reserved capacity is no longer available for your use.
- `cancelled` - The Capacity Reservation was canceled. The reserved capacity is no longer available for your use.
- `pending` - The Capacity Reservation request was successful but the capacity provisioning is still pending.
- `failed` - The Capacity Reservation request has failed. A request can fail due to request parameters that are not valid, capacity constraints, or instance limit constraints. You can view a failed request for 60 minutes.
- `scheduled` - (*Future-dated Capacity Reservations*) The future-dated Capacity Reservation request was approved and the Capacity Reservation is scheduled for delivery on the requested start date.
- `payment-pending` - (*Capacity Blocks*) The upfront payment has not been processed yet.
- `payment-failed` - (*Capacity Blocks*) The upfront payment was not processed in the 12-hour time frame. Your Capacity Block was released.

- `assessing` - (*Future-dated Capacity Reservations*) Amazon EC2 is assessing your request for a future-dated Capacity Reservation.
- `delayed` - (*Future-dated Capacity Reservations*) Amazon EC2 encountered a delay in provisioning the requested future-dated Capacity Reservation. Amazon EC2 is unable to deliver the requested capacity by the requested start date and time.
- `unsupported` - (*Future-dated Capacity Reservations*) Amazon EC2 can't support the future-dated Capacity Reservation request due to capacity constraints. You can view unsupported requests for 30 days. The Capacity Reservation will not be delivered.
- `cancelling` - (*Future-dated Capacity Reservations*) The Capacity Reservation is being cancelled. Capacity has been released but charges continue for the commitment wind-down period. The reservation transitions to `cancelled` when the wind-down completes.

Type: String

Valid Values: `active | expired | cancelled | pending | failed | scheduled | payment-pending | payment-failed | assessing | delayed | unsupported | cancelling | unavailable`

**totalInstanceCount**

The number of instances for which the Capacity Reservation reserves capacity.

Type: Integer

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetCoipPoolUsage

Describes the allocations from the specified customer-owned address pool.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `coip-address-usage.allocation-id` - The allocation ID of the address.
- `coip-address-usage.aws-account-id` - The ID of the AWS account that is using the customer-owned IP address.
- `coip-address-usage.aws-service` - The AWS service that is using the customer-owned IP address.
- `coip-address-usage.co-ip` - The customer-owned IP address.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**PoolId**

The ID of the address pool.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**coipAddressUsageSet**

Information about the address usage.

Type: Array of CoipAddressUsage objects

**coipPoolId**

The ID of the customer-owned address pool.

Type: String

**localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetConsoleOutput

Gets the console output for the specified instance. For Linux instances, the instance console output displays the exact console output that would normally be displayed on a physical monitor attached to a computer. For Windows instances, the instance console output includes the last three system event log errors.

For more information, see Instance console output in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**Latest**

When enabled, retrieves the latest console output for the instance.

Default: disabled (`false`)

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**instanceId**

The ID of the instance.

Type: String

**output**

The console output, base64-encoded. If you are using a command line tool, the tool decodes the output for you.

Type: String

**requestId**

The ID of the request.

Type: String

**timestamp**

The time at which the output was last updated.

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example retrieves the console output for the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetConsoleOutput
&InstanceId=i-1234567890abcdef0
```

```
&AUTHPARAMS
```

### Sample Response

```
<GetConsoleOutputResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <timestamp>2022-10-14T01:12:41.000Z</timestamp>
  <output>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hbWF6b25zYSkgKGdj
YyB2ZXJzaW9uIDQuMC4xIDIwMDUwNzI3IChSZWQgSGF0IDQuMC4xLTUpKSAjMSBTTVAgVGh1IE9j
dCAyNiAwODo0MToyNiBTQVNUIDIwMDYKQklPUy1wcm92aWRlZCBwaHlzaWNhbCBSQU0gbWFwOgpY
ZW46IDAwMDAwMDAwMDAwMDAwMDAgLSAwMDAwMDAwMDZhNDAwMDAwICh1c2FibGUpCjk4ME1CIEhJ
R0hNRU0gYXZhaWxhYmxlLgo3MjdNQiBMT1dNRU0gYXZhaWxhYmxlLgpOWCAoRXhlY3V0ZSBEaXNh
YmxlKSBwcm90ZWN0aW9uOiBhY3RpdmUKSVJRIGxvY2t1cCBkZXRlY3Rpb24gZGlzYWJsZWQKQnVp
bHQgMSB6b25lbGlzdHMKS2VybmVsIGNvbW1hbmQgbGluZTogcm9vdD0vZGV2L3NkYTEgcm8gNApF
bmFibGluZyBmYXN0IEZQVSBzYXZlIGFuZCByZXN0b3JlLi4uIGRvbmUuCg==</output>
</GetConsoleOutputResponse>
```

## Example 2

This example retrieves the latest console output for the specified instance.

### Sample Request

```
https://ec2.amazonaws.com/?Action=GetConsoleOutput
&InstanceId=i-1234567890abcdef0
&Latest=true
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetConsoleScreenshot

Retrieve a JPG-format screenshot of a running instance to help with troubleshooting.

The returned content is Base64-encoded.

For more information, see Instance console output in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**WakeUp**

When set to `true`, acts as keystroke input and wakes up an instance that's in standby or "sleep" mode.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**imageData**

The data that comprises the image.

Type: String

**instanceId**

The ID of the instance.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example returns the image data of a successful request.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetConsoleScreenshot
&InstanceId=i-0598c7d356eba48d7
&AUTHPARAMS
```

#### Sample Response

```
<GetConsoleScreenshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageData>997987/8kgj49ikjhewkwwe0008084EXAMPLE</imageData>
  <instanceId>i-765950</instanceId>
</GetConsoleScreenshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetDeclarativePoliciesReportSummary

Retrieves a summary of the account status report.

To view the full report, download it from the Amazon S3 bucket where it was saved. Reports are accessible only when they have the `complete` status. Reports with other statuses (`running`, `cancelled`, or `error`) are not available in the S3 bucket. For more information about downloading objects from an S3 bucket, see Downloading objects in the *Amazon Simple Storage Service User Guide*.

For more information, see Generating the account status report for declarative policies in the *AWS Organizations User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ReportId**

The ID of the report.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**attributeSummarySet**

The attributes described in the report.

Type: Array of AttributeSummary objects

**endTime**

The time when the report generation ended.

Type: Timestamp

**numberOfAccounts**

The total number of accounts associated with the specified `targetId`.

Type: Integer

**numberOfFailedAccounts**

The number of accounts where attributes could not be retrieved in any Region.

Type: Integer

**reportId**

The ID of the report.

Type: String

**requestId**

The ID of the request.

Type: String

**s3Bucket**

The name of the Amazon S3 bucket where the report is located.

Type: String

**s3Prefix**

The prefix for your S3 object.

Type: String

**startTime**

The time when the report generation started.

Type: Timestamp

**targetId**

The root ID, organizational unit ID, or account ID.

Format:

- For root: `r-ab12`
- For OU: `ou-ab12-cdef1234`
- For account: `123456789012`

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetDefaultCreditSpecification

Describes the default credit option for CPU usage of a burstable performance instance family.

For more information, see Burstable performance instances in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceFamily**

The instance family.

Type: String

Valid Values: `t2 | t3 | t3a | t4g`

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceFamilyCreditSpecification**

The default credit option for CPU usage of the instance family.

Type: InstanceFamilyCreditSpecification object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example gets the default credit option for CPU usage of instances in the T2 instance family in the specified Region.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetDefaultCreditSpecification
&Region=us-east-1
&InstanceFamily=t2
&AUTHPARAMS
```

#### Sample Response

```
<GetDefaultCreditSpecificationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>11111111-2222-3333-4444-5555EXAMPLE</requestId>
    <instanceFamilyCreditSpecification>
        <cpuCredits>unlimited</cpuCredits>
        <instanceFamily>t2</instanceFamily>
    </instanceFamilyCreditSpecification>
</GetDefaultCreditSpecificationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetEbsDefaultKmsKeyId

Describes the default AWS KMS key for EBS encryption by default for your account in this Region.

For more information, see Amazon EBS encryption in the *Amazon EBS User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**kmsKeyId**

The Amazon Resource Name (ARN) of the default KMS key for encryption by default.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetEbsEncryptionByDefault

Describes whether EBS encryption by default is enabled for your account in the current Region.

For more information, see Amazon EBS encryption in the *Amazon EBS User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**ebsEncryptionByDefault**

Indicates whether encryption by default is enabled.

Type: Boolean

**requestId**

The ID of the request.

Type: String

**sseType**

Reserved for future use.

Type: String

Valid Values: `sse-ebs | sse-kms | none`

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetEnabledIpamPolicy

Gets the enabled IPAM policy.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPolicyEnabled**

Indicates whether the IPAM policy is enabled.

Type: Boolean

**ipamPolicyId**

The ID of the enabled IPAM policy.

Type: String

**managedBy**

The entity that manages the IPAM policy.

Type: String

Valid Values: `account | delegated-administrator-for-ipam`

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetFlowLogsIntegrationTemplate

Generates a CloudFormation template that streamlines and automates the integration of VPC flow logs with Amazon Athena. This make it easier for you to query and gain insights from VPC flow logs data. Based on the information that you provide, we configure resources in the template to do the following:

- Create a table in Athena that maps fields to a custom log format
- Create a Lambda function that updates the table with new partitions on a daily, weekly, or monthly basis
- Create a table partitioned between two timestamps in the past
- Create a set of named queries in Athena that you can use to get started quickly

> **Note**
>
> `GetFlowLogsIntegrationTemplate` does not support integration between AWS Transit Gateway Flow Logs and Amazon Athena.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ConfigDeliveryS3DestinationArn**

To store the CloudFormation template in Amazon S3, specify the location in Amazon S3.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FlowLogId**

The ID of the flow log.

Type: String

Required: Yes

**IntegrateService**

Information about the service integration.

Type: IntegrateServices object

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**result**

The generated CloudFormation template.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetGroupsForCapacityReservation

Lists the resource groups to which a Capacity Reservation has been added.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId**

The ID of the Capacity Reservation. If you specify a Capacity Reservation that is shared with you, the operation returns only Capacity Reservation groups that you own.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**capacityReservationGroupSet**

Information about the resource groups to which the Capacity Reservation has been added.

Type: Array of CapacityReservationGroup objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetHostReservationPurchasePreview

Preview a reservation purchase with configurations that match those of your Dedicated Host. You must have active Dedicated Hosts in your account before you purchase a reservation.

This is a preview of the PurchaseHostReservation action and does not result in the offering being purchased.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**HostIdSet.N**

The IDs of the Dedicated Hosts with which the reservation is associated.

Type: Array of strings

Required: Yes

**OfferingId**

The offering ID of the reservation.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**currencyCode**

The currency in which the `totalUpfrontPrice` and `totalHourlyPrice` amounts are specified. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

**purchase**

The purchase information of the Dedicated Host reservation and the Dedicated Hosts associated with it.

Type: Array of Purchase objects

**requestId**

The ID of the request.

Type: String

**totalHourlyPrice**

The potential total hourly price of the reservation per hour.

Type: String

**totalUpfrontPrice**

The potential total upfront price. This is billed immediately.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example is a preview of the reservation to be purchased.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetHostReservationPurchasePreview
&OfferingId=hro-0eb3541dght849c2d
&HostIdSet=h-0fgr9ddb0ecd0a1cd
&AUTHPARAMS
```

### Sample Response

```
<GetHostReservationPurchasePreviewResult xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>d4904fd9-84c3-4967-gtyk-a9983EXAMPLE</requestId>
        <purchase>
            <item>
                <duration>31536000</duration>
                <upfrontPrice>7453.000</upfrontPrice>
                <paymentOption>PartialUpfront</paymentOption>
                <instanceFamily>m4</instanceFamily>
                <hourlyPrice>0.850</hourlyPrice>
                <hostIdSet>
                    <item>h-0fgr9ddb0ecd0a1cd</item>
                </hostIdSet>
            </item>
       </purchase>
       <totalHourlyPrice>0.850<totalHourlyPrice>
       <totalUpfrontPrice>7453.000<totalUpfrontPrice>
</GetHostReservationPurchasePreviewResult>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetImageAncestry

Retrieves the ancestry chain of the specified AMI, tracing its lineage back to the root AMI. For more information, see AMI ancestry in *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI whose ancestry you want to trace.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**imageAncestryEntrySet**

A list of entries in the AMI ancestry chain, from the specified AMI to the root AMI.

Type: Array of ImageAncestryEntry objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetImageBlockPublicAccessState

Gets the current state of *block public access for AMIs* at the account level in the specified AWS Region.

For more information, see Block public access to your AMIs in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**imageBlockPublicAccessState**

The current state of block public access for AMIs at the account level in the specified AWS Region.

Possible values:

- `block-new-sharing` - Any attempt to publicly share your AMIs in the specified Region is blocked.
- `unblocked` - Your AMIs in the specified Region can be publicly shared.

Type: String

**managedBy**

The entity that manages the state for block public access for AMIs. Possible values include:

- `account` - The state is managed by the account.
- `declarative-policy` - The state is managed by a declarative policy and can't be modified by the account.

Type: String

Valid Values: `account | declarative-policy`

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example gets the state of *block public access for AMIs* at the account level in the specified Region to see whether the public sharing of your AMIs is blocked in your account. The value for the response is either `block-new-sharing` or `unblocked`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetImageBlockPublicAccessState
&Region=us-east-1
&AUTHPARAMS
```

#### Sample Response

```
<GetImageBlockPublicAccessStateResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>11aabb229-4eac-35bd-99ed-be587EXAMPLE</requestId>
  <return>block-new-sharing</return>
</GetImageBlockPublicAccessStateResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetInstanceMetadataDefaults

Gets the default instance metadata service (IMDS) settings that are set at the account level in the specified AWS
Region.

For more information, see Order of precedence for instance metadata options in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**accountLevel**

The account-level default IMDS settings.

Type: InstanceMetadataDefaultsResponse object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetInstanceTpmEkPub

Gets the public endorsement key associated with the Nitro Trusted Platform Module (NitroTPM) for the specified instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Specify this parameter to verify whether the request will succeed, without actually making the request. If the request will succeed, the response is `DryRunOperation`. Otherwise, the response is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance for which to get the public endorsement key.

Type: String

Required: Yes

**KeyFormat**

The required public endorsement key format. Specify `der` for a DER-encoded public key that is compatible with OpenSSL. Specify `tpmt` for a TPM 2.0 format that is compatible with tpm2-tools. The returned key is base64 encoded.

Type: String

Valid Values: `der | tpmt`

Required: Yes

**KeyType**

The required public endorsement key type.

Type: String

Valid Values: `rsa-2048 | ecc-sec-p384`

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceId**

The ID of the instance.

Type: String

**keyFormat**

The public endorsement key format.

Type: String

Valid Values: `der | tpmt`

**keyType**

The public endorsement key type.

Type: String

Valid Values: `rsa-2048 | ecc-sec-p384`

**keyValue**

The public endorsement key material.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetInstanceTypesFromInstanceRequirements

Returns a list of instance types with the specified instance attributes. You can use the response to preview the instance types without launching instances. Note that the response does not consider capacity.

When you specify multiple parameters, you get instance types that satisfy all of the specified parameters. If you specify multiple values for a parameter, you get instance types that satisfy any of the specified values.

For more information, see Preview instance types with specified attributes, Specify attributes for instance type selection for EC2 Fleet or Spot Fleet, and Spot placement score in the *Amazon EC2 User Guide*, and Creating mixed instance groups using attribute-based instance type selection in the *Amazon EC2 Auto Scaling User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ArchitectureType.N**

The processor architecture type.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 3 items.

Valid Values: `i386 | x86_64 | arm64 | x86_64_mac | arm64_mac`

Required: Yes

**Context**

Reserved.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceRequirements**

The attributes required for the instance types.

Type: InstanceRequirementsRequest object

Required: Yes

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**VirtualizationType.N**

The virtualization type.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 2 items.

Valid Values: `hvm | paravirtual`

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceTypeSet**

The instance types with the specified instance attributes.

Type: Array of InstanceTypeInfoFromInstanceRequirements objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetInstanceUefiData

A binary representation of the UEFI variable store. Only non-volatile variables are stored. This is a base64 encoded and zlib compressed binary value that must be properly encoded.

When you use register-image to create an AMI, you can create an exact copy of your variable store by passing the UEFI data in the `UefiData` parameter. You can modify the UEFI data by using the python-uefivars tool on GitHub. You can use the tool to convert the UEFI data into a human-readable format (JSON), which you can inspect and modify, and then convert back into the binary format to use with register-image.

For more information, see UEFI Secure Boot in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance from which to retrieve the UEFI data.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceId**

The ID of the instance from which to retrieve the UEFI data.

Type: String

**requestId**

The ID of the request.

Type: String

**uefiData**

Base64 representation of the non-volatile UEFI variable store.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetIpamAddressHistory

Retrieve historical information about a CIDR within an IPAM scope. For more information, see View the history of IP addresses in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

The CIDR you want the history of. The CIDR can be an IPv4 or IPv6 IP address range. If you enter a /16 IPv4 CIDR, you will get records that match it exactly. You will not get records for any subnets within the /16 CIDR.

Type: String

Required: Yes

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndTime**

The end of the time period for which you are looking for history. If you omit this option, it will default to the current time.

Type: Timestamp

Required: No

**IpamScopeId**

The ID of the IPAM scope that the CIDR is in.

Type: String

Required: Yes

**MaxResults**

The maximum number of historical results you would like returned per page. Defaults to 100.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**StartTime**

The start of the time period for which you are looking for history. If you omit this option, it will default to the value of EndTime.

Type: Timestamp

Required: No

**VpcId**

The ID of the VPC you want your history records filtered by.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**historyRecordSet**

A historical record for a CIDR within an IPAM scope. If the CIDR is associated with an EC2 instance, you will see an object in the response for the instance and one for the network interface.

Type: Array of IpamAddressHistoryRecord objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetIpamDiscoveredAccounts

Gets IPAM discovered accounts. A discovered account is an AWS account that is monitored under a resource discovery. If you have integrated IPAM with AWS Organizations, all accounts in the organization are discovered accounts. Only the IPAM account can get all discovered accounts in the organization.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DiscoveryRegion**

The AWS Region that the account information is returned from.

Type: String

Required: Yes

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

Discovered account filters.

Type: Array of Filter objects

Required: No

**IpamResourceDiscoveryId**

A resource discovery ID.

Type: String

Required: Yes

**MaxResults**

The maximum number of discovered accounts to return in one page of results.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

Specify the pagination token from a previous request to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamDiscoveredAccountSet**

Discovered accounts.

Type: Array of IpamDiscoveredAccount objects

**nextToken**

Specify the pagination token from a previous request to retrieve the next page of results.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetIpamDiscoveredPublicAddresses

Gets the public IP addresses that have been discovered by IPAM.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddressRegion**

The AWS Region for the IP address.

Type: String

Required: Yes

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

Filters.

Type: Array of Filter objects

Required: No

**IpamResourceDiscoveryId**

An IPAM resource discovery ID.

Type: String

Required: Yes

**MaxResults**

The maximum number of IPAM discovered public addresses to return in one page of results.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamDiscoveredPublicAddressSet**

IPAM discovered public addresses.

Type: Array of IpamDiscoveredPublicAddress objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**oldestSampleTime**

The oldest successful resource discovery time.

Type: Timestamp

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetIpamDiscoveredResourceCidrs

Returns the resource CIDRs that are monitored as part of a resource discovery. A discovered resource is a resource CIDR monitored under a resource discovery. The following resources can be discovered: VPCs, Public IPv4 pools, VPC subnets, and Elastic IP addresses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

Filters.

Type: Array of Filter objects

Required: No

**IpamResourceDiscoveryId**

A resource discovery ID.

Type: String

Required: Yes

**MaxResults**

The maximum number of discovered resource CIDRs to return in one page of results.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

Specify the pagination token from a previous request to retrieve the next page of results.

Type: String

Required: No

**ResourceRegion**

A resource Region.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamDiscoveredResourceCidrSet**

Discovered resource CIDRs.

Type: Array of IpamDiscoveredResourceCidr objects

**nextToken**

Specify the pagination token from a previous request to retrieve the next page of results.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetIpamPolicyAllocationRules

Gets the allocation rules for an IPAM policy.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

Allocation rules are optional configurations within an IPAM policy that map AWS resource types to specific IPAM pools. If no rules are defined, the resource types default to using Amazon-provided IP addresses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters for the allocation rules.

Type: Array of Filter objects

Required: No

**IpamPolicyId**

The ID of the IPAM policy for which to get allocation rules.

Type: String

Required: Yes

**Locale**

The locale for which to get the allocation rules.

Type: String

Required: No

**MaxResults**

The maximum number of results to return in a single call.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**ResourceType**

The resource type for which to get the allocation rules.

The AWS service or resource type that can use IP addresses through IPAM policies. Supported services and resource types include:

- Elastic IP addresses

Type: String

Valid Values: `alb | eip | rds | rnat`

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPolicyDocumentSet**

The IPAM policy documents containing the allocation rules.

Allocation rules are optional configurations within an IPAM policy that map AWS resource types to specific IPAM pools. If no rules are defined, the resource types default to using Amazon-provided IP addresses.

Type: Array of IpamPolicyDocument objects

**nextToken**

The token to use to retrieve the next page of results.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# GetIpamPolicyOrganizationTargets

Gets the AWS Organizations targets for an IPAM policy.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

A target can be an individual AWS account or an entity within an AWS Organization to which an IPAM policy can be applied.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters for the AWS Organizations targets.

Type: Array of Filter objects

Required: No

**IpamPolicyId**

The ID of the IPAM policy for which to get AWS Organizations targets.

Type: String

Required: Yes

**MaxResults**

The maximum number of results to return in a single call.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results.

Type: String

**organizationTargetSet**

The IDs of the AWS Organizations targets.

A target can be an individual AWS account or an entity within an AWS Organization to which an IPAM policy can be applied.

Type: Array of IpamPolicyOrganizationTarget objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetIpamPoolAllocations

Get a list of all the CIDR allocations in an IPAM pool. The Region you use should be the IPAM pool locale. The locale is the AWS Region where this IPAM pool is available for allocations.

> **Note**
>
> If you use this action after AllocateIpamPoolCidr or ReleaseIpamPoolAllocation, note that all EC2 API actions follow an eventual consistency model.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters for the request. For more information about filtering, see Filtering CLI output.

Type: Array of Filter objects

Required: No

**IpamPoolAllocationId**

The ID of the allocation.

Type: String

Required: No

**IpamPoolId**

The ID of the IPAM pool you want to see the allocations for.

Type: String

Required: Yes

**MaxResults**

The maximum number of results you would like returned per page.

Type: Integer

Valid Range: Minimum value of 1000. Maximum value of 100000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPoolAllocationSet**

The IPAM pool allocations you want information on.

Type: Array of IpamPoolAllocation objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetIpamPoolCidrs

Get the CIDRs provisioned to an IPAM pool.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters for the request. For more information about filtering, see Filtering CLI output.

Type: Array of Filter objects

Required: No

**IpamPoolId**

The ID of the IPAM pool you want the CIDR for.

Type: String

Required: Yes

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPoolCidrSet**

Information about the CIDRs provisioned to an IPAM pool.

Type: Array of IpamPoolCidr objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetIpamPrefixListResolverRules

Retrieves the CIDR selection rules for an IPAM prefix list resolver. Use this operation to view the business logic that determines which CIDRs are selected for synchronization with prefix lists.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to limit the results.

Type: Array of Filter objects

Required: No

**IpamPrefixListResolverId**

The ID of the IPAM prefix list resolver whose rules you want to retrieve.

Type: String

Required: Yes

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**ruleSet**

The CIDR selection rules for the IPAM prefix list resolver.

Type: Array of IpamPrefixListResolverRule objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetIpamPrefixListResolverVersionEntries

Retrieves the CIDR entries for a specific version of an IPAM prefix list resolver. This shows the actual CIDRs that were selected and synchronized at a particular point in time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPrefixListResolverId**

The ID of the IPAM prefix list resolver whose version entries you want to retrieve.

Type: String

Required: Yes

**IpamPrefixListResolverVersion**

The version number of the resolver for which to retrieve CIDR entries. If not specified, the latest version is used.

Type: Long

Required: Yes

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**entrySet**

The CIDR entries for the specified resolver version.

Type: Array of IpamPrefixListResolverVersionEntry objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetIpamPrefixListResolverVersions

Retrieves version information for an IPAM prefix list resolver.

Each version is a snapshot of what CIDRs matched your rules at that moment in time. The version number increments every time the CIDR list changes due to infrastructure changes.

**Version example:**

**Initial State (Version 1)**

Production environment:

- vpc-prod-web (10.1.0.0/16) - tagged env=prod
- vpc-prod-db (10.2.0.0/16) - tagged env=prod

Resolver rule: Include all VPCs tagged env=prod

**Version 1 CIDRs:** 10.1.0.0/16, 10.2.0.0/16

**Infrastructure Change (Version 2)**

New VPC added:

- vpc-prod-api (10.3.0.0/16) - tagged env=prod

IPAM automatically detects the change and creates a new version.

**Version 2 CIDRs:** 10.1.0.0/16, 10.2.0.0/16, 10.3.0.0/16

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to limit the results.

Type: Array of Filter objects

Required: No

**IpamPrefixListResolverId**

The ID of the IPAM prefix list resolver whose versions you want to retrieve.

Type: String

Required: Yes

**IpamPrefixListResolverVersion.N**

Specific version numbers to retrieve. If not specified, all versions are returned.

Type: Array of longs

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPrefixListResolverVersionSet**

Information about the IPAM prefix list resolver versions.

Type: Array of IpamPrefixListResolverVersion objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

# GetIpamResourceCidrs

Returns resource CIDRs managed by IPAM in a given scope. If an IPAM is associated with more than one resource discovery, the resource CIDRs across all of the resource discoveries is returned. A resource discovery is an IPAM component that enables IPAM to manage and monitor resources that belong to the owning account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters for the request. For more information about filtering, see Filtering CLI output.

Type: Array of Filter objects

Required: No

**IpamPoolId**

The ID of the IPAM pool that the resource is in.

Type: String

Required: No

**IpamScopeId**

The ID of the scope that the resource is in.

Type: String

Required: Yes

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**ResourceId**

The ID of the resource.

Type: String

Required: No

**ResourceOwner**

The ID of the AWS account that owns the resource.

Type: String

Required: No

**ResourceTag**

The resource tag.

Type: RequestIpamResourceTag object

Required: No

**ResourceType**

The resource type.

Type: String

Valid Values: `vpc | subnet | eip | public-ipv4-pool | ipv6-pool | eni | anycast-ip-list`

Required: No

## Response Elements

The following elements are returned by the service.

**ipamResourceCidrSet**

The resource CIDRs.

Type: Array of IpamResourceCidr objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetLaunchTemplateData

Retrieves the configuration data of the specified instance. You can use this data to create a launch template.

This action calls on other describe actions to get instance information. Depending on your instance configuration, you may need to allow the following actions in your IAM policy: `DescribeSpotInstanceRequests`, `DescribeInstanceCreditSpecifications`, `DescribeVolumes`, and `DescribeInstanceAttribute`. Or, you can allow `describe*` depending on your instance requirements.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**launchTemplateData**

The instance data.

Type: ResponseLaunchTemplateData object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example gets the data for instance `i-123456abcabc123ab`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetLaunchTemplateData
&InstanceId=i-123456abcabc123ab
&AUTHPARAMS
```

#### Sample Response

```
<GetLaunchTemplateDataResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>57372b95-c320-409e-b268-1e4example</requestId>
    <launchTemplateData>
        <blockDeviceMappingSet>
            <item>
                <deviceName>/dev/xvda</deviceName>
                <ebs>
                    <deleteOnTermination>true</deleteOnTermination>
                </ebs>
            </item>
        </blockDeviceMappingSet>
        <ebsOptimized>false</ebsOptimized>
        <iamInstanceProfile>
            <arn>arn:aws:iam::123456789012:instance-profile/AdminRole</arn>
        </iamInstanceProfile>
        <imageId>ami-1a2b3c4d</imageId>
        <instanceType>t2.micro</instanceType>
```

```
        <keyName>kp-us-east</keyName>
        <monitoring/>
        <networkInterfaceSet>
            <item>
                <description>Primary network interface</description>
                <groupSet>
                    <groupId>sg-7c227abc</groupId>
                </groupSet>
                <ipv6AddressesSet/>
                <networkInterfaceId>eni-d26c8f36</networkInterfaceId>
                <privateIpAddress>10.0.0.197</privateIpAddress>
                <privateIpAddressesSet>
                    <item>
                        <primary>true</primary>
                        <privateIpAddress>10.0.0.197</privateIpAddress>
                    </item>
                </privateIpAddressesSet>
                <subnetId>subnet-7b16dabc</subnetId>
            </item>
            <item>
                <description>my network interface</description>
                <groupSet>
                    <groupId>sg-54e8b123</groupId>
                </groupSet>
                <ipv6AddressesSet/>
                <networkInterfaceId>eni-714bc4a5</networkInterfaceId>
                <privateIpAddress>10.0.0.190</privateIpAddress>
                <privateIpAddressesSet>
                    <item>
                        <primary>true</primary>
                        <privateIpAddress>10.0.0.190</privateIpAddress>
                    </item>
                </privateIpAddressesSet>
                <subnetId>subnet-7b16de0c</subnetId>
            </item>
        </networkInterfaceSet>
        <placement>
            <availabilityZone>us-east-1a</availabilityZone>
            <groupName/>
            <tenancy>default</tenancy>
        </placement>
    </launchTemplateData>
</GetLaunchTemplateDataResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetManagedPrefixListAssociations

Gets information about the resources that are associated with the specified managed prefix list.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**PrefixListId**

The ID of the prefix list.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**prefixListAssociationSet**

Information about the associations.

Type: Array of PrefixListAssociation objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example gets the associations for the specified managed prefix list.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetManagedPrefixListAssociations
&PrefixListId=pl-0123123123123aabb
&AUTHPARAMS
```

#### Sample Response

```
<GetManagedPrefixListAssociationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
```

```
    <requestId>3ae1bcdf-4042-47f8-9b8a-example</requestId>
    <prefixListAssociationSet>
        <item>
            <resourceId>sg-01234567811abcaba</resourceId>
            <resourceOwner>123456789012</resourceOwner>
        </item>
    </prefixListAssociationSet>
</GetManagedPrefixListAssociationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetManagedPrefixListEntries

Gets information about the entries for a specified managed prefix list.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**PrefixListId**

The ID of the prefix list.

Type: String

Required: Yes

**TargetVersion**

The version of the prefix list for which to return the entries. The default is the current version.

Type: Long

Required: No

## Response Elements

The following elements are returned by the service.

**entrySet**

Information about the prefix list entries.

Type: Array of PrefixListEntry objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example gets the entries for the specified managed prefix list.

### Sample Request

```
https://ec2.amazonaws.com/?Action=GetManagedPrefixListEntries
&PrefixListId=pl-0123123123123aabb
&AUTHPARAMS
```

### Sample Response

```
<GetManagedPrefixListEntriesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>39a3c79f-846f-4382-a592-example</requestId>
    <entrySet>
        <item>
            <cidr>10.0.0.0/16</cidr>
            <description>vpc-a</description>
        </item>
        <item>
            <cidr>10.2.0.0/16</cidr>
            <description>NY office</description>
        </item>
    </entrySet>
</GetManagedPrefixListEntriesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetManagedResourceVisibility

Retrieves the managed resource visibility configuration for the account. The response indicates whether managed resources are hidden or visible by default.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**visibility**

The managed resource visibility settings for the account.

Type: ManagedResourceVisibilitySettings object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetNetworkInsightsAccessScopeAnalysisFindings

Gets the findings for the specified Network Access Scope analysis.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NetworkInsightsAccessScopeAnalysisId**

The ID of the Network Access Scope analysis.

Type: String

Required: Yes

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**analysisFindingSet**

The findings associated with Network Access Scope Analysis.

Type: Array of AccessScopeAnalysisFinding objects

**analysisStatus**

The status of Network Access Scope Analysis.

Type: String

Valid Values: `running | succeeded | failed`

**networkInsightsAccessScopeAnalysisId**

The ID of the Network Access Scope analysis.

Type: String

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetNetworkInsightsAccessScopeContent

Gets the content for the specified Network Access Scope.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkInsightsAccessScopeId**

The ID of the Network Access Scope.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**networkInsightsAccessScopeContent**

The Network Access Scope content.

Type: NetworkInsightsAccessScopeContent object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetPasswordData

Retrieves the encrypted administrator password for a running Windows instance.

The Windows password is generated at boot by the `EC2Config` service or `EC2Launch` scripts (Windows Server 2016 and later). This usually only happens the first time an instance is launched. For more information, see EC2Config and EC2Launch in the *Amazon EC2 User Guide*.

For the `EC2Config` service, the password is not generated for rebundled AMIs unless `Ec2SetPassword` is enabled before bundling.

The password is encrypted using the key pair that you specified when you launched the instance. You must provide the corresponding key pair file.

When you launch an instance, password generation and encryption may take a few minutes. If you try to retrieve the password before it's available, the output returns an empty string. We recommend that you wait up to 15 minutes after launching an instance before trying to retrieve the generated password.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the Windows instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceId**

The ID of the Windows instance.

Type: String

**passwordData**

The password of the instance. Returns an empty string if the password is not available.

Type: String

**requestId**

The ID of the request.

Type: String

**timestamp**

The time the data was last updated.

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example returns the encrypted version of the administrator password for the specified instance.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=GetPasswordData
&InstanceId=i-1234567890abcdef0
```

```
&AUTHPARAMS
```

### Sample Response

```
<GetPasswordDataResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <timestamp>2009-10-24 15:00:00</timestamp>

 <passwordData>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hbWF6b25zYSkgKGdj</
passwordData>
</GetPasswordDataResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetReservedInstancesExchangeQuote

Returns a quote and exchange information for exchanging one or more specified Convertible Reserved Instances for a new Convertible Reserved Instance. If the exchange cannot be performed, the reason is returned in the response. Use AcceptReservedInstancesExchangeQuote to perform the exchange.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ReservedInstanceId.N**

The IDs of the Convertible Reserved Instances to exchange.

Type: Array of strings

Required: Yes

**TargetConfiguration.N**

The configuration of the target Convertible Reserved Instance to exchange for your current Convertible Reserved Instances.

Type: Array of TargetConfigurationRequest objects

Required: No

## Response Elements

The following elements are returned by the service.

**currencyCode**

The currency of the transaction.

Type: String

**isValidExchange**

If `true`, the exchange is valid. If `false`, the exchange cannot be completed.

Type: Boolean

**outputReservedInstancesWillExpireAt**

The new end date of the reservation term.

Type: Timestamp

**paymentDue**

The total true upfront charge for the exchange.

Type: String

**requestId**

The ID of the request.

Type: String

**reservedInstanceValueRollup**

The cost associated with the Reserved Instance.

Type: ReservationValue object

**reservedInstanceValueSet**

The configuration of your Convertible Reserved Instances.

Type: Array of ReservedInstanceReservationValue objects

**targetConfigurationValueRollup**

The cost associated with the Reserved Instance.

Type: ReservationValue object

**targetConfigurationValueSet**

The values of the target Convertible Reserved Instances.

Type: Array of TargetReservationValue objects

**validationFailureReason**

Describes the reason why the exchange cannot be completed.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example describes the output of requesting whether a potential exchange is valid.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetReservedInstancesExchangeQuote
&ReservedInstanceId.1=649fd0c8-7768-46b8-8f84-a6400EXAMPLE
&TargetConfiguration.1.OfferingId=24167194-6541-4041-9e31-bc7c5984aa53
&AUTHPARAMS
```

#### Sample Response

```
<GetReservedInstancesExchangeQuoteResponse>
  <requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>
  <outputReservedInstancesWillExpireAt>2019-05-17T12:32:53Z</
outputReservedInstancesWillExpireAt>
  <reservedInstanceValueSet>
    <item>
        <reservedInstancesId>649fd0c8-7768-46b8-8f84-a6400EXAMPLE</reservedInstanceId>
        <reservationValue>
            <remainingTotalValue>98.048402</remainingTotalValue>
```

```
            <hourlyPrice>0.018000</hourlyPrice>
            <remainingUpfrontValue>631.0</remainingUpfrontValue>
        </reservationValue>
    </item>
  </reservedInstanceValueSet>
  <targetConfigurationValueSet>
  <isValidExchange>false</isValidExchange>
  <paymentDue>-448.416438</paymentDue>
  <targetConfigurationValueRollup>
          <remainingTotalValue>0</remainingTotalValue>
          <hourlyPrice>0</hourlyPrice>
          <remainingUpfrontValue>0</remainingUpfrontValue>
  <targetConfigurationValueRollup>
  <reservedInstanceValueRollup>
          <remainingTotalValue>873.504438</remainingTotalValue>
          <hourlyPrice>0.018000</hourlyPrice>
          <remainingUpfrontValue>448.416438</remainingUpfrontValue>
  </reservedInstanceValueRollup>
  <currencyCode>USD</currencyCode>
  <validationFailureReason>The target configuration value is less than the input</
validationFailureReason>
</GetReservedInstancesExchangeQuoteResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetRouteServerAssociations

Gets information about the associations for the specified route server.

A route server association is the connection established between a route server and a VPC.

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteServerId**

The ID of the route server for which to get association information.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServerAssociationSet**

Information about the associations for the specified route server.

Type: Array of RouteServerAssociation objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetRouteServerPropagations

Gets information about the route propagations for the specified route server.

When enabled, route server propagation installs the routes in the FIB on the route table you've specified. Route server supports IPv4 and IPv6 route propagation.

Amazon VPC Route Server simplifies routing for traffic between workloads that are deployed within a VPC and its internet gateways. With this feature, VPC Route Server dynamically updates VPC and internet gateway route tables with your preferred IPv4 or IPv6 routes to achieve routing fault tolerance for those workloads. This enables you to automatically reroute traffic within a VPC, which increases the manageability of VPC routing and interoperability with third-party workloads.

Route server supports the follow route table types:

- VPC route tables not associated with subnets
- Subnet route tables
- Internet gateway route tables

Route server does not support route tables associated with virtual private gateways. To propagate routes into a transit gateway route table, use Transit Gateway Connect.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteServerId**

The ID of the route server for which to get propagation information.

Type: String

Required: Yes

**RouteTableId**

The ID of the route table for which to get propagation information.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServerPropagationSet**

Information about the route propagations for the specified route server.

Type: Array of RouteServerPropagation objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetRouteServerRoutingDatabase

Gets the routing database for the specified route server. The Routing Information Base (RIB) serves as a database that stores all the routing information and network topology data collected by a router or routing system, such as routes learned from BGP peers. The RIB is constantly updated as new routing information is received or existing routes change. This ensures that the route server always has the most current view of the network topology and can make optimal routing decisions.

Amazon VPC Route Server simplifies routing for traffic between workloads that are deployed within a VPC and its internet gateways. With this feature, VPC Route Server dynamically updates VPC and internet gateway route tables with your preferred IPv4 or IPv6 routes to achieve routing fault tolerance for those workloads. This enables you to automatically reroute traffic within a VPC, which increases the manageability of VPC routing and interoperability with third-party workloads.

Route server supports the follow route table types:

- VPC route tables not associated with subnets
- Subnet route tables
- Internet gateway route tables

Route server does not support route tables associated with virtual private gateways. To propagate routes into a transit gateway route table, use Transit Gateway Connect.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

Filters to apply to the routing database query.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of routing database entries to return in a single response.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**RouteServerId**

The ID of the route server for which to get the routing database.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**areRoutesPersisted**

Indicates whether routes are being persisted in the routing database.

Type: Boolean

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**routeSet**

The collection of routes in the route server's routing database.

Type: Array of RouteServerRoute objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetSecurityGroupsForVpc

Gets security groups that can be associated by the AWS account making the request with network interfaces in the specified VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters. If using multiple filters, the results include security groups which match all filters.

- `group-id`: The security group ID.
- `description`: The security group's description.
- `group-name`: The security group name.
- `owner-id`: The security group owner ID.
- `primary-vpc-id`: The VPC ID in which the security group was created.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**VpcId**

The VPC ID where the security group can be used.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**securityGroupForVpcSet**

The security group that can be used by interfaces in the VPC.

Type: Array of SecurityGroupForVpc objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetSerialConsoleAccessStatus

Retrieves the access status of your account to the EC2 serial console of all instances. By default, access to the EC2 serial console is disabled for your account. For more information, see Manage account access to the EC2 serial console in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**managedBy**

The entity that manages access to the serial console. Possible values include:

- `account` - Access is managed by the account.
- `declarative-policy` - Access is managed by a declarative policy and can't be modified by the account.

Type: String

Valid Values: `account | declarative-policy`

**requestId**

The ID of the request.

Type: String

**serialConsoleAccessEnabled**

If `true`, access to the EC2 serial console of all instances is enabled for your account. If `false`, access to the EC2 serial console of all instances is disabled for your account.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetSnapshotBlockPublicAccessState

Gets the current state of *block public access for snapshots* setting for the account and Region.

For more information, see Block public access for snapshots in the *Amazon EBS User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**managedBy**

The entity that manages the state for block public access for snapshots. Possible values include:

- `account` - The state is managed by the account.
- `declarative-policy` - The state is managed by a declarative policy and can't be modified by the account.

Type: String

Valid Values: `account | declarative-policy`

**requestId**

The ID of the request.

Type: String

**state**

The current state of block public access for snapshots. Possible values include:

- `block-all-sharing` - All public sharing of snapshots is blocked. Users in the account can't request new public sharing. Additionally, snapshots that were already publicly shared are treated as private and are not publicly available.
- `block-new-sharing` - Only new public sharing of snapshots is blocked. Users in the account can't request new public sharing. However, snapshots that were already publicly shared, remain publicly available.
- `unblocked` - Public sharing is not blocked. Users can publicly share snapshots.

Type: String

Valid Values: `block-all-sharing | block-new-sharing | unblocked`

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetSpotPlacementScores

Calculates the Spot placement score for a Region or Availability Zone based on the specified target capacity and compute requirements.

You can specify your compute requirements either by using `InstanceRequirementsWithMetadata` and letting Amazon EC2 choose the optimal instance types to fulfill your Spot request, or you can specify the instance types by using `InstanceTypes`.

For more information, see Spot placement score in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceRequirementsWithMetadata**

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

If you specify `InstanceRequirementsWithMetadata`, you can't specify `InstanceTypes`.

Type: InstanceRequirementsWithMetadataRequest object

Required: No

**InstanceType.N**

The instance types. We recommend that you specify at least three instance types. If you specify one or two instance types, or specify variations of a single instance type (for example, an `m3.xlarge` with and without instance storage), the returned placement score will always be low.

If you specify `InstanceTypes`, you can't specify `InstanceRequirementsWithMetadata`.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 1000 items.

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 10. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**RegionName.N**

The Regions used to narrow down the list of Regions to be scored. Enter the Region code, for example, `us-east-1`.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: No

**SingleAvailabilityZone**

Specify `true` so that the response returns a list of scored Availability Zones. Otherwise, the response returns a list of scored Regions.

A list of scored Availability Zones is useful if you want to launch all of your Spot capacity into a single Availability Zone.

Type: Boolean

Required: No

**TargetCapacity**

The target capacity.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 2000000000.

Required: Yes

**TargetCapacityUnitType**

The unit for the target capacity.

Type: String

Valid Values: `vcpu | memory-mib | units`

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**spotPlacementScoreSet**

The Spot placement score for the top 10 Regions or Availability Zones, scored on a scale from 1 to 10. Each score

reflects how likely it is that each Region or Availability Zone will succeed at fulfilling the specified target capacity
*at the time of the Spot placement score request*. A score of `10` means that your Spot capacity request is highly likely to succeed in that Region or Availability Zone.

If you request a Spot placement score for Regions, a high score assumes that your fleet request will be configured to use all Availability Zones and the `capacity-optimized` allocation strategy. If you request a Spot placement score for Availability Zones, a high score assumes that your fleet request will be configured to use a single Availability Zone and the `capacity-optimized` allocation strategy.

Different
Regions or Availability Zones might return the same score.

> **Note**
>
> The Spot placement score serves as a recommendation only. No score guarantees that your Spot request will be fully or partially fulfilled.

Type: Array of SpotPlacementScore objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetSubnetCidrReservations

Gets information about the subnet CIDR reservations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `reservationType` - The type of reservation (`prefix` | `explicit`).
- `subnet-id` - The ID of the subnet.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**SubnetId**

The ID of the subnet.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**subnetIpv4CidrReservationSet**

Information about the IPv4 subnet CIDR reservations.

Type: Array of SubnetCidrReservation objects

**subnetIpv6CidrReservationSet**

Information about the IPv6 subnet CIDR reservations.

Type: Array of SubnetCidrReservation objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetTransitGatewayAttachmentPropagations

Lists the route tables to which the specified resource attachment propagates routes.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `transit-gateway-route-table-id` - The ID of the transit gateway route table.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayAttachmentPropagations**

Information about the propagation route tables.

Type: Array of TransitGatewayAttachmentPropagation objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetTransitGatewayMeteringPolicyEntries

Retrieves the entries for a transit gateway metering policy.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters to apply when retrieving metering policy entries.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayMeteringPolicyId**

The ID of the transit gateway metering policy to retrieve entries for.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayMeteringPolicyEntries**

Information about the transit gateway metering policy entries.

Type: Array of TransitGatewayMeteringPolicyEntry objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetTransitGatewayMulticastDomainAssociations

Gets information about the associations for the transit gateway multicast domain.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `resource-id` - The ID of the resource.
- `resource-type` - The type of resource. The valid value is: `vpc`.
- `state` - The state of the subnet association. Valid values are `associated` | `associating` | `disassociated` | `disassociating`.
- `subnet-id` - The ID of the subnet.
- `transit-gateway-attachment-id` - The id of the transit gateway attachment.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**multicastDomainAssociations**

Information about the multicast domain associations.

Type: Array of TransitGatewayMulticastDomainAssociation objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example gets the multicast domain `tgw-attach-028c1dd0f8EXAMPLE` associations.

### Sample Request

```
https://ec2.amazonaws.com/?Action=GetTransitGatewayMulticastDomainAssociations
&TransitGatewayMulticastDomainId=tgw-attach-028c1dd0f8EXAMPLE
&AUTHPARAMS
```

### Sample Response

```
<GetTransitGatewayMulticastDomainAssociationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>ca392437-3f6c-4193-92cd-24404EXAMPLE</requestId>
    <multicastDomainAssociations>
        <item>
            <resourceId>vpc-01128d2c24EXAMPLE</resourceId>
            <resourceType>vpc</resourceType>
            <subnet>
                <state>associated</state>
                <subnetId>subnet-000de86e3bEXAMPLE</subnetId>
            </subnet>
            <transitGatewayAttachmentId>tgw-attach-028c1dd0f8EXAMPLE</
transitGatewayAttachmentId>
        </item>
        <item>
            <resourceId>vpc-7EXAMPLE</resourceId>
            <resourceType>vpc</resourceType>
            <subnet>
                <state>associated</state>
                <subnetId>subnet-4EXAMPLE</subnetId>
            </subnet>
            <transitGatewayAttachmentId>tgw-attach-070e571cd1EXAMPLE</
transitGatewayAttachmentId>
        </item>
        <item>
            <resourceId>vpc-7f67ec07</resourceId>
            <resourceType>vpc</resourceType>
            <subnet>
```

```
                <state>associated</state>
                <subnetId>subnet-5EXAMPLE</subnetId>
            </subnet>
            <transitGatewayAttachmentId>tgw-attach-070e571cd1EXAMPLE</
transitGatewayAttachmentId>
        </item>
        <item>
            <resourceId>vpc-7EXAMPLE</resourceId>
            <resourceType>vpc</resourceType>
            <subnet>
                <state>associated</state>
                <subnetId>subnet-aEXAMPLE</subnetId>
            </subnet>
            <transitGatewayAttachmentId>tgw-attach-070e571cd1d3ee8e6</
transitGatewayAttachmentId>
        </item>
        <item>
            <resourceId>vpc-7f67ec07</resourceId>
            <resourceType>vpc</resourceType>
            <subnet>
                <state>associated</state>
                <subnetId>subnet-fEXAMPLE</subnetId>
            </subnet>
            <transitGatewayAttachmentId>tgw-attach-070e571cd1EXAMPLE</
transitGatewayAttachmentId>
        </item>
    </multicastDomainAssociations>
</GetTransitGatewayMulticastDomainAssociationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetTransitGatewayPolicyTableAssociations

Gets a list of the transit gateway policy table associations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters associated with the transit gateway policy table.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayPolicyTableId**

The ID of the transit gateway policy table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**associations**

Returns details about the transit gateway policy table association.

Type: Array of TransitGatewayPolicyTableAssociation objects

**nextToken**

The token for the next page of results.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetTransitGatewayPolicyTableEntries

Returns a list of transit gateway policy table entries.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

The filters associated with the transit gateway policy table.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayPolicyTableId**

The ID of the transit gateway policy table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayPolicyTableEntries**

The entries for the transit gateway policy table.

Type: Array of TransitGatewayPolicyTableEntry objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetTransitGatewayPrefixListReferences

Gets information about the prefix list references in a specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `attachment.resource-id` - The ID of the resource for the attachment.
- `attachment.resource-type` - The type of resource for the attachment. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `peering`.
- `attachment.transit-gateway-attachment-id` - The ID of the attachment.
- `is-blackhole` - Whether traffic matching the route is blocked (`true` | `false`).
- `prefix-list-id` - The ID of the prefix list.
- `prefix-list-owner-id` - The ID of the owner of the prefix list.
- `state` - The state of the prefix list reference (`pending` | `available` | `modifying` | `deleting`).

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayPrefixListReferenceSet**

Information about the prefix list references.

Type: Array of TransitGatewayPrefixListReference objects

# Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example gets the prefix list references for the specified transit gateway route table.

### Sample Request

```
https://ec2.amazonaws.com/?Action=GetTransitGatewayPrefixListReferences
&TransitGatewayRouteTableId=tgw-rtb-0f98a0a5d09abcabc
&AUTHPARAMS
```

### Sample Response

```
<GetTransitGatewayPrefixListReferencesResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>b194523f-807a-4a41-920a-example</requestId>
    <transitGatewayPrefixListReferenceSet>
        <item>
            <blackhole>false</blackhole>
            <prefixListId>pl-001122334455aabbc</prefixListId>
            <prefixListOwnerId>123456789012</prefixListOwnerId>
            <state>available</state>
            <transitGatewayAttachment>
                <resourceId>vpn-12312312312312312</resourceId>
                <resourceType>vpn</resourceType>
                <transitGatewayAttachmentId>tgw-attach-01234567abcabcabc</
transitGatewayAttachmentId>
            </transitGatewayAttachment>
            <transitGatewayRouteTableId>tgw-rtb-0f98a0a5d09abcabc</
transitGatewayRouteTableId>
        </item>
    </transitGatewayPrefixListReferenceSet>
</GetTransitGatewayPrefixListReferencesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetTransitGatewayRouteTableAssociations

Gets information about the associations for the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `resource-id` - The ID of the resource.
- `resource-type` - The resource type. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `peering` | `connect`.
- `transit-gateway-attachment-id` - The ID of the attachment.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**associations**

Information about the associations.

Type: Array of TransitGatewayRouteTableAssociation objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetTransitGatewayRouteTablePropagations

Gets information about the route table propagations for the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `resource-id` - The ID of the resource.
- `resource-type` - The resource type. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `peering` | `connect`.
- `transit-gateway-attachment-id` - The ID of the attachment.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayRouteTablePropagations**

Information about the route table propagations.

Type: Array of TransitGatewayRouteTablePropagation objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetVerifiedAccessEndpointPolicy

Get the Verified Access policy associated with the endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessEndpointId**

The ID of the Verified Access endpoint.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**policyDocument**

The Verified Access policy document.

Type: String

**policyEnabled**

The status of the Verified Access policy.

Type: Boolean

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetVerifiedAccessEndpointTargets

Gets the targets for the specified network CIDR endpoint for Verified Access.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**VerifiedAccessEndpointId**

The ID of the network CIDR endpoint.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**verifiedAccessEndpointTargetSet**

The Verified Access targets.

Type: Array of VerifiedAccessEndpointTarget objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetVerifiedAccessGroupPolicy

Shows the contents of the Verified Access policy associated with the group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessGroupId**

The ID of the Verified Access group.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**policyDocument**

The Verified Access policy document.

Type: String

**policyEnabled**

The status of the Verified Access policy.

Type: Boolean

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetVpcResourcesBlockingEncryptionEnforcement

Gets information about resources in a VPC that are blocking encryption enforcement.

For more information, see Enforce VPC encryption in transit in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**VpcId**

The ID of the VPC to check for resources blocking encryption enforcement.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**nonCompliantResourceSet**

Information about resources that are blocking encryption enforcement.

Type: Array of VpcEncryptionNonCompliantResource objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetVpnConnectionDeviceSampleConfiguration

Download an AWS-provided sample configuration file to be used with the customer gateway device specified for your Site-to-Site VPN connection.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InternetKeyExchangeVersion**

The IKE version to be used in the sample configuration file for your customer gateway device. You can specify one of the following versions: `ikev1` or `ikev2`.

Type: String

Required: No

**SampleType**

The type of sample configuration to generate. Valid values are "compatibility" (includes IKEv1) or "recommended" (throws UnsupportedOperationException for IKEv1).

Type: String

Required: No

**VpnConnectionDeviceTypeId**

Device identifier provided by the `GetVpnConnectionDeviceTypes` API.

Type: String

Required: Yes

**VpnConnectionId**

The `VpnConnectionId` specifies the Site-to-Site VPN connection used for the sample configuration.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpnConnectionDeviceSampleConfiguration**

Sample configuration file for the specified customer gateway device.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetVpnConnectionDeviceTypes

Obtain a list of customer gateway devices for which sample configuration files can be provided. The request has no additional parameters. You can also see the list of device types with sample configuration files available under Your customer gateway device in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of results returned by `GetVpnConnectionDeviceTypes` in paginated output. When this parameter is used, `GetVpnConnectionDeviceTypes` only returns `MaxResults` results in a single page along with a `NextToken` response element. The remaining results of the initial request can be seen by sending another `GetVpnConnectionDeviceTypes` request with the returned `NextToken` value. This value can be between 200 and 1000. If this parameter is not used, then `GetVpnConnectionDeviceTypes` returns all results.

Type: Integer

Valid Range: Minimum value of 200. Maximum value of 1000.

Required: No

**NextToken**

The `NextToken` value returned from a previous paginated `GetVpnConnectionDeviceTypes` request where `MaxResults` was used and the results exceeded the value of that parameter.

Pagination continues from the end of the previous results that returned the `NextToken` value. This value is null when there are no more results to return.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The `NextToken` value to include in a future `GetVpnConnectionDeviceTypes` request. When the results of a `GetVpnConnectionDeviceTypes` request exceed `MaxResults`, this value can be used to retrieve the next page of results. This value is null when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**vpnConnectionDeviceTypeSet**

List of customer gateway devices that have a sample configuration file available for use.

Type: Array of VpnConnectionDeviceType objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# GetVpnTunnelReplacementStatus

Get details of available tunnel endpoint maintenance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpnConnectionId**

The ID of the Site-to-Site VPN connection.

Type: String

Required: Yes

**VpnTunnelOutsideIpAddress**

The external IP address of the VPN tunnel.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**customerGatewayId**

The ID of the customer gateway.

Type: String

**maintenanceDetails**

Get details of pending tunnel endpoint maintenance.

Type: MaintenanceDetails object

**requestId**

The ID of the request.

Type: String

**transitGatewayId**

The ID of the transit gateway associated with the VPN connection.

Type: String

**vpnConnectionId**

The ID of the Site-to-Site VPN connection.

Type: String

**vpnGatewayId**

The ID of the virtual private gateway.

Type: String

**vpnTunnelOutsideIpAddress**

The external IP address of the VPN tunnel.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ImportClientVpnClientCertificateRevocationList

Uploads a client certificate revocation list to the specified Client VPN endpoint. Uploading a client certificate revocation list overwrites the existing client certificate revocation list.

Uploading a client certificate revocation list resets existing client connections.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CertificateRevocationList**

The client certificate revocation list file. For more information, see Generate a Client Certificate Revocation List in the *AWS Client VPN Administrator Guide*.

Type: String

Required: Yes

**ClientVpnEndpointId**

The ID of the Client VPN endpoint to which the client certificate revocation list applies.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ImportImage

**Note**

To import your virtual machines (VMs) with a console-based experience, you can use the *Import virtual machine images to AWS* template in the Migration Hub Orchestrator console. For more information, see the *AWS Migration Hub Orchestrator User Guide*.

Import single or multi-volume disk images or EBS snapshots into an Amazon Machine Image (AMI).

**Important**

AWS VM Import/Export strongly recommends specifying a value for either the `--license-type` or `--usage-operation` parameter when you create a new VM Import task. This ensures your operating system is licensed appropriately and your billing is optimized.

For more information, see Importing a VM as an image using VM Import/Export in the *VM Import/Export User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Architecture**

The architecture of the virtual machine.

Valid values: `i386` | `x86_64`

Type: String

Required: No

**BootMode**

The boot mode of the virtual machine.

> **Note**
>
> The `uefi-preferred` boot mode isn't supported for importing images. For more information, see Boot modes in the *VM Import/Export User Guide*.

Type: String

Valid Values: `legacy-bios | uefi | uefi-preferred`

Required: No

**ClientData**

The client-specific data.

Type: ClientData object

Required: No

**ClientToken**

The token to enable idempotency for VM import requests.

Type: String

Required: No

**Description**

A description string for the import image task.

Type: String

Required: No

**DiskContainer.N**

Information about the disk containers.

Type: Array of ImageDiskContainer objects

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Encrypted**

Specifies whether the destination AMI of the imported image should be encrypted. The default KMS key for EBS is used unless you specify a non-default KMS key using `KmsKeyId`. For more information, see Amazon EBS Encryption in the *Amazon Elastic Compute Cloud User Guide*.

Type: Boolean

Required: No

**Hypervisor**

The target hypervisor platform.

Valid values: `xen`

Type: String

Required: No

**KmsKeyId**

An identifier for the symmetric KMS key to use when creating the encrypted AMI. This parameter is only required if you want to use a non-default KMS key; if this parameter is not specified, the default KMS key for EBS is used. If a `KmsKeyId` is specified, the `Encrypted` flag must also be set.

The KMS key identifier may be provided in any of the following formats:

- Key ID
- Key alias
- ARN using key ID. The ID ARN contains the `arn:aws:kms` namespace, followed by the Region of the key, the AWS account ID of the key owner, the `key` namespace, and then the key

ID. For example, arn:aws:kms:*us-east-1*:*012345678910*:key/*abcd1234-a123-456a-a12b-a123b4cd56ef*.

- ARN using key alias. The alias ARN contains the `arn:aws:kms` namespace, followed by the Region of the key, the AWS account ID of the key owner, the `alias` namespace, and then the key alias. For example, arn:aws:kms:*us-east-1*:*012345678910*:alias/*ExampleAlias*.

AWS parses `KmsKeyId` asynchronously, meaning that the action you call may appear to complete even though you provided an invalid identifier. This action will eventually report failure.

The specified KMS key must exist in the Region that the AMI is being copied to.

Amazon EBS does not support asymmetric KMS keys.

Type: String

Required: No

**LicenseSpecifications.N**

The ARNs of the license configurations.

Type: Array of ImportImageLicenseConfigurationRequest objects

Required: No

**LicenseType**

The license type to be used for the Amazon Machine Image (AMI) after importing.

Specify `AWS` to replace the source-system license with an AWS license or `BYOL` to retain the source-system license. Leaving this parameter undefined is the same as choosing `AWS` when importing a Windows Server operating system, and the same as choosing `BYOL` when importing a Windows client operating system (such as Windows 10) or a Linux operating system.

To use `BYOL`, you must have existing licenses with rights to use these licenses in a third party cloud, such as AWS. For more information, see Prerequisites in the VM Import/Export User Guide.

Type: String

Required: No

**Platform**

The operating system of the virtual machine. If you import a VM that is compatible with Unified Extensible Firmware Interface (UEFI) using an EBS snapshot, you must specify a value for the platform.

Valid values: `Windows` | `Linux`

Type: String

Required: No

**RoleName**

The name of the role to use when not using the default role, 'vmimport'.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the import image task during creation.

Type: Array of TagSpecification objects

Required: No

**UsageOperation**

The usage operation value. For more information, see Licensing options in the *VM Import/Export User Guide*.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**architecture**

The architecture of the virtual machine.

Type: String

**description**

A description of the import task.

Type: String

**encrypted**

Indicates whether the AMI is encrypted.

Type: Boolean

**hypervisor**

The target hypervisor of the import task.

Type: String

**imageId**

The ID of the Amazon Machine Image (AMI) created by the import task.

Type: String

**importTaskId**

The task ID of the import image task.

Type: String

**kmsKeyId**

The identifier for the symmetric KMS key that was used to create the encrypted AMI.

Type: String

**licenseSpecifications**

The ARNs of the license configurations.

Type: Array of ImportImageLicenseConfigurationResponse objects

**licenseType**

The license type of the virtual machine.

Type: String

**platform**

The operating system of the virtual machine.

Type: String

**progress**

The progress of the task.

Type: String

**requestId**

The ID of the request.

Type: String

**snapshotDetailSet**

Information about the snapshots.

Type: Array of SnapshotDetail objects

**status**

A brief status of the task.

Type: String

**statusMessage**

A detailed status message of the import task.

Type: String

**tagSet**

Any tags assigned to the import image task.

Type: Array of Tag objects

**usageOperation**

The usage operation value.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ImportInstance

> **Note**
>
> We recommend that you use the `ImportImage` API instead. For more information, see Importing a VM as an image using VM Import/Export in the *VM Import/Export User Guide*.

Creates an import instance task using metadata from the specified disk image.

This API action supports only single-volume VMs. To import multi-volume VMs, use ImportImage instead.

For information about the import manifest referenced by this API action, see VM Import Manifest.

This API action is not supported by the AWS Command Line Interface (AWS CLI).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Description**

A description for the instance being imported.

Type: String

Required: No

**DiskImage.N**

The disk image.

Type: Array of DiskImage objects

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LaunchSpecification**

The launch specification.

Type: ImportInstanceLaunchSpecification object

Required: No

**Platform**

The instance operating system.

Type: String

Valid Values: `Windows`

Required: Yes

## Response Elements

The following elements are returned by the service.

**conversionTask**

Information about the conversion task.

Type: ConversionTask object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example creates an import instance task that migrates a Windows Server 2008 SP2 (32-bit) VM into the `us-east-1` Region.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ImportInstance
&LaunchSpecification.Architecture=x86_64
&LaunchSpecification.InstanceType=m1.xlarge
&DiskImage.1.Image.Format=VMDK
&DiskImage.1.Image.Bytes=1179593728
&DiskImage.1.Image.ImportManifestUrl=https://s3.amazonaws.com/amzn-s3-demo-
bucket/a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-
bit.vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&
Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
&DiskImage.1.Volume.Size=12
&Platform=Windows
&AUTHPARAMS
```

### Sample Response

```
<ImportInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <conversionTask>
    <conversionTaskId>import-i-ffvko9js</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
    <importInstance>
       <volumes>
          <item>
             <bytesConverted>0</bytesConverted>
             <availabilityZone>us-east-1a</availabilityZone>
             <image>
                <format>VMDK</format>
                <size>1179593728</size>
                <importManifestUrl>
                 https://s3.amazonaws.com/amzn-s3-demo-bucket/
a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.
vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&
Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
                </importManifestUrl>
```

```
            </image>
            <description/>
            <volume>
               <size>12</size>
               <id>vol-1234567890abcdef0</id>
            </volume>
            <status>active</status>
            <statusMessage/>
         </item>
      </volumes>
      <instanceId>i-1234567890abcdef0</instanceId>
      <description/>
   </importInstance>
  </conversionTask>
</ImportInstanceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ImportKeyPair

Imports the public key from an RSA or ED25519 key pair that you created using a third-party tool. You give AWS only the public key. The private key is never transferred between you and AWS.

For more information about the requirements for importing a key pair, see Create a key pair and import the public key to Amazon EC2 in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**KeyName**

A unique name for the key pair.

Type: String

Required: Yes

**PublicKeyMaterial**

The public key.

Type: Base64-encoded binary data object

Required: Yes

**TagSpecification.N**

The tags to apply to the imported key pair.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**keyFingerprint**

- For RSA key pairs, the key fingerprint is the MD5 public key fingerprint as specified in section 4 of RFC 4716.
- For ED25519 key pairs, the key fingerprint is the base64-encoded SHA-256 digest, which is the default for OpenSSH, starting with OpenSSH 6.8.

Type: String

**keyName**

The key pair name that you provided.

Type: String

**keyPairId**

The ID of the resulting key pair.

Type: String

**requestId**

The ID of the request.

Type: String

**tagSet**

The tags applied to the imported key pair.

Type: Array of Tag objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example imports the public key named `my-key-pair`, and applies a tag with a key of `purpose` and a value of `production`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ImportKeyPair
&KeyName=my-key-pair
&PublicKeyMaterial=MIICiTCCAfICCQD6m7oRw0uXOjANBgkqhkiG9w0BAQUFADCBiDELMAkGA1UEBhMC
VVMxCzAJBgNVBAgTAldBMRAwDgYDVQQHEwdTZWF0dGxlMQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBAsTC0lBTSBDb25zb2xlMRIwEAYDVQQDEwlUZXN0Q2lsYWMxHzAd
BgkqhkiG9w0BCQEWEG5vb25lQGFtYXpvbi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI0MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAgTAldBMRAwDgYD
VQQHEwdTZWF0dGxlMQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBAsTC0lBTSBDb25z
b2xlMRIwEAYDVQQDEwlUZXN0Q2lsYWMxHzAdBgkqhkiG9w0BCQEWEG5vb25lQGFt
YXpvbi5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySWtC2XADZ4nB+BLYgVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzZswY6786m86gpE
Ibb3OhjZnzcvQAaRHhdlQWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntneD9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJIlJ00zbhNYS5f6GuoEDmFJl0ZxBHjJnyp378OD8uTs7fLvjx79LjSTb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
&TagSpecification.1.ResourceType=key-pair
&TagSpecification.1.Tag.1.Key=purpose
&TagSpecification.1.Tag.1.Value=production
&AUTHPARAMS
```

### Sample Response

```
<ImportKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
    <keyName>my-key-pair</keyName>
    <keyPairId>key-abced1234eEXAMPLE</keyPairId>
    <keyFingerprint>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</
keyFingerprint>
    <tagSet>
        <item>
            <key>purpose</key>
            <value>production</value>
```

```
        </item>
    </tagSet>
</ImportKeyPairResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ImportSnapshot

Imports a disk into an EBS snapshot.

For more information, see Importing a disk as a snapshot using VM Import/Export in the *VM Import/Export User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientData**

The client-specific data.

Type: ClientData object

Required: No

**ClientToken**

Token to enable idempotency for VM import requests.

Type: String

Required: No

**Description**

The description string for the import snapshot task.

Type: String

Required: No

**DiskContainer**

Information about the disk container.

Type: SnapshotDiskContainer object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Encrypted**

Specifies whether the destination snapshot of the imported image should be encrypted. The default KMS key for EBS is used unless you specify a non-default KMS key using `KmsKeyId`. For more information, see Amazon EBS Encryption in the *Amazon Elastic Compute Cloud User Guide*.

Type: Boolean

Required: No

**KmsKeyId**

An identifier for the symmetric KMS key to use when creating the encrypted snapshot. This parameter is only required if you want to use a non-default KMS key; if this parameter is not specified, the default KMS key for EBS is used. If a `KmsKeyId` is specified, the `Encrypted` flag must also be set.

The KMS key identifier may be provided in any of the following formats:

- Key ID
- Key alias
- ARN using key ID. The ID ARN contains the `arn:aws:kms` namespace, followed by the Region of the key, the AWS account ID of the key owner, the `key` namespace, and then the key ID. For example, arn:aws:kms:*us-east-1*:*012345678910*:key/*abcd1234-a123-456a-a12b-a123b4cd56ef*.
- ARN using key alias. The alias ARN contains the `arn:aws:kms` namespace, followed by the Region of the key, the AWS account ID of the key owner, the `alias` namespace, and then the key alias. For example, arn:aws:kms:*us-east-1*:*012345678910*:alias/*ExampleAlias*.

AWS parses `KmsKeyId` asynchronously, meaning that the action you call may appear to complete even though you provided an invalid identifier. This action will eventually report failure.

The specified KMS key must exist in the Region that the snapshot is being copied to.

Amazon EBS does not support asymmetric KMS keys.

Type: String

Required: No

**RoleName**

The name of the role to use when not using the default role, 'vmimport'.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the import snapshot task during creation.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**description**

A description of the import snapshot task.

Type: String

**importTaskId**

The ID of the import snapshot task.

Type: String

**requestId**

The ID of the request.

Type: String

**snapshotTaskDetail**

Information about the import snapshot task.

Type: SnapshotTaskDetail object

**tagSet**

Any tags assigned to the import snapshot task.

Type: Array of Tag objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ImportVolume

> **Note**
>
> This API action supports only single-volume VMs. To import multi-volume VMs, use ImportImage instead. To import a disk to a snapshot, use ImportSnapshot instead.

Creates an import volume task using metadata from the specified disk image.

For information about the import manifest referenced by this API action, see VM Import Manifest.

This API action is not supported by the AWS Command Line Interface (AWS CLI).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZone**

The Availability Zone for the resulting EBS volume.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified, but not both.

Type: String

Required: No

**AvailabilityZoneId**

The ID of the Availability Zone for the resulting EBS volume.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified, but not both.

Type: String

Required: No

**Description**

A description of the volume.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Image**

The disk image.

Type: DiskImageDetail object

Required: Yes

**Volume**

The volume size.

Type: VolumeDetail object

Required: Yes

## Response Elements

The following elements are returned by the service.

**conversionTask**

Information about the conversion task.

Type: ConversionTask object

**requestId**

The ID of the request.

Type: String

# Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example creates an import volume task that migrates a Windows Server 2008 SP2 (32-bit) volume into the `us-east-1` Region.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ImportVolume
&AvailabilityZone=us-east-1c
&Image.Format=VMDK
&Image.Bytes=128696320
&Image.ImportManifestUrl=https://s3.amazonaws.com/amzn-s3-demo-bucket/
a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.
vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&
Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
&Volume.Size=8
&AUTHPARAMS>
```

### Sample Response

```
<ImportVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <conversionTask>
     <conversionTaskId>import-i-fh95npoc</conversionTaskId>
     <expirationTime>2010-12-22T12:01Z</expirationTime>
     <importVolume>
        <bytesConverted>0</bytesConverted>
        <availabilityZone>us-east-1c</availabilityZone>
        <description/>
        <image>
            <format>VDMK</format>
            <size>128696320</size>
            <importManifestUrl>
               https://s3.amazonaws.com/amzn-s3-demo-bucket/
a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.
vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&
Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
```

```
            </importManifestUrl>
            <checksum>ccb1b0536a4a70e86016b85229b5c6b10b14a4eb</checksum>
         </image>
         <volume>
            <size>8</size>
            <id>vol-1234567890abcdef0</id>
         </volume>
      </importVolume>
      <state>active</state>
      <statusMessage/>
   </conversionTask>
</ImportVolumeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ListImagesInRecycleBin

Lists one or more AMIs that are currently in the Recycle Bin. For more information, see Recycle Bin in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId.N**

The IDs of the AMIs to list. Omit this parameter to list all of the AMIs that are in the Recycle Bin. You can specify up to 20 IDs in a single request.

Type: Array of strings

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**imageSet**

Information about the AMIs.

Type: Array of ImageRecycleBinInfo objects

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ListSnapshotsInRecycleBin

Lists one or more snapshots that are currently in the Recycle Bin.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**SnapshotId.N**

The IDs of the snapshots to list. Omit this parameter to list all of the snapshots that are in the Recycle Bin.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**snapshotSet**

Information about the snapshots.

Type: Array of SnapshotRecycleBinInfo objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ListVolumesInRecycleBin

Lists one or more volumes that are currently in the Recycle Bin.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxResults**

The maximum number of items to return for this request. To get the next page of items, make another request with the token returned in the output. For more information, see Pagination.

Valid range: 5 - 500

Type: Integer

Required: No

**NextToken**

The token returned from a previous paginated request. Pagination continues from the end of the items returned by the previous request.

Type: String

Required: No

**VolumeId.N**

The IDs of the volumes to list. Omit this parameter to list all of the volumes that are in the Recycle Bin.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to include in another request to get the next page of items. This value is `null` when there are no more items to return.

Type: String

**requestId**

The ID of the request.

Type: String

**volumeSet**

Information about the volumes.

Type: Array of VolumeRecycleBinInfo objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# LockSnapshot

Locks an Amazon EBS snapshot in either *governance* or *compliance* mode to protect it against accidental or malicious deletions for a specific duration. A locked snapshot can't be deleted.

You can also use this action to modify the lock settings for a snapshot that is already locked. The allowed modifications depend on the lock mode and lock state:

- If the snapshot is locked in governance mode, you can modify the lock mode and the lock duration or lock expiration date.
- If the snapshot is locked in compliance mode and it is in the cooling-off period, you can modify the lock mode and the lock duration or lock expiration date.
- If the snapshot is locked in compliance mode and the cooling-off period has lapsed, you can only increase the lock duration or extend the lock expiration date.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CoolOffPeriod**

The cooling-off period during which you can unlock the snapshot or modify the lock settings after locking the snapshot in compliance mode, in hours. After the cooling-off period expires, you can't unlock or delete the snapshot, decrease the lock duration, or change the lock mode. You can increase the lock duration after the cooling-off period expires.

The cooling-off period is optional when locking a snapshot in compliance mode. If you are locking the snapshot in governance mode, omit this parameter.

To lock the snapshot in compliance mode immediately without a cooling-off period, omit this parameter.

If you are extending the lock duration for a snapshot that is locked in compliance mode after the cooling-off period has expired, omit this parameter. If you specify a cooling-period in a such a request, the request fails.

Allowed values: Min 1, max 72.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 72.

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ExpirationDate**

The date and time at which the snapshot lock is to automatically expire, in the UTC time zone (`YYYY-MM-DDThh:mm:ss.sssZ`).

You must specify either this parameter or **LockDuration**, but not both.

Type: Timestamp

Required: No

**LockDuration**

The period of time for which to lock the snapshot, in days. The snapshot lock will automatically expire after this period lapses.

You must specify either this parameter or **ExpirationDate**, but not both.

Allowed values: Min: 1, max 36500

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 36500.

Required: No

**LockMode**

The mode in which to lock the snapshot. Specify one of the following:

- `governance` - Locks the snapshot in governance mode. Snapshots locked in governance mode can't be deleted until one of the following conditions are met:

- The lock duration expires.
- The snapshot is unlocked by a user with the appropriate permissions.

Users with the appropriate IAM permissions can unlock the snapshot, increase or decrease the lock duration, and change the lock mode to `compliance` at any time.

If you lock a snapshot in `governance` mode, omit **CoolOffPeriod**.

- `compliance` - Locks the snapshot in compliance mode. Snapshots locked in compliance mode can't be unlocked by any user. They can be deleted only after the lock duration expires. Users can't decrease the lock duration or change the lock mode to `governance`. However, users with appropriate IAM permissions can increase the lock duration at any time.

  If you lock a snapshot in `compliance` mode, you can optionally specify **CoolOffPeriod**.

Type: String

Valid Values: `compliance | governance`

Required: Yes

**SnapshotId**

The ID of the snapshot to lock.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**coolOffPeriod**

The compliance mode cooling-off period, in hours.

Type: Integer

**coolOffPeriodExpiresOn**

The date and time at which the compliance mode cooling-off period expires, in the UTC time zone (`YYYY-MM-DDThh:mm:ss.sssZ`).

Type: Timestamp

**lockCreatedOn**

The date and time at which the snapshot was locked, in the UTC time zone (`YYYY-MM-DDThh:mm:ss.sssZ`).

Type: Timestamp

**lockDuration**

The period of time for which the snapshot is locked, in days.

Type: Integer

**lockDurationStartTime**

The date and time at which the lock duration started, in the UTC time zone (`YYYY-MM-DDThh:mm:ss.sssZ`).

Type: Timestamp

**lockExpiresOn**

The date and time at which the lock will expire, in the UTC time zone (`YYYY-MM-DDThh:mm:ss.sssZ`).

Type: Timestamp

**lockState**

The state of the snapshot lock. Valid states include:

- `compliance-cooloff` - The snapshot has been locked in compliance mode but it is still within the cooling-off period. The snapshot can't be deleted, but it can be unlocked and the lock settings can be modified by users with appropriate permissions.
- `governance` - The snapshot is locked in governance mode. The snapshot can't be deleted, but it can be unlocked and the lock settings can be modified by users with appropriate permissions.
- `compliance` - The snapshot is locked in compliance mode and the cooling-off period has expired. The snapshot can't be unlocked or deleted. The lock duration can only be increased by users with appropriate permissions.
- `expired` - The snapshot was locked in compliance or governance mode but the lock duration has expired. The snapshot is not locked and can be deleted.

Type: String

Valid Values: `compliance | governance | compliance-cooloff | expired`

**requestId**

The ID of the request.

Type: String

**snapshotId**

The ID of the snapshot

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyAddressAttribute

Modifies an attribute of the specified Elastic IP address. For requirements, see Using reverse DNS for email applications.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationId**

[EC2-VPC] The allocation ID.

Type: String

Required: Yes

**DomainName**

The domain name to modify for the IP address.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**address**

Information about the Elastic IP address.

Type: AddressAttribute object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyAvailabilityZoneGroup

Changes the opt-in status of the specified zone group for your account.

Use DescribeAvailabilityZones to view the value for `GroupName`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupName**

The name of the Availability Zone group, Local Zone group, or Wavelength Zone group.

Type: String

Required: Yes

**OptInStatus**

Indicates whether to opt in to the zone group. The only valid value is `opted-in`. You must contact AWS Support to opt out of a Local Zone or Wavelength Zone group.

Type: String

Valid Values: `opted-in | not-opted-in`

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyCapacityReservation

Modifies a Capacity Reservation's capacity, instance eligibility, and the conditions under which it is to be released. You can't modify a Capacity Reservation's instance type, EBS optimization, platform, instance store settings, Availability Zone, or tenancy. If you need to modify any of these attributes, we recommend that you cancel the Capacity Reservation, and then create a new one with the required attributes. For more information, see Modify an active Capacity Reservation.

The allowed modifications depend on the state of the Capacity Reservation:

- `assessing` or `scheduled` state - You can modify the tags only.
- `pending` state - You can't modify the Capacity Reservation in any way.
- `active` state but still within the commitment duration - You can't decrease the instance count or set an end date that is within the commitment duration. All other modifications are allowed.
- `active` state with no commitment duration or elapsed commitment duration - All modifications are allowed.
- `expired`, `cancelled`, `unsupported`, or `failed` state - You can't modify the Capacity Reservation in any way.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Accept**

Reserved. Capacity Reservations you have created are accepted by default.

Type: Boolean

Required: No

**AdditionalInfo**

Reserved for future use.

Type: String

Required: No

**CapacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndDate**

The date and time at which the Capacity Reservation expires. When a Capacity Reservation expires, the reserved capacity is released and you can no longer launch instances into it. The Capacity Reservation's state changes to `expired` when it reaches its end date and time.

The Capacity Reservation is cancelled within an hour from the specified time. For example, if you specify 5/31/2019, 13:30:55, the Capacity Reservation is guaranteed to end between 13:30:55 and 14:30:55 on 5/31/2019.

You must provide an `EndDate` value if `EndDateType` is `limited`. Omit `EndDate` if `EndDateType` is `unlimited`.

Type: Timestamp

Required: No

**EndDateType**

Indicates the way in which the Capacity Reservation ends. A Capacity Reservation can have one of the following end types:

- `unlimited` - The Capacity Reservation remains active until you explicitly cancel it. Do not provide an `EndDate` value if `EndDateType` is `unlimited`.
- `limited` - The Capacity Reservation expires automatically at a specified date and time. You must provide an `EndDate` value if `EndDateType` is `limited`.

Type: String

Valid Values: `unlimited | limited`

Required: No

**InstanceCount**

The number of instances for which to reserve capacity. The number of instances can't be increased or decreased by more than `1000` in a single request.

Type: Integer

Required: No

**InstanceMatchCriteria**

The matching criteria (instance eligibility) that you want to use in the modified Capacity Reservation. If you change the instance eligibility of an existing Capacity Reservation from `targeted` to `open`, any running instances that match the attributes of the Capacity Reservation, have the `CapacityReservationPreference` set to `open`, and are not yet running in the Capacity Reservation, will automatically use the modified Capacity Reservation.

To modify the instance eligibility, the Capacity Reservation must be completely idle (zero usage).

Type: String

Valid Values: `open | targeted`

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyCapacityReservationFleet

Modifies a Capacity Reservation Fleet.

When you modify the total target capacity of a Capacity Reservation Fleet, the Fleet automatically creates new Capacity Reservations, or modifies or cancels existing Capacity Reservations in the Fleet to meet the new total target capacity. When you modify the end date for the Fleet, the end dates for all of the individual Capacity Reservations in the Fleet are updated accordingly.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationFleetId**

The ID of the Capacity Reservation Fleet to modify.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndDate**

The date and time at which the Capacity Reservation Fleet expires. When the Capacity Reservation Fleet expires, its state changes to `expired` and all of the Capacity Reservations in the Fleet expire.

The Capacity Reservation Fleet expires within an hour after the specified time. For example, if you specify `5/31/2019`, `13:30:55`, the Capacity Reservation Fleet is guaranteed to expire between `13:30:55` and `14:30:55` on `5/31/2019`.

You can't specify **EndDate** and **RemoveEndDate** in the same request.

Type: Timestamp

Required: No

**RemoveEndDate**

Indicates whether to remove the end date from the Capacity Reservation Fleet. If you remove the end date, the Capacity Reservation Fleet does not expire and it remains active until you explicitly cancel it using the **CancelCapacityReservationFleet** action.

You can't specify **RemoveEndDate** and **EndDate** in the same request.

Type: Boolean

Required: No

**TotalTargetCapacity**

The total number of capacity units to be reserved by the Capacity Reservation Fleet. This value, together with the instance type weights that you assign to each instance type used by the Fleet determine the number of instances for which the Fleet reserves capacity. Both values are based on units that make sense for your workload. For more information, see Total target capacity in the *Amazon EC2 User Guide*.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyClientVpnEndpoint

Modifies the specified Client VPN endpoint. Modifying the DNS server resets existing client connections.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientConnectOptions**

The options for managing connection authorization for new client connections.

Type: ClientConnectOptions object

Required: No

**ClientLoginBannerOptions**

Options for enabling a customizable text banner that will be displayed on AWS provided clients when a VPN session is established.

Type: ClientLoginBannerOptions object

Required: No

**ClientRouteEnforcementOptions**

Client route enforcement is a feature of the Client VPN service that helps enforce administrator defined routes on devices connected through the VPN. T his feature helps improve your security posture by ensuring that network traffic originating from a connected client is not inadvertently sent outside the VPN tunnel.

Client route enforcement works by monitoring the route table of a connected device for routing policy changes to the VPN connection. If the feature detects any VPN routing policy modifications, it will automatically force an update to the route table, reverting it back to the expected route configurations.

Type: ClientRouteEnforcementOptions object

Required: No

**ClientVpnEndpointId**

The ID of the Client VPN endpoint to modify.

Type: String

Required: Yes

**ConnectionLogOptions**

Information about the client connection logging options.

If you enable client connection logging, data about client connections is sent to a Cloudwatch Logs log stream. The following information is logged:

- Client connection requests
- Client connection results (successful and unsuccessful)
- Reasons for unsuccessful client connection requests
- Client connection termination time

Type: ConnectionLogOptions object

Required: No

**Description**

A brief description of the Client VPN endpoint.

Type: String

Required: No

**DisconnectOnSessionTimeout**

Indicates whether the client VPN session is disconnected after the maximum timeout specified in `sessionTimeoutHours` is reached. If `true`, users are prompted to reconnect client VPN. If `false`, client VPN attempts to reconnect automatically. The default value is `true`.

Type: Boolean

Required: No

**DnsServers**

Information about the DNS servers to be used by Client VPN connections. A Client VPN endpoint can have up to two DNS servers.

Type: DnsServersOptionsModifyStructure object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SecurityGroupId.N**

The IDs of one or more security groups to apply to the target network.

Type: Array of strings

Required: No

**SelfServicePortal**

Specify whether to enable the self-service portal for the Client VPN endpoint.

Type: String

Valid Values: `enabled | disabled`

Required: No

**ServerCertificateArn**

The ARN of the server certificate to be used. The server certificate must be provisioned in AWS Certificate Manager (ACM).

Type: String

Required: No

**SessionTimeoutHours**

The maximum VPN session duration time in hours.

Valid values: 8 | 10 | 12 | 24

Default value: 24

Type: Integer

Required: No

**SplitTunnel**

Indicates whether the VPN is split-tunnel.

For information about split-tunnel VPN endpoints, see Split-tunnel AWS Client VPN endpoint in the *AWS Client VPN Administrator Guide*.

Type: Boolean

Required: No

**TransitGatewayConfiguration**

The Transit Gateway configuration for the Client VPN endpoint. This option is currently not supported.

Type: TransitGatewayConfigurationInputStructure object

Required: No

**VpcId**

The ID of the VPC to associate with the Client VPN endpoint.

Type: String

Required: No

**VpnPort**

The port number to assign to the Client VPN endpoint for TCP and UDP traffic.

Valid Values: 443 | 1194

Default Value: 443

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example modifies a Client VPN endpoint's description.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyClientVpnEndpoint
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&Description=my-client-vpn-endpoint
&AUTHPARAMS
```

#### Sample Response

```
<ModifyClientVpnEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>fe4813d3-1e79-4f67-bbd7-3186eEXAMPLE</requestId>
    <return>true</return>
```

```
</ModifyClientVpnEndpointResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyDefaultCreditSpecification

Modifies the default credit option for CPU usage of burstable performance instances. The default credit option is set at the account level per AWS Region, and is specified per instance family. All new burstable performance instances in the account launch using the default credit option.

`ModifyDefaultCreditSpecification` is an asynchronous operation, which works at an AWS Region level and modifies the credit option for each Availability Zone. All zones in a Region are updated within five minutes. But if instances are launched during this operation, they might not get the new credit option until the zone is updated. To verify whether the update has occurred, you can call `GetDefaultCreditSpecification` and check `DefaultCreditSpecification` for updates.

For more information, see Burstable performance instances in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CpuCredits**

The credit option for CPU usage of the instance family.

Valid Values: `standard` | `unlimited`

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceFamily**

The instance family.

Type: String

Valid Values: `t2 | t3 | t3a | t4g`

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceFamilyCreditSpecification**

The default credit option for CPU usage of the instance family.

Type: InstanceFamilyCreditSpecification object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example modifies the default credit option for CPU usage to `unlimited` for all instances in the T2 instance family in the specified Region.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyDefaultCreditSpecification
&Region=us-east-1
&InstanceFamily=t2
&CpuCredits=unlimited
&AUTHPARAMS
```

### Sample Response

```
<ModifyDefaultCreditSpecificationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>11111111-2222-3333-4444-5555EXAMPLE</requestId>
    <instanceFamilyCreditSpecification>
        <cpuCredits>unlimited</cpuCredits>
        <instanceFamily>t2</instanceFamily>
    </instanceFamilyCreditSpecification>
</ModifyDefaultCreditSpecificationResponse>
```

## Example 2

This example modifies the default credit option for CPU usage to `standard` for all instances in the T3 instance family in the specified Region.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyDefaultCreditSpecification
&Region=us-east-1
&InstanceFamily=t3
&CpuCredits=standard
&AUTHPARAMS
```

### Sample Response

```
<ModifyDefaultCreditSpecificationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>11111111-2222-3333-4444-5555EXAMPLE</requestId>
    <instanceFamilyCreditSpecification>
        <cpuCredits>standard</cpuCredits>
        <instanceFamily>t3</instanceFamily>
    </instanceFamilyCreditSpecification>
</ModifyDefaultCreditSpecificationResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyEbsDefaultKmsKeyId

Changes the default AWS KMS key for EBS encryption by default for your account in this Region.

AWS creates a unique AWS managed KMS key in each Region for use with encryption by default. If you change the default KMS key to a symmetric customer managed KMS key, it is used instead of the AWS managed KMS key. Amazon EBS does not support asymmetric KMS keys.

To reset the default KMS key to the AWS managed KMS key for EBS, use ResetEbsDefaultKmsKeyId.

If you delete or disable the customer managed KMS key that you specified for use with encryption by default, your instances will fail to launch.

For more information, see Amazon EBS encryption in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**KmsKeyId**

The identifier of the AWS KMS key to use for Amazon EBS encryption. If this parameter is not specified, your AWS KMS key for Amazon EBS is used. If `KmsKeyId` is specified, the encrypted state must be `true`.

You can specify the KMS key using any of the following:

- Key ID. For example, 1234abcd-12ab-34cd-56ef-1234567890ab.
- Key alias. For example, alias/ExampleAlias.
- Key ARN. For example, arn:aws:kms:us-east-1:012345678910:key/1234abcd-12ab-34cd-56ef-1234567890ab.

- Alias ARN. For example, arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias.

AWS authenticates the KMS key asynchronously. Therefore, if you specify an ID, alias, or ARN that is not valid, the action can appear to complete, but eventually fails.

Amazon EBS does not support asymmetric KMS keys.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**kmsKeyId**

The Amazon Resource Name (ARN) of the default KMS key for encryption by default.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyFleet

Modifies the specified EC2 Fleet.

You can only modify an EC2 Fleet request of type `maintain`.

While the EC2 Fleet is being modified, it is in the `modifying` state.

To scale up your EC2 Fleet, increase its target capacity. The EC2 Fleet launches the additional Spot Instances according to the allocation strategy for the EC2 Fleet request. If the allocation strategy is `lowest-price`, the EC2 Fleet launches instances using the Spot Instance pool with the lowest price. If the allocation strategy is `diversified`, the EC2 Fleet distributes the instances across the Spot Instance pools. If the allocation strategy is `capacity-optimized`, EC2 Fleet launches instances from Spot Instance pools with optimal capacity for the number of instances that are launching.

To scale down your EC2 Fleet, decrease its target capacity. First, the EC2 Fleet cancels any open requests that exceed the new target capacity. You can request that the EC2 Fleet terminate Spot Instances until the size of the fleet no longer exceeds the new target capacity. If the allocation strategy is `lowest-price`, the EC2 Fleet terminates the instances with the highest price per unit. If the allocation strategy is `capacity-optimized`, the EC2 Fleet terminates the instances in the Spot Instance pools that have the least available Spot Instance capacity. If the allocation strategy is `diversified`, the EC2 Fleet terminates instances across the Spot Instance pools. Alternatively, you can request that the EC2 Fleet keep the fleet at its current size, but not replace any Spot Instances that are interrupted or that you terminate manually.

If you are finished with your EC2 Fleet for now, but will use it again later, you can set the target capacity to 0.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Context**

Reserved.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ExcessCapacityTerminationPolicy**

Indicates whether running instances should be terminated if the total target capacity of the EC2 Fleet is decreased below the current size of the EC2 Fleet.

Supported only for fleets of type `maintain`.

Type: String

Valid Values: `no-termination | termination`

Required: No

**FleetId**

The ID of the EC2 Fleet.

Type: String

Required: Yes

**LaunchTemplateConfig.N**

The launch template and overrides.

Type: Array of FleetLaunchTemplateConfigRequest objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Required: No

**TargetCapacitySpecification**

The size of the EC2 Fleet.

Type: TargetCapacitySpecificationRequest object

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

If the request succeeds, the response returns `true`. If the request fails, no response is returned, and instead an error message is returned.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyFpgaImageAttribute

Modifies the specified attribute of the specified Amazon FPGA Image (AFI).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The name of the attribute.

Type: String

Valid Values: `description | name | loadPermission | productCodes`

Required: No

**Description**

A description for the AFI.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FpgaImageId**

The ID of the AFI.

Type: String

Required: Yes

**LoadPermission**

The load permission for the AFI.

Type: LoadPermissionModifications object

Required: No

**Name**

A name for the AFI.

Type: String

Required: No

**OperationType**

The operation type.

Type: String

Valid Values: `add | remove`

Required: No

**ProductCode.N**

The product codes. After you add a product code to an AFI, it can't be removed. This parameter is valid only when modifying the `productCodes` attribute.

Type: Array of strings

Required: No

**UserGroup.N**

The user groups. This parameter is valid only when modifying the `loadPermission` attribute.

Type: Array of strings

Required: No

**UserId.N**

The AWS account IDs. This parameter is valid only when modifying the `loadPermission` attribute.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**fpgaImageAttribute**

Information about the attribute.

Type: FpgaImageAttribute object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example adds load permissions for account ID 123456789012.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=ModifyFpgaImageAttribute
&FpgaImageId=afi-0d123e21abcc85abc
&Attribute=loadPermission
&LoadPermission.Add.1.UserId=123456789012
&AUTHPARAMS
```

**Sample Response**

```
<ModifyFpgaImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
    <requestId>75837959-edf9-4183-ad01-6cb1example</requestId>
    <fpgaImageAttribute>
        <fpgaImageId>afi-0d123e21abcc85abc</fpgaImageId>
        <loadPermissions>
            <item>
                <userId>123456789012</userId>
            </item>
        </loadPermissions>
    </fpgaImageAttribute>
</ModifyFpgaImageAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyHosts

Modify the auto-placement setting of a Dedicated Host. When auto-placement is enabled, any instances that you launch with a tenancy of `host` but without a specific host ID are placed onto any available Dedicated Host in your account that has auto-placement enabled. When auto-placement is disabled, you need to provide a host ID to have the instance launch onto a specific host. If no host ID is provided, the instance is launched onto a suitable host with auto-placement enabled.

You can also use this API action to modify a Dedicated Host to support either multiple instance types in an instance family, or to support a specific instance type only.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AutoPlacement**

Specify whether to enable or disable auto-placement.

Type: String

Valid Values: `on` | `off`

Required: No

**HostId.N**

The IDs of the Dedicated Hosts to modify.

Type: Array of strings

Required: Yes

**HostMaintenance**

Indicates whether to enable or disable host maintenance for the Dedicated Host. For more information, see Host maintenance in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `on` | `off`

Required: No

**HostRecovery**

Indicates whether to enable or disable host recovery for the Dedicated Host. For more information, see Host recovery in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `on | off`

Required: No

**InstanceFamily**

Specifies the instance family to be supported by the Dedicated Host. Specify this parameter to modify a Dedicated Host to support multiple instance types within its current instance family.

If you want to modify a Dedicated Host to support a specific instance type only, omit this parameter and specify **InstanceType** instead. You cannot specify **InstanceFamily** and **InstanceType** in the same request.

Type: String

Required: No

**InstanceType**

Specifies the instance type to be supported by the Dedicated Host. Specify this parameter to modify a Dedicated Host to support only a specific instance type.

If you want to modify a Dedicated Host to support multiple instance types in its current instance family, omit this parameter and specify **InstanceFamily** instead. You cannot specify **InstanceType** and **InstanceFamily** in the same request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**successful**

The IDs of the Dedicated Hosts that were successfully modified.

Type: Array of strings

**unsuccessful**

The IDs of the Dedicated Hosts that could not be modified. Check whether the setting you requested can be used.

Type: Array of UnsuccessfulItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example enables the auto-placement setting on a Dedicated Host.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyHosts
&AutoPlacement=on
&HostId=h-00548908djdsgfs
&AUTHPARAMS
```

#### Sample Response

```
<ModifyHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <unsuccessful/>
    <successful>
```

```
        <item>h-00548908djdsgfs</item>
    </successful>
</ModifyHostsResponse>
```

## Example 2

This example enables host recovery on a Dedicated Host.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyHosts
&HostRecovery=on
&HostId=h-00548908djdsgfs
&AUTHPARAMS
```

### Sample Response

```
<ModifyHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <unsuccessful/>
    <successful>
        <item>h-00548908djdsgfs</item>
    </successful>
</ModifyHostsResponse>
```

## Example 3

This example modifies a Dedicated Host that supports only `m5.large` instances to support multiple instance types in the `m5` instance family.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyHosts
&InstanceFamily=m5
&HostId=h-00548908djdsgfs
&AUTHPARAMS
```

### Sample Response

```
<ModifyHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
```

```
    <unsuccessful/>
    <successful>
        <item>h-00548908djdsgfs</item>
    </successful>
</ModifyHostsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyIdentityIdFormat

Modifies the ID format of a resource for a specified IAM user, IAM role, or the root user for an account; or all IAM users, IAM roles, and the root user for an account. You can specify that resources should receive longer IDs (17-character IDs) when they are created.

This request can only be used to modify longer ID settings for resource types that are within the opt-in period. Resources currently in their opt-in period include: `bundle` | `conversion-task` | `customer-gateway` | `dhcp-options` | `elastic-ip-allocation` | `elastic-ip-association` | `export-task` | `flow-log` | `image` | `import-task` | `internet-gateway` | `network-acl` | `network-acl-association` | `network-interface` | `network-interface-attachment` | `prefix-list` | `route-table` | `route-table-association` | `security-group` | `subnet` | `subnet-cidr-block-association` | `vpc` | `vpc-cidr-block-association` | `vpc-endpoint` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway`.

For more information, see Resource IDs in the *Amazon Elastic Compute Cloud User Guide*.

This setting applies to the principal specified in the request; it does not apply to the principal that makes the request.

Resources created with longer IDs are visible to all IAM roles and users, regardless of these settings and provided that they have permission to use the relevant `Describe` command for the resource type.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**PrincipalArn**

The ARN of the principal, which can be an IAM user, IAM role, or the root user. Specify `all` to modify the ID format for all IAM users, IAM roles, and the root user of the account.

Type: String

Required: Yes

**Resource**

The type of resource: `bundle` | `conversion-task` | `customer-gateway` | `dhcp-options` | `elastic-ip-allocation` | `elastic-ip-association` | `export-task` | `flow-log` |

`image` | `import-task` | `internet-gateway` | `network-acl` | `network-acl-association` | `network-interface` | `network-interface-attachment` | `prefix-list` | `route-table` | `route-table-association` | `security-group` | `subnet` | `subnet-cidr-block-association` | `vpc` | `vpc-cidr-block-association` | `vpc-endpoint` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway`.

Alternatively, use the `all-current` option to include all resource types that are currently within their opt-in period for longer IDs.

Type: String

Required: Yes

**UseLongIds**

Indicates whether the resource should use longer IDs (17-character IDs)

Type: Boolean

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example sets the UseLongIds parameter to true for instances launched by the IAM role 'EC2Role'. Instances launched by the IAM role receive longer IDs.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyIdentityFormat
&Resource=instance
&UseLongIds=true
&PrincipalArn=arn:aws:iam::123456789012:role/EC2Role
&AUTHPARAMS
```

### Sample Response

```
<ModifyIdentityIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>92c1af09-cb4c-410e-8a96-EXAMPLE</requestId>
  <return>true</return>
</ModifyIdentityIdFormatResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyIdFormat

Modifies the ID format for the specified resource on a per-Region basis. You can specify that resources should receive longer IDs (17-character IDs) when they are created.

This request can only be used to modify longer ID settings for resource types that are within the opt-in period. Resources currently in their opt-in period include: `bundle` | `conversion-task` | `customer-gateway` | `dhcp-options` | `elastic-ip-allocation` | `elastic-ip-association` | `export-task` | `flow-log` | `image` | `import-task` | `internet-gateway` | `network-acl` | `network-acl-association` | `network-interface` | `network-interface-attachment` | `prefix-list` | `route-table` | `route-table-association` | `security-group` | `subnet` | `subnet-cidr-block-association` | `vpc` | `vpc-cidr-block-association` | `vpc-endpoint` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway`.

This setting applies to the IAM user who makes the request; it does not apply to the entire AWS account. By default, an IAM user defaults to the same settings as the root user. If you're using this action as the root user, then these settings apply to the entire account, unless an IAM user explicitly overrides these settings for themselves. For more information, see Resource IDs in the *Amazon Elastic Compute Cloud User Guide*.

Resources created with longer IDs are visible to all IAM roles and users, regardless of these settings and provided that they have permission to use the relevant `Describe` command for the resource type.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Resource**

The type of resource: `bundle` | `conversion-task` | `customer-gateway` | `dhcp-options` | `elastic-ip-allocation` | `elastic-ip-association` | `export-task` | `flow-log` | `image` | `import-task` | `internet-gateway` | `network-acl` | `network-acl-association` | `network-interface` | `network-interface-attachment` | `prefix-list` | `route-table` | `route-table-association` | `security-group` | `subnet` | `subnet-cidr-block-association` | `vpc` | `vpc-cidr-block-association` | `vpc-endpoint` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway`.

Alternatively, use the `all-current` option to include all resource types that are currently within their opt-in period for longer IDs.

Type: String

Required: Yes

**UseLongIds**

Indicate whether the resource should use longer IDs (17-character IDs).

Type: Boolean

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example sets the UseLongIds parameter to true for instances, so that instances you launch receive longer IDs.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyIdFormat
&Resource=instance
&UseLongIds=true
&AUTHPARAMS
```

### Sample Response

```
<ModifyIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>92c1af09-cb4c-410e-8a96-EXAMPLE</requestId>
    <return>true</return>
</ModifyIdFormatResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyImageAttribute

Modifies the specified attribute of the specified AMI. You can specify only one attribute at a time.

To specify the attribute, you can use the `Attribute` parameter, or one of the following parameters: `Description`, `ImdsSupport`, or `LaunchPermission`.

Images with an AWS Marketplace product code cannot be made public.

To enable the SriovNetSupport enhanced networking attribute of an image, enable SriovNetSupport on an instance and create an AMI from the instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The name of the attribute to modify.

Valid values: `description` | `imdsSupport` | `launchPermission`

Type: String

Required: No

**Description**

A new description for the AMI.

Type: AttributeValue object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

**ImdsSupport**

Set to `v2.0` to indicate that IMDSv2 is specified in the AMI. Instances launched from this AMI will have `HttpTokens` automatically set to `required` so that, by default, the instance requires that IMDSv2 is used when requesting instance metadata. In addition, `HttpPutResponseHopLimit` is set to 2. For more information, see Configure the AMI in the *Amazon EC2 User Guide*.

> **Important**
>
> Do not use this parameter unless your AMI software supports IMDSv2. After you set the value to `v2.0`, you can't undo it. The only way to "reset" your AMI is to create a new AMI from the underlying snapshot.

Type: AttributeValue object

Required: No

**LaunchPermission**

A new launch permission for the AMI.

Type: LaunchPermissionModifications object

Required: No

**OperationType**

The operation type. This parameter can be used only when the `Attribute` parameter is `launchPermission`.

Type: String

Valid Values: `add` | `remove`

Required: No

**OrganizationalUnitArn.N**

The Amazon Resource Name (ARN) of an organizational unit (OU). This parameter can be used only when the `Attribute` parameter is `launchPermission`.

Type: Array of strings

Required: No

**OrganizationArn.N**

The Amazon Resource Name (ARN) of an organization. This parameter can be used only when the `Attribute` parameter is `launchPermission`.

Type: Array of strings

Required: No

**ProductCode.N**

Not supported.

Type: Array of strings

Required: No

**UserGroup.N**

The user groups. This parameter can be used only when the `Attribute` parameter is `launchPermission`.

Type: Array of strings

Required: No

**UserId.N**

The AWS account IDs. This parameter can be used only when the `Attribute` parameter is `launchPermission`.

Type: Array of strings

Required: No

**Value**

The value of the attribute being modified. This parameter can be used only when the `Attribute` parameter is `description` or `imdsSupport`.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example makes the AMI public (for example, so any AWS account can use it).

**Sample Request**

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
```

```
&LaunchPermission.Add.1.Group=all
&AUTHPARAMS
```

### Sample Response

```
<ModifyImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifyImageAttributeResponse>
```

## Example 2

This example makes the AMI private (for example, so that only you as the owner can use it).

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Remove.1.Group=all
&AUTHPARAMS
```

## Example 3

This example grants launch permission to the AWS account with ID 111122223333.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.UserId=111122223333
&AUTHPARAMS
```

## Example 4

This example adds the `774F4FF8` product code to the `ami-61a54008` AMI.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
```

```
&ProductCode.1=774F4FF8
&AUTHPARAMS
```

### Example 5

This example changes the description of the AMI to `New Description`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&Description.Value=New Description
&AUTHPARAMS
```

### Example 6

This example sets the AMI to IMDSv2 only. Instances created from this AMI will require that IMDSv2 is used when requesting instance metadata.

Note that after you set the value to `v2.0`, you can't undo it.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&ImdsSupport.Value=v2.0
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyInstanceAttribute

Modifies the specified attribute of the specified instance. You can specify only one attribute at a time.

**Note:** Using this action to change the security groups associated with an elastic network interface (ENI) attached to an instance can result in an error if the instance has more than one ENI. To change the security groups associated with an ENI attached to an instance that has multiple ENIs, we recommend that you use the ModifyNetworkInterfaceAttribute action.

To modify some attributes, the instance must be stopped. For more information, see Modify a stopped instance in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The name of the attribute to modify.

> **Note**
>
> When changing the instance type: If the original instance type is configured for configurable bandwidth, and the desired instance type doesn't support configurable bandwidth, first set the existing bandwidth configuration to `default` using the ModifyInstanceNetworkPerformanceOptions operation.

Type: String

Valid Values: `disableApiTermination | instanceType | kernel | ramdisk | instanceInitiatedShutdownBehavior | blockDeviceMapping | userData | sourceDestCheck | groupSet | ebsOptimized | sriovNetSupport | enaSupport | nvmeSupport | disableApiStop | enclaveOptions`

Required: No

**BlockDeviceMapping.N**

Modifies the `DeleteOnTermination` attribute for volumes that are currently attached. The volume must be owned by the caller. If no value is specified for `DeleteOnTermination`, the default is `true` and the volume is deleted when the instance is terminated. You can't modify the `DeleteOnTermination` attribute for volumes that are attached to AWS-managed resources.

To add instance store volumes to an Amazon EBS-backed instance, you must add them when you launch the instance. For more information, see Update the block device mapping when launching an instance in the *Amazon EC2 User Guide*.

Type: Array of InstanceBlockDeviceMappingSpecification objects

Required: No

**DisableApiStop**

Indicates whether an instance is enabled for stop protection. For more information, see Enable stop protection for your instance.

Type: AttributeBooleanValue object

Required: No

**DisableApiTermination**

Enable or disable termination protection for the instance. If the value is `true`, you can't terminate the instance using the Amazon EC2 console, command line interface, or API. You can't enable termination protection for Spot Instances.

Type: AttributeBooleanValue object

Required: No

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EbsOptimized**

Specifies whether the instance is optimized for Amazon EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: AttributeBooleanValue object

Required: No

**EnaSupport**

Set to `true` to enable enhanced networking with ENA for the instance.

This option is supported only for HVM instances. Specifying this option with a PV instance can make it unreachable.

Type: AttributeBooleanValue object

Required: No

**GroupId.N**

Replaces the security groups of the instance with the specified security groups. You must specify the ID of at least one security group, even if it's just the default security group for the VPC.

Type: Array of strings

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**InstanceInitiatedShutdownBehavior**

Specifies whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: AttributeValue object

Required: No

**InstanceType**

Changes the instance type to the specified value. For more information, see Instance types in the *Amazon EC2 User Guide*. If the instance type is not valid, the error returned is `InvalidInstanceAttributeValue`.

Type: AttributeValue object

Required: No

**Kernel**

Changes the instance's kernel to the specified value. We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB.

Type: AttributeValue object

Required: No

**Ramdisk**

Changes the instance's RAM disk to the specified value. We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB.

Type: AttributeValue object

Required: No

**SourceDestCheck**

Enable or disable source/destination checks, which ensure that the instance is either the source or the destination of any traffic that it receives. If the value is `true`, source/destination checks are enabled; otherwise, they are disabled. The default value is `true`. You must disable source/destination checks if the instance runs services such as network address translation, routing, or firewalls.

Type: AttributeBooleanValue object

Required: No

**SriovNetSupport**

Set to `simple` to enable enhanced networking with the Intel 82599 Virtual Function interface for the instance.

There is no way to disable enhanced networking with the Intel 82599 Virtual Function interface at this time.

This option is supported only for HVM instances. Specifying this option with a PV instance can make it unreachable.

Type: AttributeValue object

Required: No

**UserData**

Changes the instance's user data to the specified value. User data must be base64-encoded. Depending on the tool or SDK that you're using, the base64-encoding might be performed for you. For more information, see Work with instance user data.

Type: SecureBlobAttributeValue object

Required: No

**Value**

A new value for the attribute. Use only with the `kernel`, `ramdisk`, `userData`, `disableApiTermination`, or `instanceInitiatedShutdownBehavior` attribute.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example changes the `instanceType` attribute of the specified instance. The instance must be in the `stopped` state.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-1234567890abcdef0
&InstanceType.Value=m1.small
&AUTHPARAMS
```

### Example 2

This example changes the `enaSupport` attribute of the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-1234567890abcdef0
&EnaSupport.Value=true
&AUTHPARAMS
```

### Example 3

This example changes the `ebsOptimized` attribute of the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-1234567890abcdef0
&EbsOptimized.Value=true
&AUTHPARAMS
```

### Example 4

This example changes the `instanceInitiatedShutdownBehavior` attribute of the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-1234567890abcdef0
&InstanceInitiatedShutdownBehavior.Value=terminate
&AUTHPARAMS
```

### Example 5

This example changes the `disableApiTermination` attribute of the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-1234567890abcdef0
&DisableApiTermination.Value=true
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# ModifyInstanceCapacityReservationAttributes

Modifies the Capacity Reservation settings for a stopped instance. Use this action to configure an instance to target a specific Capacity Reservation, run in any open Capacity Reservation with matching attributes, run in On-Demand Instance capacity, or only run in a Capacity Reservation.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationSpecification**

Information about the Capacity Reservation targeting option.

Type: CapacityReservationSpecification object

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance to be modified.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyInstanceConnectEndpoint

Modifies the specified EC2 Instance Connect Endpoint.

For more information, see Modify an EC2 Instance Connect Endpoint in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceConnectEndpointId**

The ID of the EC2 Instance Connect Endpoint to modify.

Type: String

Required: Yes

**IpAddressType**

The new IP address type for the EC2 Instance Connect Endpoint.

> **Note**
>
> `PreserveClientIp` is only supported on IPv4 EC2 Instance Connect Endpoints. To use `PreserveClientIp`, the value for `IpAddressType` must be `ipv4`.

Type: String

Valid Values: `ipv4 | dualstack | ipv6`

Required: No

**PreserveClientIp**

Indicates whether the client IP address is preserved as the source when you connect to a resource. The following are the possible values.

- `true` - Use the IP address of the client. Your instance must have an IPv4 address.
- `false` - Use the IP address of the network interface.

Type: Boolean

Required: No

**SecurityGroupId.N**

Changes the security groups for the EC2 Instance Connect Endpoint. The new set of groups you specify replaces the current set. You must specify at least one group, even if it's just the default security group in the VPC. You must specify the ID of the security group, not the name.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 16 items.

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example: Modify an EC2 Instance Connect Endpoint

This example modifies all the parameters of an EC2 Instance Connect Endpoint in a single request.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceConnectEndpoint
&InstanceConnectEndpointId=eice-0123456789example
&SecurityGroupId.1=sg-0123456789example
&IpAddressType=dualstack
&PreserveClientIp=false
&AUTHPARAMS
```

#### Sample Response

```
<ModifyInstanceConnectEndpointResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <return>true</return>
</ModifyInstanceConnectEndpointResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyInstanceCpuOptions

By default, all vCPUs for the instance type are active when you launch an instance. When you configure the number of active vCPUs for the instance, it can help you save on licensing costs and optimize performance. The base cost of the instance remains unchanged.

The number of active vCPUs equals the number of threads per CPU core multiplied by the number of cores. The instance must be in a `Stopped` state before you make changes.

> **Note**
>
> Some instance type options do not support this capability. For more information, see Supported CPU options in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CoreCount**

The number of CPU cores to activate for the specified instance.

Type: Integer

Required: No

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance to update.

Type: String

Required: Yes

**NestedVirtualization**

Indicates whether to enable or disable nested virtualization for the instance. When nested virtualization is enabled, Virtual Secure Mode (VSM) is automatically disabled for the instance.

Type: String

Valid Values: `enabled | disabled`

Required: No

**ThreadsPerCore**

The number of threads to run for each CPU core.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**coreCount**

The number of CPU cores that are running for the specified instance after the update.

Type: Integer

**instanceId**

The ID of the instance that was updated.

Type: String

**nestedVirtualization**

Indicates whether nested virtualization has been enabled or disabled.

Type: String

Valid Values: `enabled | disabled`

**requestId**

The ID of the request.

Type: String

**threadsPerCore**

The number of threads that are running per CPU core for the specified instance after the update.

Type: Integer

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This request example modifies the number of active vCPUs for the specified instance in the specified Region to 4 CPU cores running 2 threads each. This example assumes that the instance was stopped prior to running the request.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceCpuOptions
&Region=us-east-1
&InstanceId=i-1234567890abcdef0
&CoreCount=4
&ThreadsPerCore=2
&AUTHPARAMS
```

#### Sample Response

```
<ModifyInstanceCpuOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
 <requestId>11111111-2222-3333-4444-5555EXAMPLE</requestId>
 <instanceId>i-1234567890abcdef0</instanceId>
 <coreCount/>4</coreCount/>
```

```
 <threadsPerCore/>2</coreCount/>
</ModifyInstanceCpuOptionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyInstanceCreditSpecification

Modifies the credit option for CPU usage on a running or stopped burstable performance instance. The credit options are `standard` and `unlimited`.

For more information, see Burstable performance instances in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceCreditSpecification.N**

Information about the credit option for CPU usage.

Type: Array of InstanceCreditSpecificationRequest objects

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**successfulInstanceCreditSpecificationSet**

Information about the instances whose credit option for CPU usage was successfully modified.

Type: Array of SuccessfulInstanceCreditSpecificationItem objects

**unsuccessfulInstanceCreditSpecificationSet**

Information about the instances whose credit option for CPU usage was not modified.

Type: Array of UnsuccessfulInstanceCreditSpecificationItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This request modifies the credit option for CPU usage of the specified instance in the specified Region to `unlimited`. Valid credit options are `standard` and `unlimited`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceCreditSpecification
&Region=us-east-1
&InstanceCreditSpecification.1.InstanceId=i-1234567890abcdef0
&InstanceCreditSpecification.1.CpuCredits=unlimited
&AUTHPARAMS
```

#### Sample Response

```
<ModifyInstanceCreditSpecificationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>11111111-2222-3333-4444-5555EXAMPLE</requestId>
```

```
    <unsuccessfulInstanceCreditSpecificationSet/>
    <successfulInstanceCreditSpecificationSet>
        <item>
            <instanceId>i-1234567890abcdef0</instanceId>
        </item>
    </successfulInstanceCreditSpecificationSet>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyInstanceEventStartTime

Modifies the start time for a scheduled Amazon EC2 instance event.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceEventId**

The ID of the event whose date and time you are modifying.

Type: String

Required: Yes

**InstanceId**

The ID of the instance with the scheduled event.

Type: String

Required: Yes

**NotBefore**

The new date and time when the event will take place.

Type: Timestamp

Required: Yes

## Response Elements

The following elements are returned by the service.

**event**

Information about the event.

Type: InstanceStatusEvent object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

The following example shows how to modify the event start time for the specified instance. The event ID is specified by the `InstanceEventId` parameter and the new date and time is specified by the `NotBefore` parameter.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceEventStartTime
&InstanceId=i-1234567890abcdef0
&InstanceEventId=instance-event-0abcdef1234567890
&NotBefore=2019-03-25T10:00:00.000
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyInstanceEventWindow

Modifies the specified event window.

You can define either a set of time ranges or a cron expression when modifying the event window, but not both.

To modify the targets associated with the event window, use the AssociateInstanceEventWindow and DisassociateInstanceEventWindow API.

If AWS has already scheduled an event, modifying an event window won't change the time of the scheduled event.

For more information, see Define event windows for scheduled events in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CronExpression**

The cron expression of the event window, for example, `* 0-4,20-23 * * 1,5`.

Constraints:

- Only hour and day of the week values are supported.
- For day of the week values, you can specify either integers `0` through 6, or alternative single values `SUN` through `SAT`.
- The minute, month, and year must be specified by `*`.
- The hour value must be one or a multiple range, for example, `0-4` or `0-4,20-23`.
- Each hour range must be >= 2 hours, for example, `0-2` or `20-23`.
- The event window must be >= 4 hours. The combined total time ranges in the event window must be >= 4 hours.

For more information about cron expressions, see cron on the *Wikipedia website*.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceEventWindowId**

The ID of the event window.

Type: String

Required: Yes

**Name**

The name of the event window.

Type: String

Required: No

**TimeRange.N**

The time ranges of the event window.

Type: Array of InstanceEventWindowTimeRangeRequest objects

Required: No

## Response Elements

The following elements are returned by the service.

**instanceEventWindow**

Information about the event window.

Type: InstanceEventWindow object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyInstanceMaintenanceOptions

Modifies the recovery behavior of your instance to disable simplified automatic recovery or set the recovery behavior to default. The default configuration will not enable simplified automatic recovery for an unsupported instance type. For more information, see Simplified automatic recovery.

Modifies the reboot migration behavior during a user-initiated reboot of an instance that has a pending `system-reboot` event. For more information, see Enable or disable reboot migration.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AutoRecovery**

Disables the automatic recovery behavior of your instance or sets it to default.

Type: String

Valid Values: `disabled | default`

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**RebootMigration**

Specifies whether to attempt reboot migration during a user-initiated reboot of an instance that has a scheduled `system-reboot` event:

- `default` - Amazon EC2 attempts to migrate the instance to new hardware (reboot migration). If successful, the `system-reboot` event is cleared. If unsuccessful, an in-place reboot occurs and the event remains scheduled.
- `disabled` - Amazon EC2 keeps the instance on the same hardware (in-place reboot). The `system-reboot` event remains scheduled.

This setting only applies to supported instances that have a scheduled reboot event. For more information, see Enable or disable reboot migration in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `disabled | default`

Required: No

## Response Elements

The following elements are returned by the service.

**autoRecovery**

Provides information on the current automatic recovery behavior of your instance.

Type: String

Valid Values: `disabled | default`

**instanceId**

The ID of the instance.

Type: String

**rebootMigration**

Specifies whether to attempt reboot migration during a user-initiated reboot of an instance that has a scheduled `system-reboot` event:

- `default` - Amazon EC2 attempts to migrate the instance to new hardware (reboot migration). If successful, the `system-reboot` event is cleared. If unsuccessful, an in-place reboot occurs and the event remains scheduled.
- `disabled` - Amazon EC2 keeps the instance on the same hardware (in-place reboot). The `system-reboot` event remains scheduled.

This setting only applies to supported instances that have a scheduled reboot event. For more information, see Enable or disable reboot migration in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `disabled | default`

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyInstanceMetadataDefaults

Modifies the default instance metadata service (IMDS) settings at the account level in the specified AWS
Region.

> **Note**
>
> To remove a parameter's account-level default setting, specify `no-preference`. If an account-level setting is cleared with `no-preference`, then the instance launch considers the other instance metadata settings. For more information, see Order of precedence for instance metadata options in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**HttpEndpoint**

Enables or disables the IMDS endpoint on an instance. When disabled, the instance metadata can't be accessed.

Type: String

Valid Values: `disabled | enabled | no-preference`

Required: No

**HttpPutResponseHopLimit**

The maximum number of hops that the metadata token can travel. To indicate no preference, specify `-1`.

Possible values: Integers from 1 to 64, and `-1` to indicate no preference

Type: Integer

Required: No

**HttpTokens**

Indicates whether IMDSv2 is required.

- `optional` – IMDSv2 is optional, which means that you can use either IMDSv2 or IMDSv1.
- `required` – IMDSv2 is required, which means that IMDSv1 is disabled, and you must use IMDSv2.

Type: String

Valid Values: `optional | required | no-preference`

Required: No

**HttpTokensEnforced**

Specifies whether to enforce the requirement of IMDSv2 on an instance at the time of launch. When enforcement is enabled, the instance can't launch unless IMDSv2 (`HttpTokens`) is set to `required`. For more information, see Enforce IMDSv2 at the account level in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `disabled | enabled | no-preference`

Required: No

**InstanceMetadataTags**

Enables or disables access to an instance's tags from the instance metadata. For more information, see View tags for your EC2 instances using instance metadata in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `disabled | enabled | no-preference`

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

If the request succeeds, the response returns `true`. If the request fails, no response is returned, and instead an error message is returned.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3

- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyInstanceMetadataOptions

Modify the instance metadata parameters on a running or stopped instance. When you modify the parameters on a stopped instance, they are applied when the instance is started. When you modify the parameters on a running instance, the API responds with a state of “pending”. After the parameter modifications are successfully applied to the instance, the state of the modifications changes from “pending” to “applied” in subsequent describe-instances API calls. For more information, see Instance metadata and user data in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**HttpEndpoint**

Enables or disables the HTTP metadata endpoint on your instances. If this parameter is not specified, the existing state is maintained.

If you specify a value of `disabled`, you cannot access your instance metadata.

Type: String

Valid Values: `disabled | enabled`

Required: No

**HttpProtocolIpv6**

Enables or disables the IPv6 endpoint for the instance metadata service. Applies only if you enabled the HTTP metadata endpoint.

Type: String

Valid Values: `disabled | enabled`

Required: No

**HttpPutResponseHopLimit**

The desired HTTP PUT response hop limit for instance metadata requests. The larger the number, the further instance metadata requests can travel. If no parameter is specified, the existing state is maintained.

Possible values: Integers from 1 to 64

Type: Integer

Required: No

**HttpTokens**

Indicates whether IMDSv2 is required.

- `optional` - IMDSv2 is optional. You can choose whether to send a session token in your instance metadata retrieval requests. If you retrieve IAM role credentials without a session token, you receive the IMDSv1 role credentials. If you retrieve IAM role credentials using a valid session token, you receive the IMDSv2 role credentials.
- `required` - IMDSv2 is required. You must send a session token in your instance metadata retrieval requests. With this option, retrieving the IAM role credentials always returns IMDSv2 credentials; IMDSv1 credentials are not available.

Default:

- If the value of `ImdsSupport` for the Amazon Machine Image (AMI) for your instance is `v2.0` and the account level default is set to `no-preference`, the default is `required`.
- If the value of `ImdsSupport` for the Amazon Machine Image (AMI) for your instance is `v2.0`, but the account level default is set to `V1 or V2`, the default is `optional`.

The default value can also be affected by other combinations of parameters. For more information, see Order of precedence for instance metadata options in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `optional | required`

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**InstanceMetadataTags**

Set to `enabled` to allow access to instance tags from the instance metadata. Set to `disabled` to turn off access to instance tags from the instance metadata. For more information, see View tags for your EC2 instances using instance metadata.

Type: String

Valid Values: `disabled | enabled`

Required: No

## Response Elements

The following elements are returned by the service.

**instanceId**

The ID of the instance.

Type: String

**instanceMetadataOptions**

The metadata options for the instance.

Type: InstanceMetadataOptionsResponse object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1: Turn on token requirement

The following example disables access to the instance metadata unless a session token is used in the instance metadata request header. To turn on token requirement, specify `required` for `HttpTokens`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceMetadataOptions
&InstanceId=i-1234567890abcdef0
&HttpTokens=required
&AUTHPARAMS
```

#### Sample Response

```
<ModifyInstanceMetadataOptions xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <instanceId>i-1234567890abcdef0</instanceId>
    <MetadataOptions>
          <state>pending</state>
          <HttpTokens>required</HttpTokens>
          <HttpPutResponseHopLimit>1</HttpPutResponseHopLimit>
          <HttpEndpoint>enabled</HttpEndpoint>
    </MetadataOptions>
</ModifyInstanceMetadataOptions>
```

### Example 2: Turn off access to instance metadata

The following example disables access to the instance metadata by changing the HTTP endpoint state to disabled. To turn off access to instance metadata, specify `disabled` for `HttpEndpoint`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceMetadataOptions
&InstanceId=i-1234567890abcdef0
```

```
&HttpEndpoint=disabled
&AUTHPARAMS
```

### Sample Response

```
<ModifyInstanceMetadataOptions xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <instanceId>i-1234567890abcdef0</instanceId>
    <MetadataOptions>
          <state>pending</state>
          <HttpTokens>required</HttpTokens>
          <HttpPutResponseHopLimit>1</HttpPutResponseHopLimit>
          <HttpEndpoint>disabled</HttpEndpoint>
    </MetadataOptions>
</ModifyInstanceMetadataOptions>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyInstanceNetworkPerformanceOptions

Change the configuration of the network performance options for an existing instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**BandwidthWeighting**

Specify the bandwidth weighting option to boost the associated type of baseline bandwidth, as follows:

default

This option uses the standard bandwidth configuration for your instance type.

vpc-1

This option boosts your networking baseline bandwidth and reduces your EBS baseline bandwidth.

ebs-1

This option boosts your EBS baseline bandwidth and reduces your networking baseline bandwidth.

Type: String

Valid Values: `default | vpc-1 | ebs-1`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance to update.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**bandwidthWeighting**

Contains the updated configuration for bandwidth weighting on the specified instance.

Type: String

Valid Values: `default | vpc-1 | ebs-1`

**instanceId**

The instance ID that was updated.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyInstancePlacement

Modifies the placement attributes for a specified instance. You can do the following:

- Modify the affinity between an instance and a Dedicated Host. When affinity is set to `host` and the instance is not associated with a specific Dedicated Host, the next time the instance is started, it is automatically associated with the host on which it lands. If the instance is restarted or rebooted, this relationship persists.
- Change the Dedicated Host with which an instance is associated.
- Change the instance tenancy of an instance.
- Move an instance to or from a placement group.

At least one attribute for affinity, host ID, tenancy, or placement group name must be specified in the request. Affinity and tenancy can be modified in the same request.

To modify the host ID, tenancy, placement group, or partition for an instance, the instance must be in the `stopped` state.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Affinity**

The affinity setting for the instance. For more information, see Host affinity in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `default | host`

Required: No

**GroupId**

The Group Id of a placement group. You must specify the Placement Group **Group Id** to launch an instance in a shared placement group.

Type: String

Required: No

**GroupName**

The name of the placement group in which to place the instance. For spread placement groups, the instance must have a tenancy of `default`. For cluster and partition placement groups, the instance must have a tenancy of `default` or `dedicated`.

To remove an instance from a placement group, specify an empty string ("").

Type: String

Required: No

**HostId**

The ID of the Dedicated Host with which to associate the instance.

Type: String

Required: No

**HostResourceGroupArn**

The ARN of the host resource group in which to place the instance. The instance must have a tenancy of `host` to specify this parameter.

Type: String

Required: No

**InstanceId**

The ID of the instance that you are modifying.

Type: String

Required: Yes

**PartitionNumber**

The number of the partition in which to place the instance. Valid only if the placement group strategy is set to `partition`.

Type: Integer

Required: No

**Tenancy**

The tenancy for the instance.

> **Note**
>
> For T3 instances, you must launch the instance on a Dedicated Host to use a tenancy of `host`. You can't change the tenancy from `host` to `dedicated` or `default`. Attempting to make one of these unsupported tenancy changes results in an `InvalidRequest` error code.

Type: String

Valid Values: `default | dedicated | host`

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example modifies the affinity of instance `i-0b33i09` so that it always has affinity with host `h-00548908djdsgfs`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstancePlacement
&Affinity=host
&HostId=h-00548908djdsgfs
&InstanceId=i-0b33i09
&AUTHPARAMS
```

### Sample Response

```
<ModifyInstancePlacementResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <return>true</item>
</ModifyInstancePlacementResponse>
```

## Example 2

This example places instance `i-01234567812345678` in the placement group `MyPlacementGroup`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstancePlacement
&InstanceId=i-01234567812345678
&GroupName=MyPlacementGroup
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyIpam

Modify the configurations of an IPAM.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddOperatingRegion.N**

Choose the operating Regions for the IPAM. Operating Regions are AWS Regions where the IPAM is allowed to manage IP address CIDRs. IPAM only discovers and monitors resources in the AWS Regions you select as operating Regions.

For more information about operating Regions, see Create an IPAM in the *Amazon VPC IPAM User Guide*.

Type: Array of AddIpamOperatingRegion objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Required: No

**Description**

The description of the IPAM you want to modify.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EnablePrivateGua**

Enable this option to use your own GUA ranges as private IPv6 addresses. This option is disabled by default.

Type: Boolean

Required: No

**IpamId**

The ID of the IPAM you want to modify.

Type: String

Required: Yes

**MeteredAccount**

A metered account is an AWS account that is charged for active IP addresses managed in IPAM. For more information, see Enable cost distribution in the *Amazon VPC IPAM User Guide*.

Possible values:

- `ipam-owner` (default): The AWS account which owns the IPAM is charged for all active IP addresses managed in IPAM.
- `resource-owner`: The AWS account that owns the IP address is charged for the active IP address.

Type: String

Valid Values: `ipam-owner | resource-owner`

Required: No

**RemoveOperatingRegion.N**

The operating Regions to remove.

Type: Array of RemoveIpamOperatingRegion objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Required: No

**Tier**

IPAM is offered in a Free Tier and an Advanced Tier. For more information about the features available in each tier and the costs associated with the tiers, see Amazon VPC pricing > IPAM tab.

Type: String

Valid Values: `free | advanced`

Required: No

## Response Elements

The following elements are returned by the service.

**ipam**

The results of the modification.

Type: Ipam object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyIpamPolicyAllocationRules

Modifies the allocation rules in an IPAM policy.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

Allocation rules are optional configurations within an IPAM policy that map AWS resource types to specific IPAM pools. If no rules are defined, the resource types default to using Amazon-provided IP addresses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationRule.N**

The new allocation rules to apply to the IPAM policy.

Allocation rules are optional configurations within an IPAM policy that map AWS resource types to specific IPAM pools. If no rules are defined, the resource types default to using Amazon-provided IP addresses.

Type: Array of IpamPolicyAllocationRuleRequest objects

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPolicyId**

The ID of the IPAM policy whose allocation rules you want to modify.

Type: String

Required: Yes

**Locale**

The locale for which to modify the allocation rules.

Type: String

Required: Yes

**ResourceType**

The resource type for which to modify the allocation rules.

The AWS service or resource type that can use IP addresses through IPAM policies. Supported services and resource types include:

- Elastic IP addresses

Type: String

Valid Values: `alb | eip | rds | rnat`

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamPolicyDocument**

The modified IPAM policy containing the updated allocation rules.

Type: IpamPolicyDocument object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyIpamPool

Modify the configurations of an IPAM pool.

For more information, see Modify a pool in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddAllocationResourceTag.N**

Add tag allocation rules to a pool. For more information about allocation rules, see Create a top-level pool in the *Amazon VPC IPAM User Guide*.

Type: Array of RequestIpamResourceTag objects

Required: No

**AllocationDefaultNetmaskLength**

The default netmask length for allocations added to this pool. If, for example, the CIDR assigned to this pool is 10.0.0.0/8 and you enter 16 here, new allocations will default to 10.0.0.0/16.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 128.

Required: No

**AllocationMaxNetmaskLength**

The maximum netmask length possible for CIDR allocations in this IPAM pool to be compliant. Possible netmask lengths for IPv4 addresses are 0 - 32. Possible netmask lengths for IPv6 addresses are 0 - 128.The maximum netmask length must be greater than the minimum netmask length.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 128.

Required: No

**AllocationMinNetmaskLength**

The minimum netmask length required for CIDR allocations in this IPAM pool to be compliant. Possible netmask lengths for IPv4 addresses are 0 - 32. Possible netmask lengths for IPv6 addresses are 0 - 128. The minimum netmask length must be less than the maximum netmask length.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 128.

Required: No

**AutoImport**

If true, IPAM will continuously look for resources within the CIDR range of this pool and automatically import them as allocations into your IPAM. The CIDRs that will be allocated for these resources must not already be allocated to other resources in order for the import to succeed. IPAM will import a CIDR regardless of its compliance with the pool's allocation rules, so a resource might be imported and subsequently marked as noncompliant. If IPAM discovers multiple CIDRs that overlap, IPAM will import the largest CIDR only. If IPAM discovers multiple CIDRs with matching CIDRs, IPAM will randomly import one of them only.

A locale must be set on the pool for this feature to work.

Type: Boolean

Required: No

**ClearAllocationDefaultNetmaskLength**

Clear the default netmask length allocation rule for this pool.

Type: Boolean

Required: No

**Description**

The description of the IPAM pool you want to modify.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPoolId**

The ID of the IPAM pool you want to modify.

Type: String

Required: Yes

**RemoveAllocationResourceTag.N**

Remove tag allocation rules from a pool.

Type: Array of RequestIpamResourceTag objects

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPool**

The results of the modification.

Type: IpamPool object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyIpamPoolAllocation

Modifies the description of an IPAM pool allocation. For more information, see Modify an IPAM pool allocation in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Description**

The new description for the IPAM pool allocation. If you submit a `null` value, the description is removed from the allocation.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPoolAllocationId**

The ID of the IPAM pool allocation you want to modify.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamPoolAllocation**

The modified IPAM pool allocation.

Type: IpamPoolAllocation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyIpamPrefixListResolver

Modifies an IPAM prefix list resolver. You can update the description and CIDR selection rules. Changes to rules will trigger re-evaluation and potential updates to associated prefix lists.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Description**

A new description for the IPAM prefix list resolver.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPrefixListResolverId**

The ID of the IPAM prefix list resolver to modify.

Type: String

Required: Yes

**Rule.N**

The updated CIDR selection rules for the resolver. These rules replace the existing rules entirely.

Type: Array of IpamPrefixListResolverRuleRequest objects

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPrefixListResolver**

Information about the modified IPAM prefix list resolver.

Type: IpamPrefixListResolver object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyIpamPrefixListResolverTarget

Modifies an IPAM prefix list resolver target. You can update version tracking settings and the desired version of the target prefix list.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DesiredVersion**

The desired version of the prefix list to target. This allows you to pin the target to a specific version.

Type: Long

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPrefixListResolverTargetId**

The ID of the IPAM prefix list resolver target to modify.

Type: String

Required: Yes

**TrackLatestVersion**

Indicates whether the resolver target should automatically track the latest version of the prefix list. When enabled, the target will always synchronize with the most current version.

Choose this for automatic updates when you want your prefix lists to stay current with infrastructure changes without manual intervention.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPrefixListResolverTarget**

Information about the modified IPAM prefix list resolver target.

Type: IpamPrefixListResolverTarget object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyIpamResourceCidr

Modify a resource CIDR. You can use this action to transfer resource CIDRs between scopes and ignore resource CIDRs that you do not want to manage. If set to false, the resource will not be tracked for overlap, it cannot be auto-imported into a pool, and it will be removed from any pool it has an allocation in.

For more information, see Move resource CIDRs between scopes and Change the monitoring state of resource CIDRs in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CurrentIpamScopeId**

The ID of the current scope that the resource CIDR is in.

Type: String

Required: Yes

**DestinationIpamScopeId**

The ID of the scope you want to transfer the resource CIDR to.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Monitored**

Determines if the resource is monitored by IPAM. If a resource is monitored, the resource is discovered by IPAM and you can view details about the resource's CIDR.

Type: Boolean

Required: Yes

**ResourceCidr**

The CIDR of the resource you want to modify.

Type: String

Required: Yes

**ResourceId**

The ID of the resource you want to modify.

Type: String

Required: Yes

**ResourceRegion**

The AWS Region of the resource you want to modify.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**ipamResourceCidr**

The CIDR of the resource.

Type: IpamResourceCidr object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyIpamResourceDiscovery

Modifies a resource discovery. A resource discovery is an IPAM component that enables IPAM to manage and monitor resources that belong to the owning account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddOperatingRegion.N**

Add operating Regions to the resource discovery. Operating Regions are AWS Regions where the IPAM is allowed to manage IP address CIDRs. IPAM only discovers and monitors resources in the AWS Regions you select as operating Regions.

Type: Array of AddIpamOperatingRegion objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Required: No

**AddOrganizationalUnitExclusion.N**

Add an Organizational Unit (OU) exclusion to your IPAM. If your IPAM is integrated with AWS Organizations and you add an organizational unit (OU) exclusion, IPAM will not manage the IP addresses in accounts in that OU exclusion. There is a limit on the number of exclusions you can create. For more information, see Quotas for your IPAM in the *Amazon VPC IPAM User Guide*.

> **Note**
>
> The resulting set of exclusions must not result in "overlap", meaning two or more OU exclusions must not exclude the same OU. For more information and examples, see the AWS CLI request process in Add or remove OU exclusions in the *Amazon VPC User Guide*.

Type: Array of AddIpamOrganizationalUnitExclusion objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: No

**Description**

A resource discovery description.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamResourceDiscoveryId**

A resource discovery ID.

Type: String

Required: Yes

**RemoveOperatingRegion.N**

Remove operating Regions.

Type: Array of RemoveIpamOperatingRegion objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Required: No

**RemoveOrganizationalUnitExclusion.N**

Remove an Organizational Unit (OU) exclusion to your IPAM. If your IPAM is integrated with AWS Organizations and you add an organizational unit (OU) exclusion, IPAM will not manage the IP addresses in accounts in that OU exclusion. There is a limit on the number of exclusions you can create. For more information, see Quotas for your IPAM in the *Amazon VPC IPAM User Guide*.

> **Note**
>
> The resulting set of exclusions must not result in "overlap", meaning two or more OU exclusions must not exclude the same OU. For more information and examples, see the AWS CLI request process in Add or remove OU exclusions in the *Amazon VPC User Guide*.

Type: Array of RemoveIpamOrganizationalUnitExclusion objects

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: No

## Response Elements

The following elements are returned by the service.

**ipamResourceDiscovery**

A resource discovery.

Type: IpamResourceDiscovery object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyIpamScope

Modify an IPAM scope.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Description**

The description of the scope you want to modify.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ExternalAuthorityConfiguration**

The configuration that links an Amazon VPC IPAM scope to an external authority system. It specifies the type of external system and the external resource identifier that identifies your account or instance in that system.

In IPAM, an external authority is a third-party IP address management system that provides CIDR blocks when you provision address space for top-level IPAM pools. This allows you to use your existing IP management system to control which address ranges are allocated to AWS while using Amazon VPC IPAM to manage subnets within those ranges.

Type: ExternalAuthorityConfiguration object

Required: No

**IpamScopeId**

The ID of the scope you want to modify.

Type: String

Required: Yes

**RemoveExternalAuthorityConfiguration**

Remove the external authority configuration. `true` to remove.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**ipamScope**

The results of the modification.

Type: IpamScope object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyLaunchTemplate

Modifies a launch template. You can specify which version of the launch template to set as the default version. When launching an instance, the default version applies when a launch template version is not specified.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. If a client token isn't specified, a randomly generated token is used in the request to ensure idempotency.

For more information, see Ensuring idempotency.

Constraint: Maximum 128 ASCII characters.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LaunchTemplateId**

The ID of the launch template.

You must specify either the launch template ID or the launch template name, but not both.

Type: String

Required: No

**LaunchTemplateName**

The name of the launch template.

You must specify either the launch template ID or the launch template name, but not both.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: `[a-zA-Z0-9\(\)\.\-/_]+`

Required: No

**SetDefaultVersion**

The version number of the launch template to set as the default version.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**launchTemplate**

Information about the launch template.

Type: LaunchTemplate object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example sets version 2 of launch template `lt-0a20c965061f64abc` as the default version.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyLaunchTemplate
&LaunchTemplateId=lt-0a20c965061f64abc
&SetDefaultVersion=2
&AUTHPARAMS
```

### Sample Response

```
<ModifyLaunchTemplateResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>5b348ca5-bb13-4106-baf9-14d02example</requestId>
    <launchTemplate>
        <createTime>1970-01-01T00:00:00.000Z</createTime>
        <createdBy>arn:aws:iam::123456789012:root</createdBy>
        <defaultVersionNumber>2</defaultVersionNumber>
        <latestVersionNumber>4</latestVersionNumber>
        <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
        <launchTemplateName>MyLaunchTemplate</launchTemplateName>
    </launchTemplate>
</ModifyLaunchTemplateResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyLocalGatewayRoute

Modifies the specified local gateway route.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DestinationCidrBlock**

The CIDR block used for destination matches. The value that you provide must match the CIDR of an existing route in the table.

Type: String

Required: No

**DestinationPrefixListId**

The ID of the prefix list. Use a prefix list in place of `DestinationCidrBlock`. You cannot use `DestinationPrefixListId` and `DestinationCidrBlock` in the same request.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: Yes

**LocalGatewayVirtualInterfaceGroupId**

The ID of the virtual interface group.

Type: String

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**route**

Information about the local gateway route table.

Type: LocalGatewayRoute object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyManagedPrefixList

Modifies the specified managed prefix list.

Adding or removing entries in a prefix list creates a new version of the prefix list. Changing the name of the prefix list does not affect the version.

If you specify a current version number that does not match the true current version number, the request fails.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddEntry.N**

One or more entries to add to the prefix list.

Type: Array of AddPrefixListEntry objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

Required: No

**CurrentVersion**

The current version of the prefix list.

Type: Long

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPrefixListResolverSyncEnabled**

Indicates whether synchronization with an IPAM prefix list resolver should be enabled for this managed prefix list. When enabled, the prefix list CIDRs are automatically updated based on the associated resolver's CIDR selection rules.

Type: Boolean

Required: No

**MaxEntries**

The maximum number of entries for the prefix list. You cannot modify the entries of a prefix list and modify the size of a prefix list at the same time.

If any of the resources that reference the prefix list cannot support the new maximum size, the modify operation fails. Check the state message for the IDs of the first ten resources that do not support the new maximum size.

Type: Integer

Required: No

**PrefixListId**

The ID of the prefix list.

Type: String

Required: Yes

**PrefixListName**

A name for the prefix list.

Type: String

Required: No

**RemoveEntry.N**

One or more entries to remove from the prefix list.

Type: Array of RemovePrefixListEntry objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

Required: No

## Response Elements

The following elements are returned by the service.

**prefixList**

Information about the prefix list.

Type: ManagedPrefixList object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example modifies the specified managed prefix list by adding another entry.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyManagedPrefixList
&PrefixListId=pl-0123123123123aabb
&CurrentVersion=1
&AddEntry.1.Cidr=10.1.0.0/16
&AddEntry.1.Description=Miami office
&AUTHPARAMS
```

#### Sample Response

```
<ModifyManagedPrefixListResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>602f3752-c348-4b14-81e2-example</requestId>
```

```
    <prefixList>
        <addressFamily>IPv4</addressFamily>
        <maxEntries>10</maxEntries>
        <ownerId>123456789012</ownerId>
        <prefixListArn>arn:aws:ec2:us-east-1:123456789012:prefix-list/
pl-0123123123123aabb</prefixListArn>
        <prefixListId>pl-0123123123123aabb</prefixListId>
        <prefixListName>tgw-attachments</prefixListName>
        <state>modify-in-progress</state>
        <version>1</version>
    </prefixList>
</ModifyManagedPrefixListResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyManagedResourceVisibility

Modifies the managed resource visibility configuration for the account. Use this operation to control whether managed resources are hidden or visible by default. Visibility settings are account-wide and affect all IAM principals uniformly. Hidden resources remain fully operational and billable.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DefaultVisibility**

The default visibility setting for managed resources. Valid values: `hidden` | `visible`.

Type: String

Valid Values: `hidden | visible`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**visibility**

The updated managed resource visibility settings for the account.

Type: ManagedResourceVisibilitySettings object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyNetworkInterfaceAttribute

Modifies the specified network interface attribute. You can specify only one attribute at a time. You can use this action to attach and detach security groups from an existing EC2 instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociatedSubnetId.N**

A list of subnet IDs to associate with the network interface.

Type: Array of strings

Required: No

**AssociatePublicIpAddress**

Indicates whether to assign a public IPv4 address to a network interface. This option can be enabled for any network interface but will only apply to the primary network interface (eth0).

Type: Boolean

Required: No

**Attachment**

Information about the interface attachment. If modifying the `delete on termination` attribute, you must specify the ID of the interface attachment.

Type: NetworkInterfaceAttachmentChanges object

Required: No

**ConnectionTrackingSpecification**

A connection tracking specification.

Type: ConnectionTrackingSpecificationRequest object

Required: No

**Description**

A description for the network interface.

Type: AttributeValue object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EnablePrimaryIpv6**

If you're modifying a network interface in a dual-stack or IPv6-only subnet, you have the option to assign a primary IPv6 IP address. A primary IPv6 address is an IPv6 GUA address associated with an ENI that you have enabled to use a primary IPv6 address. Use this option if the instance that this ENI will be attached to relies on its IPv6 address not changing. AWS will automatically assign an IPv6 address associated with the ENI attached to your instance to be the primary IPv6 address. Once you enable an IPv6 GUA address to be a primary IPv6, you cannot disable it. When you enable an IPv6 GUA address to be a primary IPv6, the first IPv6 GUA will be made the primary IPv6 address until the instance is terminated or the network interface is detached. If you have multiple IPv6 addresses associated with an ENI attached to your instance and you enable a primary IPv6 address, the first IPv6 GUA address associated with the ENI becomes the primary IPv6 address.

Type: Boolean

Required: No

**EnaSrdSpecification**

Updates the ENA Express configuration for the network interface that's attached to the instance.

Type: EnaSrdSpecification object

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

**SecurityGroupId.N**

Changes the security groups for the network interface. The new set of groups you specify replaces the current set. You must specify at least one group, even if it's just the default security group in the VPC. You must specify the ID of the security group, not the name.

Type: Array of strings

Required: No

**SourceDestCheck**

Enable or disable source/destination checks, which ensure that the instance is either the source or the destination of any traffic that it receives. If the value is `true`, source/destination checks are enabled; otherwise, they are disabled. The default value is `true`. You must disable source/destination checks if the instance runs services such as network address translation, routing, or firewalls.

Type: AttributeBooleanValue object

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example sets source/destination checking to `false` for the specified network interface.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&SourceDestCheck.Value=false
&AUTHPARAMS
```

#### Sample Response

```
<ModifyNetworkInterfaceAttributeResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>657a4623-5620-4232-b03b-427e852d71cf</requestId>
    <return>true</return>
</ModifyNetworkInterfaceAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyPrivateDnsNameOptions

Modifies the options for instance hostnames for the specified instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EnableResourceNameDnsAAAARecord**

Indicates whether to respond to DNS queries for instance hostnames with DNS AAAA records.

Type: Boolean

Required: No

**EnableResourceNameDnsARecord**

Indicates whether to respond to DNS queries for instance hostnames with DNS A records.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**PrivateDnsHostnameType**

The type of hostname for EC2 instances. For IPv4 only subnets, an instance DNS name must be based on the instance IPv4 address. For IPv6 only subnets, an instance DNS name must be based on the instance ID. For dual-stack subnets, you can specify whether DNS names use the instance IPv4 address or the instance ID.

Type: String

Valid Values: `ip-name | resource-name`

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyPublicIpDnsNameOptions

Modify public hostname options for a network interface. For more information, see EC2 instance hostnames, DNS names, and domains in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**HostnameType**

The public hostname type. For more information, see EC2 instance hostnames, DNS names, and domains in the *Amazon EC2 User Guide*.

- `public-dual-stack-dns-name`: A dual-stack public hostname for a network interface. Requests from within the VPC resolve to both the private IPv4 address and the IPv6 Global Unicast Address of the network interface. Requests from the internet resolve to both the public IPv4 and the IPv6 GUA address of the network interface.
- `public-ipv4-dns-name`: An IPv4-enabled public hostname for a network interface. Requests from within the VPC resolve to the private primary IPv4 address of the network interface. Requests from the internet resolve to the public IPv4 address of the network interface.
- `public-ipv6-dns-name`: An IPv6-enabled public hostname for a network interface. Requests from within the VPC or from the internet resolve to the IPv6 GUA of the network interface.

Type: String

Valid Values: `public-dual-stack-dns-name | public-ipv4-dns-name | public-ipv6-dns-name`

Required: Yes

**NetworkInterfaceId**

A network interface ID.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**successful**

Whether or not the request was successful.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyReservedInstances

Modifies the configuration of your Reserved Instances, such as the Availability Zone, instance count, or instance type. The Reserved Instances to be modified must be identical, except for Availability Zone, network platform, and instance type.

For more information, see Modify Reserved Instances in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token you provide to ensure idempotency of your modification request. For more information, see Ensuring Idempotency.

Type: String

Required: No

**ReservedInstancesConfigurationSetItemType.N**

The configuration settings for the Reserved Instances to modify.

Type: Array of ReservedInstancesConfiguration objects

Required: Yes

**ReservedInstancesId.N**

The IDs of the Reserved Instances to modify.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**reservedInstancesModificationId**

The ID for the modification.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example illustrates one usage of ModifyReservedInstances.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyReservedInstances
&ClientToken=myClientToken
&ReservedInstancesConfigurationSetItemType.1.AvailabilityZone=us-east-1a
&ReservedInstancesConfigurationSetItemType.1.InstanceCount=1
&ReservedInstancesConfigurationSetItemType.1.Platform=EC2-VPC
&ReservedInstancesConfigurationSetItemType.1.InstanceType=m1.small
&ReservedInstancesId.1=d16f7a91-4d0f-4f19-9d7f-a74d26b1ccfa
&AUTHPARAMS
```

#### Sample Response

```
<ModifyReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>bef729b6-0731-4489-8881-2258746ae163</requestId>
<reservedInstancesModificationId>rimod-3aae219d-3d63-47a9-a7e9-e764example</
reservedInstancesModificationId>
</ModifyReservedInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyRouteServer

Modifies the configuration of an existing route server.

Amazon VPC Route Server simplifies routing for traffic between workloads that are deployed within a VPC and its internet gateways. With this feature, VPC Route Server dynamically updates VPC and internet gateway route tables with your preferred IPv4 or IPv6 routes to achieve routing fault tolerance for those workloads. This enables you to automatically reroute traffic within a VPC, which increases the manageability of VPC routing and interoperability with third-party workloads.

Route server supports the follow route table types:

- VPC route tables not associated with subnets
- Subnet route tables
- Internet gateway route tables

Route server does not support route tables associated with virtual private gateways. To propagate routes into a transit gateway route table, use Transit Gateway Connect.

For more information see Dynamic routing in your VPC with VPC Route Server in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PersistRoutes**

Specifies whether to persist routes after all BGP sessions are terminated.

- enable: Routes will be persisted in FIB and RIB after all BGP sessions are terminated.
- disable: Routes will not be persisted in FIB and RIB after all BGP sessions are terminated.
- reset: If a route server has persisted routes due to all BGP sessions having ended, reset will withdraw all routes and reset route server to an empty FIB and RIB.

Type: String

Valid Values: `enable | disable | reset`

Required: No

**PersistRoutesDuration**

The number of minutes a route server will wait after BGP is re-established to unpersist the routes in the FIB and RIB. Value must be in the range of 1-5. Required if PersistRoutes is `enabled`.

If you set the duration to 1 minute, then when your network appliance re-establishes BGP with route server, it has 1 minute to relearn it's adjacent network and advertise those routes to route server before route server resumes normal functionality. In most cases, 1 minute is probably sufficient. If, however, you have concerns that your BGP network may not be capable of fully re-establishing and re-learning everything in 1 minute, you can increase the duration up to 5 minutes.

Type: Long

Required: No

**RouteServerId**

The ID of the route server to modify.

Type: String

Required: Yes

**SnsNotificationsEnabled**

Specifies whether to enable SNS notifications for route server events. Enabling SNS notifications persists BGP status changes to an SNS topic provisioned by AWS.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**routeServer**

Information about the modified route server.

Type: RouteServer object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifySecurityGroupRules

Modifies the rules of a security group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupId**

The ID of the security group.

Type: String

Required: Yes

**SecurityGroupRule.N**

Information about the security group properties to update.

Type: Array of SecurityGroupRuleUpdate objects

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifySnapshotAttribute

Adds or removes permission settings for the specified snapshot. You may add or remove specified AWS account IDs from a snapshot's list of create volume permissions, but you cannot do both in a single operation. If you need to both add and remove account IDs for a snapshot, you must use multiple operations. You can make up to 500 modifications to a snapshot in a single operation.

Encrypted snapshots and snapshots with AWS Marketplace product codes cannot be made public. Snapshots encrypted with your default KMS key cannot be shared with other accounts.

For more information about modifying snapshot permissions, see Share a snapshot in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The snapshot attribute to modify. Only volume creation permissions can be modified.

Type: String

Valid Values: `productCodes | createVolumePermission`

Required: No

**CreateVolumePermission**

A JSON representation of the snapshot attribute modification.

Type: CreateVolumePermissionModifications object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**OperationType**

The type of operation to perform to the attribute.

Type: String

Valid Values: `add | remove`

Required: No

**SnapshotId**

The ID of the snapshot.

Type: String

Required: Yes

**UserGroup.N**

The group to modify for the snapshot.

Type: Array of strings

Required: No

**UserId.N**

The account ID to modify for the snapshot.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example makes the `snap-1234567890abcdef0` snapshot public, and gives the account with ID `111122223333` permission to create volumes from the snapshot.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&SnapshotId=snap-1234567890abcdef0
&CreateVolumePermission.Add.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

#### Sample Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</ModifySnapshotAttributeResponse>
```

### Example

This example makes the `snap-1234567890abcdef0` snapshot public, and removes the account with ID `111122223333` from the list of users with permission to create volumes from the snapshot.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
```

```
&SnapshotId=snap-1234567890abcdef0
&CreateVolumePermission.Remove.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

### Sample Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</ModifySnapshotAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifySnapshotTier

Archives an Amazon EBS snapshot. When you archive a snapshot, it is converted to a full snapshot that includes all of the blocks of data that were written to the volume at the time the snapshot was created, and moved from the standard tier to the archive tier. For more information, see Archive Amazon EBS snapshots in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SnapshotId**

The ID of the snapshot.

Type: String

Required: Yes

**StorageTier**

The name of the storage tier. You must specify `archive`.

Type: String

Valid Values: `archive`

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**snapshotId**

The ID of the snapshot.

Type: String

**tieringStartTime**

The date and time when the archive process was started.

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifySpotFleetRequest

Modifies the specified Spot Fleet request.

You can only modify a Spot Fleet request of type `maintain`.

While the Spot Fleet request is being modified, it is in the `modifying` state.

To scale up your Spot Fleet, increase its target capacity. The Spot Fleet launches the additional Spot Instances according to the allocation strategy for the Spot Fleet request. If the allocation strategy is `lowestPrice`, the Spot Fleet launches instances using the Spot Instance pool with the lowest price. If the allocation strategy is `diversified`, the Spot Fleet distributes the instances across the Spot Instance pools. If the allocation strategy is `capacityOptimized`, Spot Fleet launches instances from Spot Instance pools with optimal capacity for the number of instances that are launching.

To scale down your Spot Fleet, decrease its target capacity. First, the Spot Fleet cancels any open requests that exceed the new target capacity. You can request that the Spot Fleet terminate Spot Instances until the size of the fleet no longer exceeds the new target capacity. If the allocation strategy is `lowestPrice`, the Spot Fleet terminates the instances with the highest price per unit. If the allocation strategy is `capacityOptimized`, the Spot Fleet terminates the instances in the Spot Instance pools that have the least available Spot Instance capacity. If the allocation strategy is `diversified`, the Spot Fleet terminates instances across the Spot Instance pools. Alternatively, you can request that the Spot Fleet keep the fleet at its current size, but not replace any Spot Instances that are interrupted or that you terminate manually.

If you are finished with your Spot Fleet for now, but will use it again later, you can set the target capacity to 0.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Context**

Reserved.

Type: String

Required: No

**ExcessCapacityTerminationPolicy**

Indicates whether running instances should be terminated if the target capacity of the Spot Fleet request is decreased below the current size of the Spot Fleet.

Supported only for fleets of type `maintain`.

Type: String

Valid Values: `noTermination | default`

Required: No

**LaunchTemplateConfig.N**

The launch template and overrides. You can only use this parameter if you specified a launch template (`LaunchTemplateConfigs`) in your Spot Fleet request. If you specified `LaunchSpecifications` in your Spot Fleet request, then omit this parameter.

Type: Array of LaunchTemplateConfig objects

Required: No

**OnDemandTargetCapacity**

The number of On-Demand Instances in the fleet.

Type: Integer

Required: No

**SpotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

Required: Yes

**TargetCapacity**

The size of the fleet.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

If the request succeeds, the response returns `true`. If the request fails, no response is returned, and instead an error message is returned.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifySubnetAttribute

Modifies a subnet attribute. You can only modify one attribute at a time.

Use this action to modify subnets on AWS Outposts.

- To modify a subnet on an Outpost rack, set both `MapCustomerOwnedIpOnLaunch` and `CustomerOwnedIpv4Pool`. These two parameters act as a single attribute.
- To modify a subnet on an Outpost server, set either `EnableLniAtDeviceIndex` or `DisableLniAtDeviceIndex`.

For more information about AWS Outposts, see the following:

- Outpost servers
- Outpost racks

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssignIpv6AddressOnCreation**

Specify `true` to indicate that network interfaces created in the specified subnet should be assigned an IPv6 address. This includes a network interface that's created when launching an instance into the subnet (the instance therefore receives an IPv6 address).

If you enable the IPv6 addressing feature for your subnet, your network interface or instance only receives an IPv6 address if it's created using version `2016-11-15` or later of the Amazon EC2 API.

Type: AttributeBooleanValue object

Required: No

**CustomerOwnedIpv4Pool**

The customer-owned IPv4 address pool associated with the subnet.

You must set this value when you specify `true` for `MapCustomerOwnedIpOnLaunch`.

Type: String

Required: No

**DisableLniAtDeviceIndex**

Specify `true` to indicate that local network interfaces at the current position should be disabled.

Type: AttributeBooleanValue object

Required: No

**EnableDns64**

Indicates whether DNS queries made to the Amazon-provided DNS Resolver in this subnet should return synthetic IPv6 addresses for IPv4-only destinations.

You must first configure a NAT gateway in a public subnet (separate from the subnet containing the IPv6-only workloads). For example, the subnet containing the NAT gateway should have a `0.0.0.0/0` route pointing to the internet gateway. For more information, see Configure DNS64 and NAT64 in the *Amazon VPC User Guide*.

Type: AttributeBooleanValue object

Required: No

**EnableLniAtDeviceIndex**

Indicates the device position for local network interfaces in this subnet. For example, 1 indicates local network interfaces in this subnet are the secondary network interface (eth1). A local network interface cannot be the primary network interface (eth0).

Type: Integer

Required: No

**EnableResourceNameDnsAAAARecordOnLaunch**

Indicates whether to respond to DNS queries for instance hostnames with DNS AAAA records.

Type: AttributeBooleanValue object

Required: No

**EnableResourceNameDnsARecordOnLaunch**

Indicates whether to respond to DNS queries for instance hostnames with DNS A records.

Type: AttributeBooleanValue object

Required: No

**MapCustomerOwnedIpOnLaunch**

Specify `true` to indicate that network interfaces attached to instances created in the specified subnet should be assigned a customer-owned IPv4 address.

When this value is `true`, you must specify the customer-owned IP pool using `CustomerOwnedIpv4Pool`.

Type: AttributeBooleanValue object

Required: No

**MapPublicIpOnLaunch**

Specify `true` to indicate that network interfaces attached to instances created in the specified subnet should be assigned a public IPv4 address.

AWS charges for all public IPv4 addresses, including public IPv4 addresses associated with running instances and Elastic IP addresses. For more information, see the *Public IPv4 Address* tab on the Amazon VPC pricing page.

Type: AttributeBooleanValue object

Required: No

**PrivateDnsHostnameTypeOnLaunch**

The type of hostname to assign to instances in the subnet at launch. For IPv4-only and dual-stack (IPv4 and IPv6) subnets, an instance DNS name can be based on the instance IPv4 address (ip-name) or the instance ID (resource-name). For IPv6 only subnets, an instance DNS name must be based on the instance ID (resource-name).

Type: String

Valid Values: `ip-name | resource-name`

Required: No

**SubnetId**

The ID of the subnet.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example modifies the attribute for `subnet-1a2b3c4d` to specify that all instances launched into this subnet are assigned a public IPv4 address.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=ModifySubnetAttribute
&SubnetId=subnet-1a2b3c4d
&MapPublicIpOnLaunch.Value=true
&AUTHPARAMS
```

### Sample Response

```
<ModifySubnetAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>c500a0bc-ad14-46c2-b9c5-e24aexample</requestId>
    <return>true</return>
</ModifySubnetAttributeResponse>
```

## Example 2

This example modifies the attribute for `subnet-1a2b3c4d` to specify that all network interfaces created in this subnet (and therefore all instances launched into this subnet with a new network interface) are assigned an IPv6 address.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySubnetAttribute
&SubnetId=subnet-1a2b3c4d
&AssignIpv6AddressOnCreation.Value=true
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyTrafficMirrorFilterNetworkServices

Allows or restricts mirroring network services.

By default, Amazon DNS network services are not eligible for Traffic Mirror. Use `AddNetworkServices` to add network services to a Traffic Mirror filter. When a network service is added to the Traffic Mirror filter, all traffic related to that network service will be mirrored. When you no longer want to mirror network services, use `RemoveNetworkServices` to remove the network services from the Traffic Mirror filter.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddNetworkService.N**

The network service, for example Amazon DNS, that you want to mirror.

Type: Array of strings

Valid Values: `amazon-dns`

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RemoveNetworkService.N**

The network service, for example Amazon DNS, that you no longer want to mirror.

Type: Array of strings

Valid Values: `amazon-dns`

Required: No

**TrafficMirrorFilterId**

The ID of the Traffic Mirror filter.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**trafficMirrorFilter**

The Traffic Mirror filter that the network service is associated with.

Type: TrafficMirrorFilter object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyTrafficMirrorFilterRule

Modifies the specified Traffic Mirror rule.

`DestinationCidrBlock` and `SourceCidrBlock` must both be an IPv4 range or an IPv6 range.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Description**

The description to assign to the Traffic Mirror rule.

Type: String

Required: No

**DestinationCidrBlock**

The destination CIDR block to assign to the Traffic Mirror rule.

Type: String

Required: No

**DestinationPortRange**

The destination ports that are associated with the Traffic Mirror rule.

Type: TrafficMirrorPortRangeRequest object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Protocol**

The protocol, for example TCP, to assign to the Traffic Mirror rule.

Type: Integer

Required: No

**RemoveField.N**

The properties that you want to remove from the Traffic Mirror filter rule.

When you remove a property from a Traffic Mirror filter rule, the property is set to the default.

Type: Array of strings

Valid Values: `destination-port-range | source-port-range | protocol | description`

Required: No

**RuleAction**

The action to assign to the rule.

Type: String

Valid Values: `accept | reject`

Required: No

**RuleNumber**

The number of the Traffic Mirror rule. This number must be unique for each Traffic Mirror rule in a given direction. The rules are processed in ascending order by rule number.

Type: Integer

Required: No

**SourceCidrBlock**

The source CIDR block to assign to the Traffic Mirror rule.

Type: String

Required: No

**SourcePortRange**

The port range to assign to the Traffic Mirror rule.

Type: TrafficMirrorPortRangeRequest object

Required: No

**TrafficDirection**

The type of traffic to assign to the rule.

Type: String

Valid Values: `ingress | egress`

Required: No

**TrafficMirrorFilterRuleId**

The ID of the Traffic Mirror rule.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**trafficMirrorFilterRule**

> **Note**
>
> Tags are not returned for ModifyTrafficMirrorFilterRule.

A Traffic Mirror rule.

Type: TrafficMirrorFilterRule object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyTrafficMirrorSession

Modifies a Traffic Mirror session.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Description**

The description to assign to the Traffic Mirror session.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PacketLength**

The number of bytes in each packet to mirror. These are bytes after the VXLAN header. To mirror a subset, set this to the length (in bytes) to mirror. For example, if you set this value to 100, then the first 100 bytes that meet the filter criteria are copied to the target. Do not specify this parameter when you want to mirror the entire packet.

For sessions with Network Load Balancer (NLB) traffic mirror targets, the default `PacketLength` will be set to 8500. Valid values are 1-8500. Setting a `PacketLength` greater than 8500 will result in an error response.

Type: Integer

Required: No

**RemoveField.N**

The properties that you want to remove from the Traffic Mirror session.

When you remove a property from a Traffic Mirror session, the property is set to the default.

Type: Array of strings

Valid Values: `packet-length | description | virtual-network-id`

Required: No

**SessionNumber**

The session number determines the order in which sessions are evaluated when an interface is used by multiple sessions. The first session with a matching filter is the one that mirrors the packets.

Valid values are 1-32766.

Type: Integer

Required: No

**TrafficMirrorFilterId**

The ID of the Traffic Mirror filter.

Type: String

Required: No

**TrafficMirrorSessionId**

The ID of the Traffic Mirror session.

Type: String

Required: Yes

**TrafficMirrorTargetId**

The Traffic Mirror target. The target must be in the same VPC as the source, or have a VPC peering connection with the source.

Type: String

Required: No

**VirtualNetworkId**

The virtual network ID of the Traffic Mirror session.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**trafficMirrorSession**

Information about the Traffic Mirror session.

Type: TrafficMirrorSession object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyTransitGateway

Modifies the specified transit gateway. When you modify a transit gateway, the modified options are applied to new transit gateway attachments only. Your existing transit gateway attachments are not modified.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Description**

The description for the transit gateway.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Options**

The options to modify.

Type: ModifyTransitGatewayOptions object

Required: No

**TransitGatewayId**

The ID of the transit gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGateway**

Information about the transit gateway.

Type: TransitGateway object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyTransitGatewayMeteringPolicy

Modifies a transit gateway metering policy.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddMiddleboxAttachmentId.N**

The IDs of middlebox attachments to add to the metering policy.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RemoveMiddleboxAttachmentId.N**

The IDs of middlebox attachments to remove from the metering policy.

Type: Array of strings

Required: No

**TransitGatewayMeteringPolicyId**

The ID of the transit gateway metering policy to modify.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayMeteringPolicy**

Information about the modified transit gateway metering policy.

Type: TransitGatewayMeteringPolicy object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyTransitGatewayPrefixListReference

Modifies a reference (route) to a prefix list in a specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Blackhole**

Indicates whether to drop traffic that matches this route.

Type: Boolean

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PrefixListId**

The ID of the prefix list.

Type: String

Required: Yes

**TransitGatewayAttachmentId**

The ID of the attachment to which traffic is routed.

Type: String

Required: No

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayPrefixListReference**

Information about the prefix list reference.

Type: TransitGatewayPrefixListReference object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example modifies the prefix list reference in the specified route table by changing the attachment to which traffic is routed.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=ModifyTransitGatewayPrefixListReference
&TransitGatewayRouteTableId=tgw-rtb-0f98a0a5d09abcabc
&PrefixListId=pl-001122334455aabbc
&TransitGatewayAttachmentId=tgw-attach-11223344aabbcc112
```

```
&AUTHPARAMS
```

### Sample Response

```
<ModifyTransitGatewayPrefixListReferenceResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>bbd3e523-3e5b-4d3b-b010-example</requestId>
    <transitGatewayPrefixListReference>
        <blackhole>false</blackhole>
        <prefixListId>pl-001122334455aabbc</prefixListId>
        <prefixListOwnerId>123456789012</prefixListOwnerId>
        <state>modifying</state>
        <transitGatewayAttachment>
            <resourceId>tgw-012233aabbcc11223</resourceId>
            <resourceType>peering</resourceType>
            <transitGatewayAttachmentId>tgw-attach-11223344aabbcc112</
transitGatewayAttachmentId>
        </transitGatewayAttachment>
        <transitGatewayRouteTableId>tgw-rtb-0f98a0a5d09abcabc</
transitGatewayRouteTableId>
    </transitGatewayPrefixListReference>
</ModifyTransitGatewayPrefixListReferenceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyTransitGatewayVpcAttachment

Modifies the specified VPC attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddSubnetIds.N**

The IDs of one or more subnets to add. You can specify at most one subnet per Availability Zone.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Options**

The new VPC attachment options.

Type: ModifyTransitGatewayVpcAttachmentRequestOptions object

Required: No

**RemoveSubnetIds.N**

The IDs of one or more subnets to remove.

Type: Array of strings

Required: No

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayVpcAttachment**

Information about the modified attachment.

Type: TransitGatewayVpcAttachment object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVerifiedAccessEndpoint

Modifies the configuration of the specified AWS Verified Access endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CidrOptions**

The CIDR options.

Type: ModifyVerifiedAccessEndpointCidrOptions object

Required: No

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the Verified Access endpoint.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LoadBalancerOptions**

The load balancer details if creating the Verified Access endpoint as `load-balancer`type.

Type: ModifyVerifiedAccessEndpointLoadBalancerOptions object

Required: No

**NetworkInterfaceOptions**

The network interface options.

Type: ModifyVerifiedAccessEndpointEniOptions object

Required: No

**RdsOptions**

The RDS options.

Type: ModifyVerifiedAccessEndpointRdsOptions object

Required: No

**VerifiedAccessEndpointId**

The ID of the Verified Access endpoint.

Type: String

Required: Yes

**VerifiedAccessGroupId**

The ID of the Verified Access group.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessEndpoint**

Details about the Verified Access endpoint.

Type: VerifiedAccessEndpoint object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVerifiedAccessEndpointPolicy

Modifies the specified AWS Verified Access endpoint policy.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PolicyDocument**

The Verified Access policy document.

Type: String

Required: No

**PolicyEnabled**

The status of the Verified Access policy.

Type: Boolean

Required: No

**SseSpecification**

The options for server side encryption.

Type: VerifiedAccessSseSpecificationRequest object

Required: No

**VerifiedAccessEndpointId**

The ID of the Verified Access endpoint.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**policyDocument**

The Verified Access policy document.

Type: String

**policyEnabled**

The status of the Verified Access policy.

Type: Boolean

**requestId**

The ID of the request.

Type: String

**sseSpecification**

The options in use for server side encryption.

Type: VerifiedAccessSseSpecificationResponse object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVerifiedAccessGroup

Modifies the specified AWS Verified Access group configuration.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the Verified Access group.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessGroupId**

The ID of the Verified Access group.

Type: String

Required: Yes

**VerifiedAccessInstanceId**

The ID of the Verified Access instance.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessGroup**

Details about the Verified Access group.

Type: VerifiedAccessGroup object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVerifiedAccessGroupPolicy

Modifies the specified AWS Verified Access group policy.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PolicyDocument**

The Verified Access policy document.

Type: String

Required: No

**PolicyEnabled**

The status of the Verified Access policy.

Type: Boolean

Required: No

**SseSpecification**

The options for server side encryption.

Type: VerifiedAccessSseSpecificationRequest object

Required: No

**VerifiedAccessGroupId**

The ID of the Verified Access group.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**policyDocument**

The Verified Access policy document.

Type: String

**policyEnabled**

The status of the Verified Access policy.

Type: Boolean

**requestId**

The ID of the request.

Type: String

**sseSpecification**

The options in use for server side encryption.

Type: VerifiedAccessSseSpecificationResponse object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVerifiedAccessInstance

Modifies the configuration of the specified AWS Verified Access instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CidrEndpointsCustomSubDomain**

The custom subdomain.

Type: String

Required: No

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the Verified Access instance.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessInstanceId**

The ID of the Verified Access instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessInstance**

Details about the Verified Access instance.

Type: VerifiedAccessInstance object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVerifiedAccessInstanceLoggingConfiguration

Modifies the logging configuration for the specified AWS Verified Access instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AccessLogs**

The configuration options for Verified Access instances.

Type: VerifiedAccessLogOptions object

Required: Yes

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VerifiedAccessInstanceId**

The ID of the Verified Access instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**loggingConfiguration**

The logging configuration for the Verified Access instance.

Type: VerifiedAccessInstanceLoggingConfiguration object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVerifiedAccessTrustProvider

Modifies the configuration of the specified AWS Verified Access trust provider.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see Ensuring idempotency.

Type: String

Required: No

**Description**

A description for the Verified Access trust provider.

Type: String

Required: No

**DeviceOptions**

The options for a device-based trust provider. This parameter is required when the provider type is `device`.

Type: ModifyVerifiedAccessTrustProviderDeviceOptions object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NativeApplicationOidcOptions**

The OpenID Connect (OIDC) options.

Type: ModifyVerifiedAccessNativeApplicationOidcOptions object

Required: No

**OidcOptions**

The options for an OpenID Connect-compatible user-identity trust provider.

Type: ModifyVerifiedAccessTrustProviderOidcOptions object

Required: No

**SseSpecification**

The options for server side encryption.

Type: VerifiedAccessSseSpecificationRequest object

Required: No

**VerifiedAccessTrustProviderId**

The ID of the Verified Access trust provider.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**verifiedAccessTrustProvider**

Details about the Verified Access trust provider.

Type: VerifiedAccessTrustProvider object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVolume

You can modify several parameters of an existing EBS volume, including volume size, volume type, and IOPS capacity. If your EBS volume is attached to a current-generation EC2 instance type, you might be able to apply these changes without stopping the instance or detaching the volume from it. For more information about modifying EBS volumes, see Amazon EBS Elastic Volumes in the *Amazon EBS User Guide*.

When you complete a resize operation on your volume, you need to extend the volume's file-system size to take advantage of the new storage capacity. For more information, see Extend the file system.

For more information, see Monitor the progress of volume modifications in the *Amazon EBS User Guide*.

With previous-generation instance types, resizing an EBS volume might require detaching and reattaching the volume or stopping and restarting the instance.

After you initiate a volume modification, you must wait for that modification to reach the `completed` state before you can initiate another modification for the same volume. You can modify a volume up to four times within a rolling 24-hour period, as long as the volume is in the `in-use` or `available` state, and all previous modifications for that volume are `completed`. If you exceed this limit, you get an error message that indicates when you can perform your next modification.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Iops**

The target IOPS rate of the volume. This parameter is valid only for gp3, io1, and io2 volumes.

The following are the supported values for each volume type:

- gp3: 3,000 - 80,000 IOPS
- io1: 100 - 64,000 IOPS
- io2: 100 - 256,000 IOPS

> **Note**
>
> Instances built on the Nitro System can support up to 256,000 IOPS. Other instances can support up to 32,000 IOPS.

Default: The existing value is retained if you keep the same volume type. If you change the volume type to io1, io2, or gp3, the default is 3,000.

Type: Integer

Required: No

**MultiAttachEnabled**

Specifies whether to enable Amazon EBS Multi-Attach. If you enable Multi-Attach, you can attach the volume to up to 16 Nitro-based instances in the same Availability Zone. This parameter is supported with io1 and io2 volumes only. For more information, see Amazon EBS Multi-Attach in the *Amazon EBS User Guide*.

Type: Boolean

Required: No

**Size**

The target size of the volume, in GiB. The target volume size must be greater than or equal to the existing size of the volume.

The following are the supported volumes sizes for each volume type:

- gp2: 1 - 16,384 GiB
- gp3: 1 - 65,536 GiB

- `io1`: 4 - 16,384 GiB
- `io2`: 4 - 65,536 GiB
- `st1` and `sc1`: 125 - 16,384 GiB
- `standard`: 1 - 1024 GiB

Default: The existing size is retained.

Type: Integer

Required: No

**Throughput**

The target throughput of the volume, in MiB/s. This parameter is valid only for gp3 volumes. The maximum value is 2,000.

Default: The existing value is retained if the source and target volume type is gp3. Otherwise, the default value is 125.

Valid Range: Minimum value of 125. Maximum value of 2,000.

Type: Integer

Required: No

**VolumeId**

The ID of the volume.

Type: String

Required: Yes

**VolumeType**

The target EBS volume type of the volume. For more information, see Amazon EBS volume types in the *Amazon EBS User Guide*.

Default: The existing type is retained.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**volumeModification**

Information about the volume modification.

Type: VolumeModification object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Modify size, type, and IOPS provisioning of a volume

This example illustrates one usage of ModifyVolume.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVolume
&VolumeId=vol-1234567890EXAMPLE
&VolumeType=io1
&Iops=10000
&Size=200
&Version=2016-11-15
```

#### Sample Response

```
<ModifyVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
```

```
    <volumeModification>
        <targetIops>10000</targetIops>
        <originalIops>300</originalIops>
        <modificationState>modifying</modificationState>
        <targetSize>200</targetSize>
        <targetVolumeType>io1</targetVolumeType>
        <targetMultiAttachEnabled>false</targetMultiAttachEnabled>
        <volumeId>vol-1234567890EXAMPLE</volumeId>
        <progress>0</progress>
        <startTime>2017-01-19T23:58:04.922Z</startTime>
        <originalSize>100</originalSize>
        <originalVolumeType>gp2</originalVolumeType>
        <originalMultiAttachEnabled>false</originalMultiAttachEnabled>
    </volumeModification>
</ModifyVolumeResponse>
```

### Modify Multi-Attach support

This example illustrates one usage of ModifyVolume.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVolume
&VolumeId=vol-1234567890EXAMPLE
&MultiAttachEnabled=true
&Version=2016-11-15
```

#### Sample Response

```
<ModifyVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
    <volumeModification>
        <originalMultiAttachEnabled>false</originalMultiAttachEnabled>
        <targetMultiAttachEnabled>true</targetMultiAttachEnabled>
    </volumeModification>
</ModifyVolumeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVolumeAttribute

Modifies a volume attribute.

By default, all I/O operations for the volume are suspended when the data on the volume is determined to be potentially inconsistent, to prevent undetectable, latent data corruption. The I/O access to the volume can be resumed by first enabling I/O access and then checking the data consistency on your volume.

You can change the default behavior to resume I/O operations. We recommend that you change this only for boot volumes or for volumes that are stateless or disposable.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AutoEnableIO**

Indicates whether the volume should be auto-enabled for I/O operations.

Type: AttributeBooleanValue object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VolumeId**

The ID of the volume.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example modifies the attribute of the volume vol-1234567890abcdef0.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVolumeAttribute
&VolumeId=vol-1234567890abcdef0
&AutoEnableIO.Value=true
&AUTHPARAMS
```

#### Sample Response

```
<ModifyVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
   <return>true</return>
</ModifyVolumeAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpcAttribute

Modifies the specified attribute of the specified VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**EnableDnsHostnames**

Indicates whether the instances launched in the VPC get DNS hostnames. If enabled, instances in the VPC get DNS hostnames; otherwise, they do not.

You cannot modify the DNS resolution and DNS hostnames attributes in the same request. Use separate requests for each attribute. You can only enable DNS hostnames if you've enabled DNS support.

Type: AttributeBooleanValue object

Required: No

**EnableDnsSupport**

Indicates whether the DNS resolution is supported for the VPC. If enabled, queries to the Amazon provided DNS server at the 169.254.169.253 IP address, or the reserved IP address at the base of the VPC network range "plus two" succeed. If disabled, the Amazon provided DNS service in the VPC that resolves public DNS hostnames to IP addresses is not enabled.

You cannot modify the DNS resolution and DNS hostnames attributes in the same request. Use separate requests for each attribute.

Type: AttributeBooleanValue object

Required: No

**EnableNetworkAddressUsageMetrics**

Indicates whether Network Address Usage metrics are enabled for your VPC.

Type: AttributeBooleanValue object

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example disables support for DNS hostnames in the specified VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcAttribute
&VpcId=vpc-1a2b3c4d
&EnableDnsHostnames.Value=false
&AUTHPARAMS
```

### Sample Response

```
<ModifyVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d742de94-5f3e-4c3d-b6d4-440cexample</requestId>
    <return>true</return>
</ModifyVpcAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpcBlockPublicAccessExclusion

Modify VPC Block Public Access (BPA) exclusions. A VPC BPA exclusion is a mode that can be applied to a single VPC or subnet that exempts it from the account's BPA mode and will allow bidirectional or egress-only access. You can create BPA exclusions for VPCs and subnets even when BPA is not enabled on the account to ensure that there is no traffic disruption to the exclusions when VPC BPA is turned on.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ExclusionId**

The ID of an exclusion.

Type: String

Required: Yes

**InternetGatewayExclusionMode**

The exclusion mode for internet gateway traffic.

- `allow-bidirectional`: Allow all internet traffic to and from the excluded VPCs and subnets.
- `allow-egress`: Allow outbound internet traffic from the excluded VPCs and subnets. Block inbound internet traffic to the excluded VPCs and subnets. Only applies when VPC Block Public Access is set to Bidirectional.

Type: String

Valid Values: `allow-bidirectional | allow-egress`

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpcBlockPublicAccessExclusion**

Details related to the exclusion.

Type: VpcBlockPublicAccessExclusion object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python

- AWS SDK for Ruby V3

# ModifyVpcBlockPublicAccessOptions

Modify VPC Block Public Access (BPA) options. VPC Block Public Access (BPA) enables you to block resources in VPCs and subnets that you own in a Region from reaching or being reached from the internet through internet gateways and egress-only internet gateways. To learn more about VPC BPA, see Block public access to VPCs and subnets in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InternetGatewayBlockMode**

The mode of VPC BPA.

- `off`: VPC BPA is not enabled and traffic is allowed to and from internet gateways and egress-only internet gateways in this Region.
- `block-bidirectional`: Block all traffic to and from internet gateways and egress-only internet gateways in this Region (except for excluded VPCs and subnets).
- `block-ingress`: Block all internet traffic to the VPCs in this Region (except for VPCs or subnets which are excluded). Only traffic to and from NAT gateways and egress-only internet gateways is allowed because these gateways only allow outbound connections to be established.

Type: String

Valid Values: `off | block-bidirectional | block-ingress`

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpcBlockPublicAccessOptions**

Details related to the VPC Block Public Access (BPA) options.

Type: VpcBlockPublicAccessOptions object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpcEncryptionControl

Modifies the encryption control configuration for a VPC. You can update the encryption mode and exclusion settings for various gateway types and peering connections.

For more information, see Enforce VPC encryption in transit in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EgressOnlyInternetGatewayExclusion**

Specifies whether to exclude egress-only internet gateway traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**ElasticFileSystemExclusion**

Specifies whether to exclude Elastic File System traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**InternetGatewayExclusion**

Specifies whether to exclude internet gateway traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**LambdaExclusion**

Specifies whether to exclude Lambda function traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**Mode**

The encryption mode for the VPC Encryption Control configuration.

Type: String

Valid Values: `monitor | enforce`

Required: No

**NatGatewayExclusion**

Specifies whether to exclude NAT gateway traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**VirtualPrivateGatewayExclusion**

Specifies whether to exclude virtual private gateway traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**VpcEncryptionControlId**

The ID of the VPC Encryption Control resource to modify.

Type: String

Required: Yes

**VpcLatticeExclusion**

Specifies whether to exclude VPC Lattice traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**VpcPeeringExclusion**

Specifies whether to exclude VPC peering connection traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpcEncryptionControl**

Information about the VPC Encryption Control configuration.

Type: VpcEncryptionControl object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpcEndpoint

Modifies attributes of a specified VPC endpoint. The attributes that you can modify depend on the type of VPC endpoint (interface, gateway, or Gateway Load Balancer). For more information, see the AWS PrivateLink Guide.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddRouteTableId.N**

(Gateway endpoint) The IDs of the route tables to associate with the endpoint.

Type: Array of strings

Required: No

**AddSecurityGroupId.N**

(Interface endpoint) The IDs of the security groups to associate with the endpoint network interfaces.

Type: Array of strings

Required: No

**AddSubnetId.N**

(Interface and Gateway Load Balancer endpoints) The IDs of the subnets in which to serve the endpoint. For a Gateway Load Balancer endpoint, you can specify only one subnet.

Type: Array of strings

Required: No

**DnsOptions**

The DNS options for the endpoint.

Type: DnsOptionsSpecification object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpAddressType**

The IP address type for the endpoint.

Type: String

Valid Values: `ipv4 | dualstack | ipv6`

Required: No

**PolicyDocument**

(Interface and gateway endpoints) A policy to attach to the endpoint that controls access to the service. The policy must be in valid JSON format.

Type: String

Required: No

**PrivateDnsEnabled**

(Interface endpoint) Indicates whether a private hosted zone is associated with the VPC.

Type: Boolean

Required: No

**RemoveRouteTableId.N**

(Gateway endpoint) The IDs of the route tables to disassociate from the endpoint.

Type: Array of strings

Required: No

**RemoveSecurityGroupId.N**

(Interface endpoint) The IDs of the security groups to disassociate from the endpoint network interfaces.

Type: Array of strings

Required: No

**RemoveSubnetId.N**

(Interface endpoint) The IDs of the subnets from which to remove the endpoint.

Type: Array of strings

Required: No

**ResetPolicy**

(Gateway endpoint) Specify `true` to reset the policy document to the default policy. The default policy allows full access to the service.

Type: Boolean

Required: No

**SubnetConfiguration.N**

The subnet configurations for the endpoint.

Type: Array of SubnetConfiguration objects

Required: No

**VpcEndpointId**

The ID of the endpoint.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example modifies gateway endpoint `vpce-1a2b3c4d` by associating route table `rtb-aaa222bb` with the endpoint, and resetting the policy document.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcEndpoint
&VpcEndpointId=vpce-1a2b3c4d
&ResetPolicy=true
&AddRouteTableId.1=rtb-aaa222bb
&AUTHPARAMS
```

#### Sample Response

```
<ModifyVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <return>true</return>
    <requestId>125acea6-ba5c-4c6e-8e17-example</requestId>
</ModifyVpcEndpointResponse>
```

### Example 2

This example modifies interface endpoint `vpce-0fe5b17a0707d6fa5` by adding subnet `subnet-d6fcaa8d` to the endpoint.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcEndpoint
&VpcEndpointId=vpce-0fe5b17a0707d6fa5
&AddSubnetId.1=subnet-d6fcaa8db
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpcEndpointConnectionNotification

Modifies a connection notification for VPC endpoint or VPC endpoint service. You can change the SNS topic for the notification, or the events for which to be notified.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ConnectionEvents.N**

The events for the endpoint. Valid values are `Accept`, `Connect`, `Delete`, and `Reject`.

Type: Array of strings

Required: No

**ConnectionNotificationArn**

The ARN for the SNS topic for the notification.

Type: String

Required: No

**ConnectionNotificationId**

The ID of the notification.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

The following example modifies notification `vpce-nfn-abccb952bc8af7123` by modifying the endpoint events and the SNS topic ARN.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcEndpointConnectionNotification
&ConnectionNotificationId=vpce-nfn-abccb952bc8af7123
&ConnectionNotificationArn=arn:aws:sns:us-east-1:123456789012:mytopic
&ConnectionEvents.1=Accept
&ConnectionEvents.2=Reject
&AUTHPARAMS
```

#### Sample Response

```
<ModifyVpcEndpointConnectionNotificationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>08d80840-f750-42db-a6f8-2cd32example</requestId>
```

```
    <return>true</return>
</ModifyVpcEndpointConnectionNotificationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpcEndpointServiceConfiguration

Modifies the attributes of the specified VPC endpoint service configuration.

If you set or modify the private DNS name, you must prove that you own the private DNS domain name.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AcceptanceRequired**

Indicates whether requests to create an endpoint to the service must be accepted.

Type: Boolean

Required: No

**AddGatewayLoadBalancerArn.N**

The Amazon Resource Names (ARNs) of Gateway Load Balancers to add to the service configuration.

Type: Array of strings

Required: No

**AddNetworkLoadBalancerArn.N**

The Amazon Resource Names (ARNs) of Network Load Balancers to add to the service configuration.

Type: Array of strings

Required: No

**AddSupportedIpAddressType.N**

The IP address types to add to the service configuration.

Type: Array of strings

Required: No

**AddSupportedRegion.N**

The supported Regions to add to the service configuration.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PrivateDnsName**

(Interface endpoint configuration) The private DNS name to assign to the endpoint service.

Type: String

Required: No

**RemoveGatewayLoadBalancerArn.N**

The Amazon Resource Names (ARNs) of Gateway Load Balancers to remove from the service configuration.

Type: Array of strings

Required: No

**RemoveNetworkLoadBalancerArn.N**

The Amazon Resource Names (ARNs) of Network Load Balancers to remove from the service configuration.

Type: Array of strings

Required: No

**RemovePrivateDnsName**

(Interface endpoint configuration) Removes the private DNS name of the endpoint service.

Type: Boolean

Required: No

**RemoveSupportedIpAddressType.N**

The IP address types to remove from the service configuration.

Type: Array of strings

Required: No

**RemoveSupportedRegion.N**

The supported Regions to remove from the service configuration.

Type: Array of strings

Required: No

**ServiceId**

The ID of the service.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example modifies service configuration `vpce-svc-03d5ebb7d9579a2b3` to specify that acceptance is required for interface VPC endpoint connection requests to the service, and to assign a private DNS name to the endpoint service.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcEndpointServiceConfiguration
&ServiceId=vpce-svc-03d5ebb7d9579a2b3
&AcceptanceRequired=true
&PrivateDnsName=myexampleservice.com
&AUTHPARAMS
```

#### Sample Response

```
<ModifyVpcEndpointServiceConfigurationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>08d80840-f750-42db-a6f8-2cd32example</requestId>
    <return>true</return>
</ModifyVpcEndpointServiceConfigurationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpcEndpointServicePayerResponsibility

Modifies the payer responsibility for your VPC endpoint service.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PayerResponsibility**

The entity that is responsible for the endpoint costs. The default is the endpoint owner. If you set the payer responsibility to the service owner, you cannot set it back to the endpoint owner.

Type: String

Valid Values: `ServiceOwner`

Required: Yes

**ServiceId**

The ID of the service.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpcEndpointServicePermissions

Modifies the permissions for your VPC endpoint service. You can add or remove permissions for service consumers (AWS accounts, users, and IAM roles) to connect to your endpoint service. Principal ARNs with path components aren't supported.

If you grant permissions to all principals, the service is public. Any users who know the name of a public service can send a request to attach an endpoint. If the service does not require manual approval, attachments are automatically approved.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AddAllowedPrincipals.N**

The Amazon Resource Names (ARN) of the principals. Permissions are granted to the principals in this list. To grant permissions to all principals, specify an asterisk (*).

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RemoveAllowedPrincipals.N**

The Amazon Resource Names (ARN) of the principals. Permissions are revoked for principals in this list.

Type: Array of strings

Required: No

**ServiceId**

The ID of the service.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**addedPrincipalSet**

Information about the added principals.

Type: Array of AddedPrincipal objects

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example permits all principals in AWS account `123456789012` to connect to your endpoint service `vpce-svc-03d5ebb7d9579a2b3`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcEndpointServicePermissions
&ServiceId=vpce-svc-03d5ebb7d9579a2b3
&AddAllowedPrincipals.1=arn:aws:iam::123456789012:root
&AUTHPARAMS
```

### Sample Response

```
<ModifyVpcEndpointServicePermissionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>08d80840-f750-42db-a6f8-2cd32example</requestId>
    <return>true</return>
</ModifyVpcEndpointServicePermissionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpcPeeringConnectionOptions

Modifies the VPC peering connection options on one side of a VPC peering connection.

If the peered VPCs are in the same AWS account, you can enable DNS resolution for queries from the local VPC. This ensures that queries from the local VPC resolve to private IP addresses in the peer VPC. This option is not available if the peered VPCs are in different AWS accounts or different Regions. For peered VPCs in different AWS accounts, each AWS account owner must initiate a separate request to modify the peering connection options. For inter-region peering connections, you must use the Region for the requester VPC to modify the requester VPC peering options and the Region for the accepter VPC to modify the accepter VPC peering options. To verify which VPCs are the accepter and the requester for a VPC peering connection, use the DescribeVpcPeeringConnections command.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AccepterPeeringConnectionOptions**

The VPC peering connection options for the accepter VPC.

Type: PeeringConnectionOptionsRequest object

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RequesterPeeringConnectionOptions**

The VPC peering connection options for the requester VPC.

Type: PeeringConnectionOptionsRequest object

Required: No

**VpcPeeringConnectionId**

The ID of the VPC peering connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**accepterPeeringConnectionOptions**

Information about the VPC peering connection options for the accepter VPC.

Type: PeeringConnectionOptions object

**requesterPeeringConnectionOptions**

Information about the VPC peering connection options for the requester VPC.

Type: PeeringConnectionOptions object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

In this example, you want the public DNS hostnames of your instances in your VPC to resolve to private IP addresses when queried from instances in the peer VPC. You were the accepter of the VPC peering connection, therefore you modify the accepter VPC peering connection options.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcPeeringConnectionOptions
&VpcPeeringConnectionId=pcx-1a2b3c4d
&AccepterPeeringConnectionOptions.AllowDnsResolutionFromRemoteVpc=true
&AUTHPARAMS
```

### Sample Response

```
<ModifyVpcPeeringConnectionOptionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>f5131846-7920-4359-b565-example</requestId>
  <accepterPeeringConnectionOptions>
    <allowDnsResolutionFromRemoteVpc>true</allowDnsResolutionFromRemoteVpc>
  </accepterPeeringConnectionOptions>
</ModifyVpcPeeringConnectionOptionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpcTenancy

Modifies the instance tenancy attribute of the specified VPC. You can change the instance tenancy attribute of a VPC to `default` only. You cannot change the instance tenancy attribute to `dedicated`.

After you modify the tenancy of the VPC, any new instances that you launch into the VPC have a tenancy of `default`, unless you specify otherwise during launch. The tenancy of any existing instances in the VPC is not affected.

For more information, see Dedicated Instances in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceTenancy**

The instance tenancy attribute for the VPC.

Type: String

Valid Values: `default`

Required: Yes

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example modifies the tenancy of `vpc-1a2b3c4d` to `default`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcTenancy
&VpcId=vpc-1a2b3c4d
&InstanceTenancy=default
&AUTHPARAMS
```

#### Sample Response

```
<ModifyVpcTenancyResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <return>true</return>
    <requestId>125acea6-ba5c-4c6e-8e17-example</requestId>
```

```
</ModifyVpcTenancyResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpnConnection

Modifies the customer gateway or the target gateway of an AWS Site-to-Site VPN connection. To modify the target gateway, the following migration options are available:

- An existing virtual private gateway to a new virtual private gateway
- An existing virtual private gateway to a transit gateway
- An existing transit gateway to a new transit gateway
- An existing transit gateway to a virtual private gateway

Before you perform the migration to the new gateway, you must configure the new gateway. Use CreateVpnGateway to create a virtual private gateway, or CreateTransitGateway to create a transit gateway.

This step is required when you migrate from a virtual private gateway with static routes to a transit gateway.

You must delete the static routes before you migrate to the new gateway.

Keep a copy of the static route before you delete it. You will need to add back these routes to the transit gateway after the VPN connection migration is complete.

After you migrate to the new gateway, you might need to modify your VPC route table. Use CreateRoute and DeleteRoute to make the changes described in Update VPC route tables in the *AWS Site-to-Site VPN User Guide*.

When the new gateway is a transit gateway, modify the transit gateway route table to allow traffic between the VPC and the AWS Site-to-Site VPN connection. Use CreateTransitGatewayRoute to add the routes.

If you deleted VPN static routes, you must add the static routes to the transit gateway route table.

After you perform this operation, the VPN endpoint's IP addresses on the AWS side and the tunnel options remain intact. Your AWS Site-to-Site VPN connection will be temporarily unavailable for a brief period while we provision the new endpoints.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CustomerGatewayId**

The ID of the customer gateway at your end of the VPN connection.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

**VpnConnectionId**

The ID of the VPN connection.

Type: String

Required: Yes

**VpnGatewayId**

The ID of the virtual private gateway at the AWS side of the VPN connection.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpnConnection**

Information about the VPN connection.

Type: VpnConnection object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpnConnectionOptions

Modifies the connection options for your Site-to-Site VPN connection.

When you modify the VPN connection options, the VPN endpoint IP addresses on the AWS side do not change, and the tunnel options do not change. Your VPN connection will be temporarily unavailable for a brief period while the VPN connection is updated.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**LocalIpv4NetworkCidr**

The IPv4 CIDR on the customer gateway (on-premises) side of the VPN connection.

Default: `0.0.0.0/0`

Type: String

Required: No

**LocalIpv6NetworkCidr**

The IPv6 CIDR on the customer gateway (on-premises) side of the VPN connection.

Default: `::/0`

Type: String

Required: No

**RemoteIpv4NetworkCidr**

The IPv4 CIDR on the AWS side of the VPN connection.

Default: `0.0.0.0/0`

Type: String

Required: No

**RemoteIpv6NetworkCidr**

The IPv6 CIDR on the AWS side of the VPN connection.

Default: `::/0`

Type: String

Required: No

**TunnelBandwidth**

The desired bandwidth specification for the VPN connection. `standard` supports up to 1.25 Gbps per tunnel, while `large` supports up to 5 Gbps per tunnel. Large bandwidth is only available for VPN connections attached to a transit gateway or to Cloud WAN. The default value is `standard`.

Type: String

Valid Values: `standard | large`

Required: No

**VpnConnectionId**

The ID of the Site-to-Site VPN connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpnConnection**

Information about the VPN connection.

Type: VpnConnection object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpnTunnelCertificate

Modifies the VPN tunnel endpoint certificate.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpnConnectionId**

The ID of the AWS Site-to-Site VPN connection.

Type: String

Required: Yes

**VpnTunnelOutsideIpAddress**

The external IP address of the VPN tunnel.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpnConnection**

Information about the VPN connection.

Type: VpnConnection object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ModifyVpnTunnelOptions

Modifies the options for a VPN tunnel in an AWS Site-to-Site VPN connection. You can modify multiple options for a tunnel in a single request, but you can only modify one tunnel at a time. For more information, see Site-to-Site VPN tunnel options for your Site-to-Site VPN connection in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PreSharedKeyStorage**

Specifies the storage mode for the pre-shared key (PSK). Valid values are `Standard` (stored in Site-to-Site VPN service) or `SecretsManager` (stored in AWS Secrets Manager).

Type: String

Required: No

**SkipTunnelReplacement**

Choose whether or not to trigger immediate tunnel replacement. This is only applicable when turning on or off `EnableTunnelLifecycleControl`.

Valid values: `True` | `False`

Type: Boolean

Required: No

**TunnelOptions**

The tunnel options to modify.

Type: ModifyVpnTunnelOptionsSpecification object

Required: Yes

**VpnConnectionId**

The ID of the AWS Site-to-Site VPN connection.

Type: String

Required: Yes

**VpnTunnelOutsideIpAddress**

The external IP address of the VPN tunnel.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**vpnConnection**

Information about the VPN connection.

Type: VpnConnection object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# MonitorInstances

Enables detailed monitoring for a running instance. Otherwise, basic monitoring is enabled. For more information, see Monitor your instances using CloudWatch in the *Amazon EC2 User Guide*.

To disable detailed monitoring, see UnmonitorInstances.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId.N**

The IDs of the instances.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**instancesSet**

The monitoring information.

Type: Array of InstanceMonitoring objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example enables detailed monitoring for the specified two instances.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=MonitorInstances
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS
```

#### Sample Response

```
<MonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
    <instancesSet>
      <item>
        <instanceId>i-1234567890abcdef0</instanceId>
        <monitoring>
          <state>pending</state>
        </monitoring>
    </item>
    <item>
      <instanceId>i-0598c7d356eba48d7</instanceId>
        <monitoring>
          <state>pending</state>
        </monitoring>
      </item>
    </instancesSet>
</MonitorInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# MoveAddressToVpc

> **Note**
>
> This action is deprecated.

Moves an Elastic IP address from the EC2-Classic platform to the EC2-VPC platform. The Elastic IP address must be allocated to your account for more than 24 hours, and it must not be associated with an instance. After the Elastic IP address is moved, it is no longer available for use in the EC2-Classic platform. You cannot move an Elastic IP address that was originally allocated for use in the EC2-VPC platform to the EC2-Classic platform.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PublicIp**

The Elastic IP address.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**allocationId**

The allocation ID for the Elastic IP address.

Type: String

**requestId**

The ID of the request.

Type: String

**status**

The status of the move of the IP address.

Type: String

Valid Values: `MoveInProgress | InVpc | InClassic`

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# MoveByoipCidrToIpam

Move a BYOIPv4 CIDR to IPAM from a public IPv4 pool.

If you already have a BYOIPv4 CIDR with AWS, you can move the CIDR to IPAM from a public IPv4 pool. You cannot move an IPv6 CIDR to IPAM. If you are bringing a new IP address to AWS for the first time, complete the steps in Tutorial: BYOIP address CIDRs to IPAM.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

The BYOIP CIDR.

Type: String

Required: Yes

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPoolId**

The IPAM pool ID.

Type: String

Required: Yes

**IpamPoolOwner**

The AWS account ID of the owner of the IPAM pool.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**byoipCidr**

The BYOIP CIDR.

Type: ByoipCidr object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# MoveCapacityReservationInstances

Move available capacity from a source Capacity Reservation to a destination Capacity Reservation. The source Capacity Reservation and the destination Capacity Reservation must be `active`, owned by your AWS account, and share the following:

- Instance type
- Platform
- Availability Zone
- Tenancy
- Placement group
- Capacity Reservation end time - `At specific time` or `Manually`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensure Idempotency.

Type: String

Required: No

**DestinationCapacityReservationId**

The ID of the Capacity Reservation that you want to move capacity into.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceCount**

The number of instances that you want to move from the source Capacity Reservation.

Type: Integer

Required: Yes

**SourceCapacityReservationId**

The ID of the Capacity Reservation from which you want to move capacity.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**destinationCapacityReservation**

Information about the destination Capacity Reservation.

Type: CapacityReservation object

**instanceCount**

The number of instances that were moved from the source Capacity Reservation to the destination Capacity Reservation.

Type: Integer

**requestId**

The ID of the request.

Type: String

**sourceCapacityReservation**

Information about the source Capacity Reservation.

Type: CapacityReservation object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ProvisionByoipCidr

Provisions an IPv4 or IPv6 address range for use with your AWS resources through bring your own IP addresses (BYOIP) and creates a corresponding address pool. After the address range is provisioned, it is ready to be advertised.

AWS verifies that you own the address range and are authorized to advertise it. You must ensure that the address range is registered to you and that you created an RPKI ROA to authorize Amazon ASNs 16509 and 14618 to advertise the address range. For more information, see Bring your own IP addresses (BYOIP) in the *Amazon EC2 User Guide*.

Provisioning an address range is an asynchronous operation, so the call returns immediately, but the address range is not ready to use until its status changes from `pending-provision` to `provisioned`. For more information, see Onboard your address range.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

The public IPv4 or IPv6 address range, in CIDR notation. The most specific IPv4 prefix that you can specify is /24. The most specific IPv6 address range that you can bring is /48 for CIDRs that are publicly advertisable and /56 for CIDRs that are not publicly advertisable. The address range cannot overlap with another address range that you've brought to this or another Region.

Type: String

Required: Yes

**CidrAuthorizationContext**

A signed document that proves that you are authorized to bring the specified IP address range to Amazon using BYOIP.

Type: CidrAuthorizationContext object

Required: No

**Description**

A description for the address range and the address pool.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MultiRegion**

Reserved.

Type: Boolean

Required: No

**NetworkBorderGroup**

If you have Local Zones enabled, you can choose a network border group for Local Zones when you provision and advertise a BYOIPv4 CIDR. Choose the network border group carefully as the EIP and the AWS resource it is associated with must reside in the same network border group.

You can provision BYOIP address ranges to and advertise them in the following Local Zone network border groups:

- us-east-1-dfw-2
- us-west-2-lax-1
- us-west-2-phx-2

> **Note**
>
> You cannot provision or advertise BYOIPv6 address ranges in Local Zones at this time.

Type: String

Required: No

**PoolTagSpecification.N**

The tags to apply to the address pool.

Type: Array of TagSpecification objects

Required: No

**PubliclyAdvertisable**

(IPv6 only) Indicate whether the address range will be publicly advertised to the internet.

Default: true

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**byoipCidr**

Information about the address range.

Type: ByoipCidr object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ProvisionIpamByoasn

Provisions your Autonomous System Number (ASN) for use in your AWS account. This action requires authorization context for Amazon to bring the ASN to an AWS account. For more information, see Tutorial: Bring your ASN to IPAM in the *Amazon VPC IPAM guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Asn**

A public 2-byte or 4-byte ASN.

Type: String

Required: Yes

**AsnAuthorizationContext**

An ASN authorization context.

Type: AsnAuthorizationContext object

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamId**

An IPAM ID.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**byoasn**

An ASN and BYOIP CIDR association.

Type: Byoasn object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ProvisionIpamPoolCidr

Provision a CIDR to an IPAM pool. You can use this action to provision new CIDRs to a top-level pool or to transfer a CIDR from a top-level pool to a pool within it.

For more information, see Provision CIDRs to pools in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

The CIDR you want to assign to the IPAM pool. Either "NetmaskLength" or "Cidr" is required. This value will be null if you specify "NetmaskLength" and will be filled in during the provisioning process.

Type: String

Required: No

**CidrAuthorizationContext**

A signed document that proves that you are authorized to bring a specified IP address range to Amazon using BYOIP. This option only applies to IPv4 and IPv6 pools in the public scope.

Type: IpamCidrAuthorizationContext object

Required: No

**ClientToken**

A unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Type: String

Required: No

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamExternalResourceVerificationTokenId**

Verification token ID. This option only applies to IPv4 and IPv6 pools in the public scope.

Type: String

Required: No

**IpamPoolId**

The ID of the IPAM pool to which you want to assign a CIDR.

Type: String

Required: Yes

**NetmaskLength**

The netmask length of the CIDR you'd like to provision to a pool. Can be used for provisioning Amazon-provided IPv6 CIDRs to top-level pools and for provisioning CIDRs to pools with source pools. Cannot be used to provision BYOIP CIDRs to top-level pools. Either "NetmaskLength" or "Cidr" is required.

Type: Integer

Required: No

**VerificationMethod**

The method for verifying control of a public IP address range. Defaults to `remarks-x509` if not specified. This option only applies to IPv4 and IPv6 pools in the public scope.

Type: String

Valid Values: `remarks-x509 | dns-token`

Required: No

## Response Elements

The following elements are returned by the service.

**ipamPoolCidr**

Information about the provisioned CIDR.

Type: IpamPoolCidr object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ProvisionPublicIpv4PoolCidr

Provision a CIDR to a public IPv4 pool.

For more information about IPAM, see What is IPAM? in the *Amazon VPC IPAM User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPoolId**

The ID of the IPAM pool you would like to use to allocate this CIDR.

Type: String

Required: Yes

**NetmaskLength**

The netmask length of the CIDR you would like to allocate to the public IPv4 pool. The least specific netmask length you can define is 24.

Type: Integer

Required: Yes

**NetworkBorderGroup**

The Availability Zone (AZ) or Local Zone (LZ) network border group that the resource that the IP address is assigned to is in. Defaults to an AZ network border group. For more information on available Local Zones, see Local Zone availability in the *Amazon EC2 User Guide*.

Type: String

Required: No

**PoolId**

The ID of the public IPv4 pool you would like to use for this CIDR.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**poolAddressRange**

Information about the address range of the public IPv4 pool.

Type: PublicIpv4PoolRange object

**poolId**

The ID of the pool that you want to provision the CIDR to.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# PurchaseCapacityBlock

Purchase the Capacity Block for use with your account. With Capacity Blocks you ensure GPU capacity is available for machine learning (ML) workloads. You must specify the ID of the Capacity Block offering you are purchasing.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityBlockOfferingId**

The ID of the Capacity Block offering.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstancePlatform**

The type of operating system for which to reserve capacity.

Type: String

Valid Values: `Linux/UNIX | Red Hat Enterprise Linux | SUSE Linux | Windows | Windows with SQL Server | Windows with SQL Server Enterprise | Windows with SQL Server Standard | Windows with SQL Server Web | Linux with SQL Server Standard | Linux with SQL Server Web | Linux with SQL Server Enterprise | RHEL with SQL Server Standard | RHEL with SQL Server Enterprise | RHEL with SQL Server Web | RHEL with HA | RHEL with HA and`

`SQL Server Standard | RHEL with HA and SQL Server Enterprise | Ubuntu Pro`

Required: Yes

**TagSpecification.N**

The tags to apply to the Capacity Block during launch.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**capacityBlockSet**

The Capacity Block.

Type: Array of CapacityBlock objects

**capacityReservation**

The Capacity Reservation.

Type: CapacityReservation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# PurchaseCapacityBlockExtension

Purchase the Capacity Block extension for use with your account. You must specify the ID of the Capacity Block extension offering you are purchasing.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityBlockExtensionOfferingId**

The ID of the Capacity Block extension offering to purchase.

Type: String

Required: Yes

**CapacityReservationId**

The ID of the Capacity reservation to be extended.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**capacityBlockExtensionSet**

The purchased Capacity Block extensions.

Type: Array of CapacityBlockExtension objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# PurchaseHostReservation

Purchase a reservation with configurations that match those of your Dedicated Host. You must have active Dedicated Hosts in your account before you purchase a reservation. This action results in the specified reservation being purchased and charged to your account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring Idempotency.

Type: String

Required: No

**CurrencyCode**

The currency in which the `totalUpfrontPrice`, `LimitPrice`, and `totalHourlyPrice` amounts are specified. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

**HostIdSet.N**

The IDs of the Dedicated Hosts with which the reservation will be associated.

Type: Array of strings

Required: Yes

**LimitPrice**

The specified limit is checked against the total upfront cost of the reservation (calculated as the offering's upfront cost multiplied by the host count). If the total upfront cost is greater than the specified price limit, the request fails. This is used to ensure that the purchase does not exceed

the expected upfront cost of the purchase. At this time, the only supported currency is USD. For example, to indicate a limit price of USD 100, specify 100.00.

Type: String

Required: No

**OfferingId**

The ID of the offering.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the Dedicated Host Reservation during purchase.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring Idempotency.

Type: String

**currencyCode**

The currency in which the `totalUpfrontPrice` and `totalHourlyPrice` amounts are specified. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

**purchase**

Describes the details of the purchase.

Type: Array of Purchase objects

**requestId**

The ID of the request.

Type: String

**totalHourlyPrice**

The total hourly price of the reservation calculated per hour.

Type: String

**totalUpfrontPrice**

The total amount charged to your account when you purchase the reservation.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example uses the same configuration information from GetHostReservationPurchasePreview to make the purchase and associate the offering with the specified Dedicated Host.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=PurchaseHostReservation
&OfferingId=hro-0eb3541dght849c2d
&HostIdSet=h-0fgr9ddb0ecd0a1cd
&AUTHPARAMS
```

#### Sample Response

```
<PurchaseHostReservationResult xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-84c3-b40d-gtyk-a9983EXAMPLE</requestId>
        <purchase>
```

```
            <item>
                <duration>31536000</duration>
                <upfrontPrice>7453.000</upfrontPrice>
                <paymentOption>PartialUpfront</paymentOption>
                <instanceFamily>m4</instanceFamily>
                <hourlyPrice>0.850</hourlyPrice>
                <hostIdSet>
                    <item>h-0fgr9ddb0ecd0a1cd</item>
                </hostIdSet>
            </item>
        </purchase>
        <totalHourlyPrice>0.850<totalHourlyPrice>
        <totalUpfrontPrice>7453.000<totalUpfrontPrice>
</PurchaseHostReservationResult>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# PurchaseReservedInstancesOffering

Purchases a Reserved Instance for use with your account. With Reserved Instances, you pay a lower hourly rate compared to On-Demand instance pricing.

Use DescribeReservedInstancesOfferings to get a list of Reserved Instance offerings that match your specifications. After you've purchased a Reserved Instance, you can check for your new Reserved Instance with DescribeReservedInstances.

To queue a purchase for a future date and time, specify a purchase time. If you do not specify a purchase time, the default is the current time.

For more information, see Reserved Instances and Sell in the Reserved Instance Marketplace in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceCount**

The number of Reserved Instances to purchase.

Type: Integer

Required: Yes

**LimitPrice**

Specified for Reserved Instance Marketplace offerings to limit the total order and ensure that the Reserved Instances are not purchased at unexpected prices.

Type: ReservedInstanceLimitPrice object

Required: No

**PurchaseTime**

The time at which to purchase the Reserved Instance, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

Required: No

**ReservedInstancesOfferingId**

The ID of the Reserved Instance offering to purchase.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**reservedInstancesId**

The IDs of the purchased Reserved Instances. If your purchase crosses into a discounted pricing tier, the final Reserved Instances IDs might change. For more information, see Crossing pricing tiers in the *Amazon EC2 User Guide*.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example uses a limit price to limit the total purchase order of Standard Reserved Instances from the Reserved Instance Marketplace.

### Sample Request

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&LimitPrice.Amount=200
&InstanceCount=2
&AUTHPARAMS
```

### Sample Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
```

## Example 2

This example illustrates a purchase of a Reserved Instances offering.

### Sample Request

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&InstanceCount=2
&AUTHPARAMS
```

### Sample Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
```

```
</PurchaseReservedInstancesOfferingResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# PurchaseScheduledInstances

> **Note**
>
> You can no longer purchase Scheduled Instances.

Purchases the Scheduled Instances with the specified schedule.

Scheduled Instances enable you to purchase Amazon EC2 compute capacity by the hour for a one-year term. Before you can purchase a Scheduled Instance, you must call DescribeScheduledInstanceAvailability to check for available schedules and obtain a purchase token. After you purchase a Scheduled Instance, you must call RunScheduledInstances during each scheduled time period.

After you purchase a Scheduled Instance, you can't cancel, modify, or resell your purchase.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that ensures the idempotency of the request. For more information, see Ensuring Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PurchaseRequest.N**

The purchase requests.

Type: Array of PurchaseRequest objects

Array Members: Minimum number of 1 item.

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**scheduledInstanceSet**

Information about the Scheduled Instances.

Type: Array of ScheduledInstance objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RebootInstances

Requests a reboot of the specified instances. This operation is asynchronous; it only queues a request to reboot the specified instances. The operation succeeds if the instances are valid and belong to you. Requests to reboot terminated instances are ignored.

If an instance does not cleanly shut down within a few minutes, Amazon EC2 performs a hard reboot.

For more information about troubleshooting, see Troubleshoot an unreachable instance in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId.N**

The instance IDs.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example reboots two instances.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RebootInstances
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS
```

#### Sample Response

```
<RebootInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RebootInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RegisterImage

Registers an AMI. When you're creating an instance-store backed AMI, registering the AMI is the final step in the creation process. For more information about creating AMIs, see Create an AMI from a snapshot and Create an instance-store backed AMI in the *Amazon EC2 User Guide*.

> **Note**
>
> For Amazon EBS-backed instances, CreateImage creates and registers the AMI in a single request, so you don't have to register the AMI yourself. We recommend that you always use CreateImage unless you have a specific reason to use RegisterImage.

If needed, you can deregister an AMI at any time. Any modifications you make to an AMI backed by an instance store volume invalidates its registration. If you make changes to an image, deregister the previous image and register the new image.

**Register a snapshot of a root device volume**

You can use `RegisterImage` to create an Amazon EBS-backed Linux AMI from a snapshot of a root device volume. You specify the snapshot using a block device mapping. You can't set the encryption state of the volume using the block device mapping. If the snapshot is encrypted, or encryption by default is enabled, the root volume of an instance launched from the AMI is encrypted.

For more information, see Create an AMI from a snapshot and Use encryption with EBS-backed AMIs in the *Amazon EC2 User Guide*.

**AWS Marketplace product codes**

If any snapshots have AWS Marketplace product codes, they are copied to the new AMI.

In most cases, AMIs for Windows, RedHat, SUSE, and SQL Server require correct licensing information to be present on the AMI. For more information, see Understand AMI billing information in the *Amazon EC2 User Guide*. When creating an AMI from a snapshot, the `RegisterImage` operation derives the correct billing information from the snapshot's metadata, but this requires the appropriate metadata to be present. To verify if the correct billing information was applied, check the `PlatformDetails` field on the new AMI. If the field is empty or doesn't match the expected operating system code (for example, Windows, RedHat, SUSE, or SQL), the

AMI creation was unsuccessful, and you should discard the AMI and instead create the AMI from an instance. For more information, see Create an AMI from an instance in the *Amazon EC2 User Guide*.

If you purchase a Reserved Instance to apply to an On-Demand Instance that was launched from an AMI with a billing product code, make sure that the Reserved Instance has the matching billing product code. If you purchase a Reserved Instance without the matching billing product code, the Reserved Instance is not applied to the On-Demand Instance. For information about how to obtain the platform details and billing information of an AMI, see Understand AMI billing information in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Architecture**

The architecture of the AMI.

Default: For Amazon EBS-backed AMIs, `i386`. For instance store-backed AMIs, the architecture specified in the manifest file.

Type: String

Valid Values: `i386 | x86_64 | arm64 | x86_64_mac | arm64_mac`

Required: No

**BillingProduct.N**

The billing product codes. Your account must be authorized to specify billing product codes.

If your account is not authorized to specify billing product codes, you can publish AMIs that include billable software and list them on the AWS Marketplace. You must first register as a seller on the AWS Marketplace. For more information, see Getting started as an AWS Marketplace seller and AMI-based products in AWS Marketplace in the *AWS Marketplace Seller Guide*.

Type: Array of strings

Required: No

**BlockDeviceMapping.N**

The block device mapping entries.

If you specify an Amazon EBS volume using the ID of an Amazon EBS snapshot, you can't specify the encryption state of the volume.

If you create an AMI on an Outpost, then all backing snapshots must be on the same Outpost or in the Region of that Outpost. AMIs on an Outpost that include local snapshots can be used to launch instances on the same Outpost only. For more information, Create AMIs from local snapshots in the *Amazon EBS User Guide*.

Type: Array of BlockDeviceMapping objects

Required: No

**BootMode**

The boot mode of the AMI. A value of `uefi-preferred` indicates that the AMI supports both UEFI and Legacy BIOS.

> **Note**
>
> The operating system contained in the AMI must be configured to support the specified boot mode.

For more information, see Instance launch behavior with Amazon EC2 boot modes in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `legacy-bios | uefi | uefi-preferred`

Required: No

**Description**

A description for your AMI.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EnaSupport**

Set to `true` to enable enhanced networking with ENA for the AMI and any instances that you launch from the AMI.

This option is supported only for HVM AMIs. Specifying this option with a PV AMI can make instances launched from the AMI unreachable.

Type: Boolean

Required: No

**ImageLocation**

The full path to your AMI manifest in Amazon S3 storage. The specified bucket must have the `aws-exec-read` canned access control list (ACL) to ensure that it can be accessed by Amazon EC2. For more information, see Canned ACL in the *Amazon S3 Service Developer Guide*.

Type: String

Required: No

**ImdsSupport**

Set to `v2.0` to indicate that IMDSv2 is specified in the AMI. Instances launched from this AMI will have `HttpTokens` automatically set to `required` so that, by default, the instance requires that IMDSv2 is used when requesting instance metadata. In addition, `HttpPutResponseHopLimit` is set to 2. For more information, see Configure the AMI in the *Amazon EC2 User Guide*.

> **Note**
>
> If you set the value to `v2.0`, make sure that your AMI software can support IMDSv2.

Type: String

Valid Values: `v2.0`

Required: No

**KernelId**

The ID of the kernel.

Type: String

Required: No

**Name**

A name for your AMI.

Constraints: 3-128 alphanumeric characters, parentheses (()), square brackets ([]), spaces ( ), periods (.), slashes (/), dashes (-), single quotes ('), at-signs (@), or underscores(_)

Type: String

Required: Yes

**RamdiskId**

The ID of the RAM disk.

Type: String

Required: No

**RootDeviceName**

The device name of the root device volume (for example, `/dev/sda1`).

Type: String

Required: No

**SriovNetSupport**

Set to `simple` to enable enhanced networking with the Intel 82599 Virtual Function interface for the AMI and any instances that you launch from the AMI.

There is no way to disable `sriovNetSupport` at this time.

This option is supported only for HVM AMIs. Specifying this option with a PV AMI can make instances launched from the AMI unreachable.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the AMI.

To tag the AMI, the value for `ResourceType` must be `image`. If you specify another value for `ResourceType`, the request fails.

To tag an AMI after it has been registered, see CreateTags.

Type: Array of TagSpecification objects

Required: No

**TpmSupport**

Set to `v2.0` to enable Trusted Platform Module (TPM) support. For more information, see NitroTPM in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `v2.0`

Required: No

**UefiData**

Base64 representation of the non-volatile UEFI variable store. To retrieve the UEFI data, use the GetInstanceUefiData command. You can inspect and modify the UEFI data by using the python-uefivars tool on GitHub. For more information, see UEFI Secure Boot for Amazon EC2 instances in the *Amazon EC2 User Guide*.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 64000.

Required: No

**VirtualizationType**

The type of virtualization (`hvm` | `paravirtual`).

Default: `paravirtual`

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**imageId**

The ID of the newly registered AMI.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example registers the AMI specified in the `my-new-image.manifest.xml` manifest file, located in the bucket called `myawsbucket`.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=RegisterImage
&ImageLocation=myawsbucket/my-new-image.manifest.xml
```

```
&AUTHPARAMS
```

### Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

## Example 2

This example specifies a snapshot for the root device of an Amazon EBS-backed AMI.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1234567890abcdef0
&Name=MyImage
&AUTHPARAMS
```

### Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

## Example 3

This example registers an AMI with a block device mapping for three Amazon EBS volumes. The first volume is the root device volume based on an Amazon EBS snapshot. The second volume is based on another snapshot. The third volume is an empty 100 GiB Amazon EBS volume.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
```

```
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1234567890abcdef0
&BlockDeviceMapping.2.DeviceName=/dev/sdb
&BlockDeviceMapping.2.Ebs.SnapshotId=snap-1234567890abcdef1
&BlockDeviceMapping.3.DeviceName=/dev/sdc
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&Name=MyImage
&AUTHPARAMS
```

### Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RegisterInstanceEventNotificationAttributes

Registers a set of tag keys to include in scheduled event notifications for your resources.

To remove tags, use DeregisterInstanceEventNotificationAttributes.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceTagAttribute**

Information about the tag keys to register.

Type: RegisterInstanceTagAttributeRequest object

Required: No

## Response Elements

The following elements are returned by the service.

**instanceTagAttribute**

The resulting set of tag keys.

Type: InstanceTagNotificationAttribute object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RegisterTransitGatewayMulticastGroupMembers

Registers members (network interfaces) with the transit gateway multicast group. A member is a network interface associated with a supported EC2 instance that receives multicast traffic. For more information, see Multicast on transit gateways in the *AWS Transit Gateways Guide*.

After you add the members, use SearchTransitGatewayMulticastGroups to verify that the members were added to the transit gateway multicast group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupIpAddress**

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

**NetworkInterfaceIds.N**

The group members' network interface IDs to register with the transit gateway multicast group.

Type: Array of strings

Required: Yes

**TransitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**registeredMulticastGroupMembers**

Information about the registered transit gateway multicast group members.

Type: TransitGatewayMulticastRegisteredGroupMembers object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example registers the network interface as a group member `eni-0e246d3269EXAMPLE` with the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterTransitGatewayMulticastGroupMembers
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&NetworkInterfaceIds=eni-0e246d3269EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<RegisterTransitGatewayMulticastGroupMembersResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
```

```
    <requestId>6f4167cd-0870-4858-8872-f1c34EXAMPLE</requestId>
    <registeredMulticastGroupMembers>
        <groupIpAddress>224.0.1.0</groupIpAddress>
        <registeredNetworkInterfaceIds>
            <item>eni-0e246d3269EXAMPLE</item>
        </registeredNetworkInterfaceIds>
        <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
    </registeredMulticastGroupMembers>
</RegisterTransitGatewayMulticastGroupMembersResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RegisterTransitGatewayMulticastGroupSources

Registers sources (network interfaces) with the specified transit gateway multicast group.

A multicast source is a network interface attached to a supported instance that sends multicast traffic. For more information about supported instances, see Multicast on transit gateways in the *AWS Transit Gateways Guide*.

After you add the source, use SearchTransitGatewayMulticastGroups to verify that the source was added to the multicast group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupIpAddress**

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

**NetworkInterfaceIds.N**

The group sources' network interface IDs to register with the transit gateway multicast group.

Type: Array of strings

Required: Yes

**TransitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**registeredMulticastGroupSources**

Information about the transit gateway multicast group sources.

Type: TransitGatewayMulticastRegisteredGroupSources object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example registers the network interface as a group source `eni-07f290fc3cEXAMPLE` with the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=RegisterTransitGatewayMulticastGroupSources
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&NetworkInterfaceIds=eni-07f290fc3cEXAMPLE
&AUTHPARAMS
```

**Sample Response**

```
<RegisterTransitGatewayMulticastGroupSourcesResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
```

```
    <requestId>b66c84ed-eb8a-4e6d-8d79-2347fEXAMPLE</requestId>
    <registeredMulticastGroupSources>
        <groupIpAddress>224.0.1.0</groupIpAddress>
        <registeredNetworkInterfaceIds>
            <item>eni-07f290fc3cEXAMPLE</item>
        </registeredNetworkInterfaceIds>
        <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
    </registeredMulticastGroupSources>
</RegisterTransitGatewayMulticastGroupSourcesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RejectCapacityReservationBillingOwnership

Rejects a request to assign billing of the available capacity of a shared Capacity Reservation to your account. For more information, see Billing assignment for shared Amazon EC2 Capacity Reservations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId**

The ID of the Capacity Reservation for which to reject the request.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RejectTransitGatewayClientVpnAttachment

Rejects a Transit Gateway attachment request for a Client VPN endpoint. The Transit Gateway owner can reject the attachment request to prevent the Client VPN endpoint from routing traffic through the Transit Gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the Transit Gateway attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayClientVpnAttachment**

Information about the Transit Gateway Client VPN attachment.

Type: TransitGatewayClientVpnAttachment object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example rejects a Transit Gateway Client VPN attachment.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RejectTransitGatewayClientVpnAttachment
&TransitGatewayAttachmentId=tgw-attach-0a34fe6b4fEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<RejectTransitGatewayClientVpnAttachmentResult xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>691de4ea-32ef-447b-b4f8-d8463EXAMPLE</requestId>
    <transitGatewayClientVpnAttachment>
        <transitGatewayAttachmentId>tgw-attach-0a34fe6b4fEXAMPLE</
transitGatewayAttachmentId>
        <transitGatewayId>tgw-0262a0e521EXAMPLE</transitGatewayId>
        <clientVpnEndpointId>cvpn-endpoint-00c5d11fc4EXAMPLE</clientVpnEndpointId>
        <state>rejected</state>
    </transitGatewayClientVpnAttachment>
</RejectTransitGatewayClientVpnAttachmentResult>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RejectTransitGatewayMulticastDomainAssociations

Rejects a request to associate cross-account subnets with a transit gateway multicast domain.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SubnetIds.N**

The IDs of the subnets to associate with the transit gateway multicast domain.

Type: Array of strings

Required: No

**TransitGatewayAttachmentId**

The ID of the transit gateway attachment.

Type: String

Required: No

**TransitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**associations**

Information about the multicast domain associations.

Type: TransitGatewayMulticastDomainAssociations object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RejectTransitGatewayPeeringAttachment

Rejects a transit gateway peering attachment request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the transit gateway peering attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayPeeringAttachment**

The transit gateway peering attachment.

Type: TransitGatewayPeeringAttachment object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example rejects the specified transit gateway peering attachment by specifying its attachment ID.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RejectTransitGatewayPeeringAttachment
&TransitGatewayAttachmentId=tgw-attach-12345678901abcd12
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RejectTransitGatewayVpcAttachment

Rejects a request to attach a VPC to a transit gateway.

The VPC attachment must be in the `pendingAcceptance` state. Use DescribeTransitGatewayVpcAttachments to view your pending VPC attachment requests. Use AcceptTransitGatewayVpcAttachment to accept a VPC attachment request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayVpcAttachment**

Information about the attachment.

Type: TransitGatewayVpcAttachment object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RejectVpcEndpointConnections

Rejects VPC endpoint connection requests to your VPC endpoint service.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ServiceId**

The ID of the service.

Type: String

Required: Yes

**VpcEndpointId.N**

The IDs of the VPC endpoints.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**unsuccessful**

Information about the endpoints that were not rejected, if applicable.

Type: Array of UnsuccessfulItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example rejects the request for VPC endpoint `vpce-0c1308d7312217cd7` to connect to your service `vpce-svc-03d5ebb7d9579a2b3`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RejectVpcEndpointConnections
&ServiceId=vpce-svc-03d5ebb7d9579a2b3
&VpcEndpointId.1=vpce-0c1308d7312217cd7
&AUTHPARAMS
```

#### Sample Response

```
<RejectVpcEndpointConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>986a2264-8a40-4da8-8f11-e8aaexample</requestId>
    <unsuccessful/>
</RejectVpcEndpointConnectionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4

- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RejectVpcPeeringConnection

Rejects a VPC peering connection request. The VPC peering connection must be in the `pending-acceptance` state. Use the DescribeVpcPeeringConnections request to view your outstanding VPC peering connection requests. To delete an active VPC peering connection, or to delete a VPC peering connection request that you initiated, use DeleteVpcPeeringConnection.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpcPeeringConnectionId**

The ID of the VPC peering connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example rejects the specified VPC peering connection request.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RejectVpcPeeringConnection
&vpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<RejectVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
   <return>true</return>
</RejectVpcPeeringConnectionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReleaseAddress

Releases the specified Elastic IP address.

[Default VPC] Releasing an Elastic IP address automatically disassociates it from any instance that it's associated with. Alternatively, you can disassociate an Elastic IP address without releasing it.

[Nondefault VPC] You must disassociate the Elastic IP address before you can release it. Otherwise, Amazon EC2 returns an error (`InvalidIPAddress.InUse`).

After releasing an Elastic IP address, it is released to the IP address pool. Be sure to update your DNS records and any servers or devices that communicate with the address. If you attempt to release an Elastic IP address that you already released, you'll get an `AuthFailure` error if the address is already allocated to another AWS account.

After you release an Elastic IP address, you might be able to recover it. For more information, see Release an Elastic IP address.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationId**

The allocation ID. This parameter is required.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkBorderGroup**

The set of Availability Zones, Local Zones, or Wavelength Zones from which AWS advertises IP addresses.

If you provide an incorrect network border group, you receive an `InvalidAddress.NotFound` error.

Type: String

Required: No

**PublicIp**

Deprecated.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example releases the specified Elastic IP address.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseAddress
&AllocationId=eipalloc-5723d13e
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReleaseHosts

When you no longer want to use an On-Demand Dedicated Host it can be released. On-Demand billing is stopped and the host goes into `released` state. The host ID of Dedicated Hosts that have been released can no longer be specified in another request, for example, to modify the host. You must stop or terminate all instances on a host before it can be released.

When Dedicated Hosts are released, it may take some time for them to stop counting toward your limit and you may receive capacity errors when trying to allocate new Dedicated Hosts. Wait a few minutes and then try again.

Released hosts still appear in a DescribeHosts response.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**HostId.N**

The IDs of the Dedicated Hosts to release.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**successful**

The IDs of the Dedicated Hosts that were successfully released.

Type: Array of strings

**unsuccessful**

The IDs of the Dedicated Hosts that could not be released, including an error message.

Type: Array of UnsuccessfulItem objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This releases a Dedicated Host successfully.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseHosts
&HostId=h-00548908djdsgfs
&AUTHPARAMS
```

#### Sample Response

```
<ReleaseHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <unsuccessful/>
    <successful>
        <item>h-00548908djdsgfs</item>
    </successful>
</ReleaseHostsResponse>
```

### Example

This request is unsuccessful.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseHosts
&HostId=h-00548908djdsgfs
```

```
&AUTHPARAMS
```

### Sample Response

```
<ReleaseHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <unsuccessful>
        <item>
       <error>
            <message>Dedicated host 'h-00548908djdsgfs' cannot be released as it is
 occupied</message>
            <code>Client.InvalidHost.Occupied</code<
       </error>
       <resourceId>h-00548908djdsgfs</resourceId>
        </item>
    </unsuccessful>
    <successful/>
</ReleaseHostsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReleaseIpamPoolAllocation

Release an allocation within an IPAM pool. The Region you use should be the IPAM pool locale. The locale is the AWS Region where this IPAM pool is available for allocations. You can only use this action to release manual allocations. To remove an allocation for a resource without deleting the resource, set its monitored state to false using ModifyIpamResourceCidr. For more information, see Release an allocation in the *Amazon VPC IPAM User Guide*.

> **Note**
>
> All EC2 API actions follow an eventual consistency model.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

The CIDR of the allocation you want to release.

Type: String

Required: Yes

**DryRun**

A check for whether you have the required permissions for the action without actually making the request and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpamPoolAllocationId**

The ID of the allocation.

Type: String

Required: Yes

**IpamPoolId**

The ID of the IPAM pool which contains the allocation you want to release.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**success**

Indicates if the release was successful.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2

- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReplaceIamInstanceProfileAssociation

Replaces an IAM instance profile for the specified running instance. You can use this action to change the IAM instance profile that's associated with an instance without having to disassociate the existing IAM instance profile first.

Use DescribeIamInstanceProfileAssociations to get the association ID.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId**

The ID of the existing IAM instance profile association.

Type: String

Required: Yes

**IamInstanceProfile**

The IAM instance profile.

Type: IamInstanceProfileSpecification object

Required: Yes

## Response Elements

The following elements are returned by the service.

**iamInstanceProfileAssociation**

Information about the IAM instance profile association.

Type: IamInstanceProfileAssociation object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example replaces the IAM instance profile represented by the association `iip-assoc-060bae234aac2e7fa` with the IAM instance profile named `AdminProfile`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceIamInstanceProfileAssociation
&AssociationId=iip-assoc-060bae234aac2e7fa
&IamInstanceProfile.Name=AdminProfile
&AUTHPARAMS
```

#### Sample Response

```
<ReplaceIamInstanceProfileAssociationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>ba40aa4c-d788-4f24-8a34-example</requestId>
    <iamInstanceProfileAssociation>
        <associationId>iip-assoc-08049da59357d598c</associationId>
        <iamInstanceProfile>
            <arn>arn:aws:iam::123456789012:instance-profile/AdminRole</arn>
            <id>AIPAI5IVIHMFFYY2DKV5Y</id>
        </iamInstanceProfile>
        <instanceId>i-1234567890abcdef0</instanceId>
        <state>associating</state>
    </iamInstanceProfileAssociation>
</ReplaceIamInstanceProfileAssociationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReplaceImageCriteriaInAllowedImagesSettings

Sets or replaces the criteria for Allowed AMIs.

> **Note**
>
> The Allowed AMIs feature does not restrict the AMIs owned by your account. Regardless of the criteria you set, the AMIs created by your account will always be discoverable and usable by users in your account.

For more information, see Control the discovery and use of AMIs in Amazon EC2 with Allowed AMIs in *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageCriterion.N**

The list of criteria that are evaluated to determine whether AMIs are discoverable and usable in the account in the specified AWS Region.

Type: Array of ImageCriterionRequest objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReplaceNetworkAclAssociation

Changes which network ACL a subnet is associated with. By default when you create a subnet, it's automatically associated with the default network ACL. For more information, see Network ACLs in the *Amazon VPC User Guide*.

This is an idempotent operation.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId**

The ID of the current association between the original network ACL and the subnet.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkAclId**

The ID of the new network ACL to associate with the subnet.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**newAssociationId**

The ID of the new association.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example starts with a network ACL associated with a subnet, and a corresponding association ID `aclassoc-e5b95c8c`. You want to associate a different network ACL (`acl-5fb85d36`) with the subnet. The result is a new association ID representing the new association.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=ReplaceNetworkAclAssociation
&AssociationId=aclassoc-e5b95c8c
&NetworkAclId=acl-5fb85d36
&AUTHPARAMS
```

**Sample Response**

```
<ReplaceNetworkAclAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <newAssociationId>aclassoc-17b85d7e</newAssociationId>
</ReplaceNetworkAclAssociationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReplaceNetworkAclEntry

Replaces an entry (rule) in a network ACL. For more information, see Network ACLs in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CidrBlock**

The IPv4 network range to allow or deny, in CIDR notation (for example `172.16.0.0/24`).

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Egress**

Indicates whether to replace the egress rule.

Default: If no value is specified, we replace the ingress rule.

Type: Boolean

Required: Yes

**Icmp**

ICMP protocol: The ICMP or ICMPv6 type and code. Required if specifying protocol 1 (ICMP) or protocol 58 (ICMPv6) with an IPv6 CIDR block.

Type: IcmpTypeCode object

Required: No

**Ipv6CidrBlock**

The IPv6 network range to allow or deny, in CIDR notation (for example `2001:bd8:1234:1a00::/64`).

Type: String

Required: No

**NetworkAclId**

The ID of the ACL.

Type: String

Required: Yes

**PortRange**

TCP or UDP protocols: The range of ports the rule applies to. Required if specifying protocol 6 (TCP) or 17 (UDP).

Type: PortRange object

Required: No

**Protocol**

The protocol number. A value of "-1" means all protocols. If you specify "-1" or a protocol number other than "6" (TCP), "17" (UDP), or "1" (ICMP), traffic on all ports is allowed, regardless of any ports or ICMP types or codes that you specify. If you specify protocol "58" (ICMPv6) and specify an IPv4 CIDR block, traffic for all ICMP types and codes allowed, regardless of any that you specify. If you specify protocol "58" (ICMPv6) and specify an IPv6 CIDR block, you must specify an ICMP type and code.

Type: String

Required: Yes

**RuleAction**

Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: `allow | deny`

Required: Yes

**RuleNumber**

The rule number of the entry to replace.

Type: Integer

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example replaces the egress entry numbered `110` in the specified network ACL. The new rule denies egress traffic destined for any IPv4 address (`0.0.0.0/0`) on TCP port 139.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceNetworkAclEntry
```

```
&NetworkAclId=acl-2cb85d45
&RuleNumber=110
&Protocol="6"
&RuleAction=deny
&Egress=true
&CidrBlock=0.0.0.0/0
&PortRange.From=139
&PortRange.To=139
&AUTHPARAMS
```

### Sample Response

```
<ReplaceNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</ReplaceNetworkAclEntryResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReplaceRoute

Replaces an existing route within a route table in a VPC.

You must specify either a destination CIDR block or a prefix list ID. You must also specify exactly one of the resources from the parameter list, or reset the local route to its default target.

For more information, see Route tables in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CarrierGatewayId**

[IPv4 traffic only] The ID of a carrier gateway.

Type: String

Required: No

**CoreNetworkArn**

The Amazon Resource Name (ARN) of the core network.

Type: String

Required: No

**DestinationCidrBlock**

The IPv4 CIDR address block used for the destination match. The value that you provide must match the CIDR of an existing route in the table.

Type: String

Required: No

**DestinationIpv6CidrBlock**

The IPv6 CIDR address block used for the destination match. The value that you provide must match the CIDR of an existing route in the table.

Type: String

Required: No

**DestinationPrefixListId**

The ID of the prefix list for the route.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EgressOnlyInternetGatewayId**

[IPv6 traffic only] The ID of an egress-only internet gateway.

Type: String

Required: No

**GatewayId**

The ID of an internet gateway or virtual private gateway.

Type: String

Required: No

**InstanceId**

The ID of a NAT instance in your VPC.

Type: String

Required: No

**LocalGatewayId**

The ID of the local gateway.

Type: String

Required: No

**LocalTarget**

Specifies whether to reset the local route to its default target (`local`).

Type: Boolean

Required: No

**NatGatewayId**

[IPv4 traffic only] The ID of a NAT gateway.

Type: String

Required: No

**NetworkInterfaceId**

The ID of a network interface.

Type: String

Required: No

**OdbNetworkArn**

The Amazon Resource Name (ARN) of the ODB network.

Type: String

Required: No

**RouteTableId**

The ID of the route table.

Type: String

Required: Yes

**TransitGatewayId**

The ID of a transit gateway.

Type: String

Required: No

**VpcEndpointId**

The ID of a VPC endpoint. Supported for Gateway Load Balancer endpoints only.

Type: String

Required: No

**VpcPeeringConnectionId**

The ID of a VPC peering connection.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example replaces a route in the specified route table. The new route matches the IPv4 CIDR `10.0.0.0/8` and sends the traffic to the virtual private gateway with the ID `vgw-123456abcde123456`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-11223344556677889
&DestinationCidrBlock=10.0.0.0/8
&GatewayId=vgw-123456abcde123456
&AUTHPARAMS
```

### Sample Response

```
<ReplaceRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</ReplaceRouteResponse>
```

## Example 2

This examples resets the target for the default local route.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-11223344556677889
&DestinationCidrBlock=10.0.0.0/16
&LocalTarget=true
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReplaceRouteTableAssociation

Changes the route table associated with a given subnet, internet gateway, or virtual private gateway in a VPC. After the operation completes, the subnet or gateway uses the routes in the new route table. For more information about route tables, see Route tables in the *Amazon VPC User Guide*.

You can also use this operation to change which table is the main route table in the VPC. Specify the main route table's association ID and the route table ID of the new main route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AssociationId**

The association ID.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RouteTableId**

The ID of the new route table to associate with the subnet.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**associationState**

The state of the association.

Type: RouteTableAssociationState object

**newAssociationId**

The ID of the new association.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example starts with a route table associated with a subnet, and a corresponding association ID `rtbassoc-04ca27a6914a0b4f`. You want to associate a different route table (table `rtb-1a2b3c4d1a2b3c4d1`) to the subnet. The result is a new association ID representing the new association.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceRouteTableAssociation
&AssociationId=rtbassoc-04ca27a6914a0b4f
&RouteTableId=rtb-1a2b3c4d1a2b3c4d1
&AUTHPARAMS
```

### Sample Response

```
<ReplaceRouteTableAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <newAssociationId>rtbassoc-11223344556677889</newAssociationId>
</ReplaceRouteTableAssociationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReplaceTransitGatewayRoute

Replaces the specified route in the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Blackhole**

Indicates whether traffic matching this route is to be dropped.

Type: Boolean

Required: No

**DestinationCidrBlock**

The CIDR range used for the destination match. Routing decisions are based on the most specific match.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

**TransitGatewayRouteTableId**

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**route**

Information about the modified route.

Type: TransitGatewayRoute object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3

- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReplaceVpnTunnel

Trigger replacement of specified VPN tunnel.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ApplyPendingMaintenance**

Trigger pending tunnel endpoint maintenance.

Type: Boolean

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VpnConnectionId**

The ID of the Site-to-Site VPN connection.

Type: String

Required: Yes

**VpnTunnelOutsideIpAddress**

The external IP address of the VPN tunnel.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Confirmation of replace tunnel operation.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ReportInstanceStatus

Submits feedback about the status of an instance. The instance must be in the `running` state. If your experience with the instance differs from the instance status returned by DescribeInstanceStatus, use ReportInstanceStatus to report your experience with the instance. Amazon EC2 collects this information to improve the accuracy of status checks.

Use of this action does not change the value returned by DescribeInstanceStatus.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Description**

*This parameter has been deprecated.*

Descriptive text about the health state of your instance.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EndTime**

The time at which the reported instance health state ended.

Type: Timestamp

Required: No

**InstanceId.N**

The instances.

Type: Array of strings

Required: Yes

**ReasonCode.N**

The reason codes that describe the health state of your instance.

- `instance-stuck-in-state`: My instance is stuck in a state.
- `unresponsive`: My instance is unresponsive.
- `not-accepting-credentials`: My instance is not accepting my credentials.
- `password-not-available`: A password is not available for my instance.
- `performance-network`: My instance is experiencing performance problems that I believe are network related.
- `performance-instance-store`: My instance is experiencing performance problems that I believe are related to the instance stores.
- `performance-ebs-volume`: My instance is experiencing performance problems that I believe are related to an EBS volume.
- `performance-other`: My instance is experiencing performance problems.
- `other`: [explain using the description parameter]

Type: Array of strings

Valid Values: `instance-stuck-in-state | unresponsive | not-accepting-credentials | password-not-available | performance-network | performance-instance-store | performance-ebs-volume | performance-other | other`

Required: Yes

**StartTime**

The time at which the reported instance health state began.

Type: Timestamp

Required: No

**Status**

The status of all instances listed.

Type: String

Valid Values: `ok | impaired`

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example reports instance health state for two instances.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Status=impaired
&InstanceId.1=i-1234567890abcdef0
```

```
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS
```

### Example 2

This example reports instance health state for two instances with reason codes.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Description=Description+of+my+issue.
&Status=impaired
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&ReasonCode.1=instance-performance-network
&ReasonCode.2=instance-performance-disk
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RequestSpotFleet

Creates a Spot Fleet request.

The Spot Fleet request specifies the total target capacity and the On-Demand target capacity. Amazon EC2 calculates the difference between the total capacity and On-Demand capacity, and launches the difference as Spot capacity.

You can submit a single request that includes multiple launch specifications that vary by instance type, AMI, Availability Zone, or subnet.

By default, the Spot Fleet requests Spot Instances in the Spot Instance pool where the price per unit is the lowest. Each launch specification can include its own instance weighting that reflects the value of the instance type to your application workload.

Alternatively, you can specify that the Spot Fleet distribute the target capacity across the Spot pools included in its launch specifications. By ensuring that the Spot Instances in your Spot Fleet are in different Spot pools, you can improve the availability of your fleet.

You can specify tags for the Spot Fleet request and instances launched by the fleet. You cannot tag other resource types in a Spot Fleet request because only the `spot-fleet-request` and `instance` resource types are supported.

For more information, see Spot Fleet requests in the *Amazon EC2 User Guide*.

> **Important**
>
> We strongly discourage using the RequestSpotFleet API because it is a legacy API with no planned investment. For options for requesting Spot Instances, see Which is the best Spot request method to use? in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SpotFleetRequestConfig**

The configuration for the Spot Fleet request.

Type: SpotFleetRequestConfigData object

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**spotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example creates a Spot Fleet request with two launch specifications.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RequestSpotFleet
&SpotFleetRequestConfig.IamFleetRole=arn:aws:iam::123456789011:role/spot-fleet-role
&SpotFleetRequestConfig.TargetCapacity=5
&SpotFleetRequestConfig.LaunchSpecifications.1.ImageId=ami-1ecae776
&SpotFleetRequestConfig.LaunchSpecifications.1.InstanceType=m4.large
&SpotFleetRequestConfig.LaunchSpecifications.1.SubnetId=subnet-1a2b3c4d
&SpotFleetRequestConfig.LaunchSpecifications.2.ImageId=ami-1ecae776
&SpotFleetRequestConfig.LaunchSpecifications.2.InstanceType=m3.medium
&SpotFleetRequestConfig.LaunchSpecifications.2.SubnetId=subnet-1a2b3c4d
&AUTHPARAMS
```

### Sample Response

```
<RequestSpotFleetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>60262cc5-2bd4-4c8d-98ed-example</requestId>
    <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRequestId>
</RequestSpotFleetResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RequestSpotInstances

Creates a Spot Instance request.

For more information, see Work with Spot Instance in the *Amazon EC2 User Guide*.

> **Important**
>
> We strongly discourage using the RequestSpotInstances API because it is a legacy API with no planned investment. For options for requesting Spot Instances, see Which is the best Spot request method to use? in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AvailabilityZoneGroup**

The user-specified name for a logical grouping of requests.

When you specify an Availability Zone group in a Spot Instance request, all Spot Instances in the request are launched in the same Availability Zone. Instance proximity is maintained with this parameter, but the choice of Availability Zone is not. The group applies only to requests for Spot Instances of the same instance type. Any additional Spot Instance requests that are specified with the same Availability Zone group name are launched in that same Availability Zone, as long as at least one instance from the group is still active.

If there is no active instance running in the Availability Zone group that you specify for a new Spot Instance request (all instances are terminated, the request is expired, or the maximum price you specified falls below current Spot price), then Amazon EC2 launches the instance in any Availability Zone where the constraint can be met. Consequently, the subsequent set of Spot Instances could be placed in a different zone from the original request, even if you specified the same Availability Zone group.

Default: Instances are launched in any available Availability Zone.

Type: String

Required: No

**BlockDurationMinutes**

Deprecated.

Type: Integer

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency in Amazon EC2 API requests in the *Amazon EC2 User Guide*.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceCount**

The maximum number of Spot Instances to launch.

Default: 1

Type: Integer

Required: No

**InstanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted. The default is `terminate`.

Type: String

Valid Values: `hibernate | stop | terminate`

Required: No

**LaunchGroup**

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Default: Instances are launched and terminated individually

Type: String

Required: No

**LaunchSpecification**

The launch specification.

Type: RequestSpotLaunchSpecification object

Required: No

**SpotPrice**

The maximum price per unit hour that you are willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your instances will be interrupted more frequently than if you do not specify this parameter.

Type: String

Required: No

**TagSpecification.N**

The key-value pair for tagging the Spot Instance request on creation. The value for `ResourceType` must be `spot-instances-request`, otherwise the Spot Instance request fails. To tag the Spot Instance request after it has been created, see CreateTags.

Type: Array of TagSpecification objects

Required: No

**Type**

The Spot Instance request type.

Default: `one-time`

Type: String

Valid Values: `one-time | persistent`

Required: No

**ValidFrom**

The start date of the request. If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled. If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled.

The specified start date and time cannot be equal to the current date and time. You must specify a start date and time that occurs after the current date and time.

Type: Timestamp

Required: No

**ValidUntil**

The end date of the request, in UTC format (*YYYY*-*MM*-*DD*T*HH*:*MM*:*SS*Z).

- For a persistent request, the request remains active until the `ValidUntil` date and time is reached. Otherwise, the request remains active until you cancel it.
- For a one-time request, the request remains active until all instances launch, the request is canceled, or the `ValidUntil` date and time is reached. By default, the request is valid for 7 days from the date the request was created.

Type: Timestamp

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**spotInstanceRequestSet**

The Spot Instance requests.

Type: Array of SpotInstanceRequest objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example creates a one-time Spot Instance request for two instances. It does not include an Availability Zone or subnet, so Amazon EC2 selects an Availability Zone for you and launches the instances in the default subnet of the selected Availability Zone.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&InstanceCount=2
&Type=one-time
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=my-key-pair
&LaunchSpecification.SecurityGroupId.1=sg-1a2b3c4d
&LaunchSpecification.InstanceType=m3.medium
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

### Example 2

The following example includes an Availability Zone. Amazon EC2 launches the instances in the default subnet of the specified Availability Zone.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&InstanceCount=2
&Type=one-time
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=my-key-pair
&LaunchSpecification.SecurityGroupId.1=sg-1a2b3c4d
&LaunchSpecification.InstanceType=m3.medium
&LaunchSpecification.Placement.AvailabilityZone=us-west-2a
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

## Example 3

The following example includes a subnet. Amazon EC2 launches the instances in the specified subnet.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&InstanceCount=2
&Type=one-time
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=my-key-pair
&LaunchSpecification.SecurityGroupId.1=sg-1a2b3c4d
&LaunchSpecification.InstanceType=m3.medium
&LaunchSpecification.SubnetId=subnet-1a2b3c4d
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ResetAddressAttribute

Resets the attribute of the specified IP address. For requirements, see Using reverse DNS for email applications.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AllocationId**

[EC2-VPC] The allocation ID.

Type: String

Required: Yes

**Attribute**

The attribute of the IP address.

Type: String

Valid Values: `domain-name`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**address**

Information about the IP address.

Type: AddressAttribute object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ResetEbsDefaultKmsKeyId

Resets the default AWS KMS key for EBS encryption for your account in this Region to the AWS managed KMS key for EBS.

After resetting the default KMS key to the AWS managed KMS key, you can continue to encrypt by a customer managed KMS key by specifying it when you create the volume. For more information, see Amazon EBS encryption in the *Amazon EBS User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**kmsKeyId**

The Amazon Resource Name (ARN) of the default KMS key for EBS encryption by default.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ResetFpgaImageAttribute

Resets the specified attribute of the specified Amazon FPGA Image (AFI) to its default value. You can only reset the load permission attribute.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The attribute.

Type: String

Valid Values: `loadPermission`

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FpgaImageId**

The ID of the AFI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example resets the load permissions for the specified AFI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ResetFpgaImageAttribute
&FpgaImageId=afi-0d123e21abcc85abc
&Attribute=loadPermission
&AUTHPARAMS
```

#### Sample Response

```
<ResetFpgaImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>ccb58a32-30ee-4f9b-831c-639example</requestId>
    <return>true</return>
</ResetFpgaImageAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ResetImageAttribute

Resets an attribute of an AMI to its default value.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The attribute to reset (currently you can only reset the launch permission attribute).

Type: String

Valid Values: `launchPermission`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example resets the `launchPermission` attribute for the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ResetImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
```

#### Sample Response

```
<ResetImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetImageAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++

- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ResetInstanceAttribute

Resets an attribute of an instance to its default value. To reset the `kernel` or `ramdisk`, the instance must be in a stopped state. To reset the `sourceDestCheck`, the instance can be either running or stopped.

The `sourceDestCheck` attribute controls whether source/destination checking is enabled. The default value is `true`, which means checking is enabled. This value must be `false` for a NAT instance to perform NAT. For more information, see NAT instances in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The attribute to reset.

Type: String

Valid Values: `kernel | ramdisk | sourceDestCheck`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example resets the `sourceDestCheck` attribute.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ResetInstanceAttribute
&InstanceId=i-1234567890abcdef0
&Attribute=sourceDestCheck
&AUTHPARAMS
```

#### Sample Response

```
<ResetInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetInstanceAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ResetNetworkInterfaceAttribute

Resets a network interface attribute. You can specify only one attribute at a time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

**SourceDestCheck**

The source/destination checking attribute. Resets the value to `true`.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# ResetSnapshotAttribute

Resets permission settings for the specified snapshot.

For more information about modifying snapshot permissions, see Share a snapshot in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Attribute**

The attribute to reset. Currently, only the attribute for permission to create volumes can be reset.

Type: String

Valid Values: `productCodes | createVolumePermission`

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SnapshotId**

The ID of the snapshot.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example resets the permissions for `snap-1234567890abcdef0`, making it a private snapshot that can only be used by the account that created it.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ResetSnapshotAttribute
&SnapshotId=snap-1234567890abcdef0
&Attribute=createVolumePermission
&AUTHPARAMS
```

#### Sample Response

```
<ResetSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetSnapshotAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RestoreAddressToClassic

> **Note**
>
> This action is deprecated.

Restores an Elastic IP address that was previously moved to the EC2-VPC platform back to the EC2-Classic platform. You cannot move an Elastic IP address that was originally allocated for use in EC2-VPC. The Elastic IP address must not be associated with an instance or network interface.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PublicIp**

The Elastic IP address.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**publicIp**

The Elastic IP address.

Type: String

**requestId**

The ID of the request.

Type: String

**status**

The move status for the IP address.

Type: String

Valid Values: `MoveInProgress | InVpc | InClassic`

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RestoreImageFromRecycleBin

Restores an AMI from the Recycle Bin. For more information, see Recover deleted Amazon EBS snapshots and EBS-back AMIs with Recycle Bin in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ImageId**

The ID of the AMI to restore.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RestoreManagedPrefixListVersion

Restores the entries from a previous version of a managed prefix list to a new version of the prefix list.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CurrentVersion**

The current version number for the prefix list.

Type: Long

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PrefixListId**

The ID of the prefix list.

Type: String

Required: Yes

**PreviousVersion**

The version to restore.

Type: Long

Required: Yes

## Response Elements

The following elements are returned by the service.

**prefixList**

Information about the prefix list.

Type: ManagedPrefixList object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example restores the entries from version 1 of the specified prefix list.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RestoreManagedPrefixListVersion
&PrefixListId=pl-0123123123123aabb
&CurrentVersion=3
&PreviousVersion=1
&AUTHPARAMS
```

#### Sample Response

```
<RestoreManagedPrefixListVersionResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>aeb3faff-8938-41a0-9747-example</requestId>
    <prefixList>
        <addressFamily>IPv4</addressFamily>
        <maxEntries>10</maxEntries>
```

```
        <ownerId>123456789012</ownerId>
        <prefixListArn>arn:aws:ec2:us-east-1:123456789012:prefix-list/
pl-0123123123123aabb</prefixListArn>
        <prefixListId>pl-0123123123123aabb</prefixListId>
        <prefixListName>tgw-attachments</prefixListName>
        <state>restore-in-progress</state>
        <version>3</version>
    </prefixList>
</RestoreManagedPrefixListVersionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RestoreSnapshotFromRecycleBin

Restores a snapshot from the Recycle Bin. For more information, see Restore snapshots from the Recycle Bin in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SnapshotId**

The ID of the snapshot to restore.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**description**

The description for the snapshot.

Type: String

**encrypted**

Indicates whether the snapshot is encrypted.

Type: Boolean

**outpostArn**

The ARN of the Outpost on which the snapshot is stored. For more information, see Amazon EBS local snapshots on Outposts in the *Amazon EBS User Guide*.

Type: String

**ownerId**

The ID of the AWS account that owns the EBS snapshot.

Type: String

**progress**

The progress of the snapshot, as a percentage.

Type: String

**requestId**

The ID of the request.

Type: String

**snapshotId**

The ID of the snapshot.

Type: String

**sseType**

Reserved for future use.

Type: String

Valid Values: `sse-ebs | sse-kms | none`

**startTime**

The time stamp when the snapshot was initiated.

Type: Timestamp

**status**

The state of the snapshot.

Type: String

Valid Values: `pending | completed | error | recoverable | recovering`

**volumeId**

The ID of the volume that was used to create the snapshot.

Type: String

**volumeSize**

The size of the volume, in GiB.

Type: Integer

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RestoreSnapshotTier

Restores an archived Amazon EBS snapshot for use temporarily or permanently, or modifies the restore period or restore type for a snapshot that was previously temporarily restored.

For more information see Restore an archived snapshot and modify the restore period or restore type for a temporarily restored snapshot in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**PermanentRestore**

Indicates whether to permanently restore an archived snapshot. To permanently restore an archived snapshot, specify `true` and omit the **RestoreSnapshotTierRequest $TemporaryRestoreDays** parameter.

Type: Boolean

Required: No

**SnapshotId**

The ID of the snapshot to restore.

Type: String

Required: Yes

**TemporaryRestoreDays**

Specifies the number of days for which to temporarily restore an archived snapshot. Required for temporary restores only. The snapshot will be automatically re-archived after this period.

To temporarily restore an archived snapshot, specify the number of days and omit the **PermanentRestore** parameter or set it to `false`.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**isPermanentRestore**

Indicates whether the snapshot is permanently restored. `true` indicates a permanent restore. `false` indicates a temporary restore.

Type: Boolean

**requestId**

The ID of the request.

Type: String

**restoreDuration**

For temporary restores only. The number of days for which the archived snapshot is temporarily restored.

Type: Integer

**restoreStartTime**

The date and time when the snapshot restore process started.

Type: Timestamp

**snapshotId**

The ID of the snapshot.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RestoreVolumeFromRecycleBin

Restores a volume from the Recycle Bin. For more information, see Restore volumes from the Recycle Bin in the *Amazon EBS User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**VolumeId**

The ID of the volume to restore.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RevokeClientVpnIngress

Removes an ingress authorization rule from a Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AccessGroupId**

The ID of the Active Directory group for which to revoke access.

Type: String

Required: No

**ClientVpnEndpointId**

The ID of the Client VPN endpoint with which the authorization rule is associated.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**RevokeAllGroups**

Indicates whether access should be revoked for all groups for a single `TargetNetworkCidr` that earlier authorized ingress for all groups using `AuthorizeAllGroups`. This does not impact other authorization rules that allowed ingress to the same `TargetNetworkCidr` with a specific `AccessGroupId`.

Type: Boolean

Required: No

**TargetNetworkCidr**

The IPv4 address range, in CIDR notation, of the network for which access is being removed.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**status**

The current state of the authorization rule.

Type: ClientVpnAuthorizationRuleStatus object

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example removes an authorization rule from a Client VPN endpoint.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=RevokeClientVpnIngress
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&TargetNetworkCidr=10.0.0.0/16
&RevokeAllGroups=true
```

```
&AUTHPARAMS
```

### Sample Response

```
<RevokeClientVpnIngressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>691de4ea-32ef-447b-b4f8-d8463XAMPLE</requestId>
    <status>
        <code>revoking</code>
    </status>
</RevokeClientVpnIngressResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RevokeSecurityGroupEgress

Removes the specified outbound (egress) rules from the specified security group.

You can specify rules using either rule IDs or security group rule properties. If you use rule properties, the values that you specify (for example, ports) must match the existing rule's values exactly. Each rule has a protocol, from and to ports, and destination (CIDR range, security group, or prefix list). For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code. If the security group rule has a description, you do not need to specify the description to revoke the rule.

For a default VPC, if the values you specify do not match the existing rule's values, no error is returned, and the output describes the security group rules that were not revoked.

AWS recommends that you describe the security group to verify that the rules were removed.

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CidrIp**

Not supported. Use a set of IP permissions to specify the CIDR.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FromPort**

Not supported. Use a set of IP permissions to specify the port.

Type: Integer

Required: No

**GroupId**

The ID of the security group.

Type: String

Required: Yes

**IpPermissions.N**

The sets of IP permissions. You can't specify a destination security group and a CIDR IP address range in the same set of permissions.

Type: Array of IpPermission objects

Required: No

**IpProtocol**

Not supported. Use a set of IP permissions to specify the protocol name or number.

Type: String

Required: No

**SecurityGroupRuleId.N**

The IDs of the security group rules.

Type: Array of strings

Required: No

**SourceSecurityGroupName**

Not supported. Use a set of IP permissions to specify a destination security group.

Type: String

Required: No

**SourceSecurityGroupOwnerId**

Not supported. Use a set of IP permissions to specify a destination security group.

Type: String

Required: No

**ToPort**

Not supported. Use a set of IP permissions to specify the port.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

**revokedSecurityGroupRuleSet**

Details about the revoked security group rules.

Type: Array of RevokedSecurityGroupRule objects

**unknownIpPermissionSet**

The outbound rules that were unknown to the service. In some cases, `unknownIpPermissionSet` might be in a different format from the request parameter.

Type: Array of IpPermission objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example revokes the access that the specified security group has to the `205.192.0.0/16` and `205.159.0.0/16` IPv4 address ranges on TCP port 80.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&IpPermissions.1.IpRanges.2.CidrIp=205.159.0.0/16
&AUTHPARAMS
```

### Example 2

This example revokes the access that the specified security group has to the security group with the ID `sg-9a8d7f5c` on TCP port 1433.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=1433
&IpPermissions.1.ToPort=1433
&IpPermissions.1.Groups.1.GroupId=sg-9a8d7f5c
&AUTHPARAMS
```

### Example 3

This example revokes TCP port 22 access to the `203.0.113.4/32` address range for the security group `sg-112233`. The security group rule includes the description 'Access to office CT12'.

Specifying the description to revoke the rule is optional, but if you do specify the description, it must match the existing rule's value exactly.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.IpRanges.1.CidrIp=203.0.113.4/32
&IpPermissions.1.IpRanges.1.Description=Access to office CT12
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RevokeSecurityGroupIngress

Removes the specified inbound (ingress) rules from a security group.

You can specify rules using either rule IDs or security group rule properties. If you use rule properties, the values that you specify (for example, ports) must match the existing rule's values exactly. Each rule has a protocol, from and to ports, and source (CIDR range, security group, or prefix list). For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code. If the security group rule has a description, you do not need to specify the description to revoke the rule.

For a default VPC, if the values you specify do not match the existing rule's values, no error is returned, and the output describes the security group rules that were not revoked.

For a non-default VPC, if the values you specify do not match the existing rule's values, an `InvalidPermission.NotFound` client error is returned, and no rules are revoked.

AWS recommends that you describe the security group to verify that the rules were removed.

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CidrIp**

The CIDR IP address range. You can't specify this parameter when specifying a source security group.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FromPort**

If the protocol is TCP or UDP, this is the start of the port range. If the protocol is ICMP, this is the ICMP type or -1 (all ICMP types).

Type: Integer

Required: No

**GroupId**

The ID of the security group.

Type: String

Required: No

**GroupName**

[Default VPC] The name of the security group. You must specify either the security group ID or the security group name in the request. For security groups in a nondefault VPC, you must specify the security group ID.

Type: String

Required: No

**IpPermissions.N**

The sets of IP permissions. You can't specify a source security group and a CIDR IP address range in the same set of permissions.

Type: Array of IpPermission objects

Required: No

**IpProtocol**

The IP protocol name (`tcp`, `udp`, `icmp`) or number (see Protocol Numbers). Use `-1` to specify all.

Type: String

Required: No

**SecurityGroupRuleId.N**

The IDs of the security group rules.

Type: Array of strings

Required: No

**SourceSecurityGroupName**

[Default VPC] The name of the source security group. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the start of the port range, the IP protocol, and the end of the port range. The source security group must be in the same VPC. To revoke a specific rule for an IP protocol and port range, use a set of IP permissions instead.

Type: String

Required: No

**SourceSecurityGroupOwnerId**

Not supported.

Type: String

Required: No

**ToPort**

If the protocol is TCP or UDP, this is the end of the port range. If the protocol is ICMP, this is the ICMP code or -1 (all ICMP codes).

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

**revokedSecurityGroupRuleSet**

Details about the revoked security group rules.

Type: Array of RevokedSecurityGroupRule objects

**unknownIpPermissionSet**

The inbound rules that were unknown to the service. In some cases, `unknownIpPermissionSet` might be in a different format from the request parameter.

Type: Array of IpPermission objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example revokes TCP port 80 access from the `205.192.0.0/16` IPv4 address range for the security group named `websrv`. If the security group is for a VPC, specify the ID of the security group instead of the name.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
```

```
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&AUTHPARAMS
```

### Sample Response

```
<RevokeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</RevokeSecurityGroupIngressResponse>
```

## Example 2

This example revokes TCP port 22 (SSH) access from IPv6 range `2001:db8:1234:1a00::/64`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Ipv6Ranges.1.CidrIpv6=2001:db8:1234:1a00::/64
&AUTHPARAMS
```

## Example 3

This example revokes TCP port 22 access from the `203.0.113.4/32` address range for the security group `sg-112233`. The security group rule includes the description 'Access from workstation 1a2b'. Specifying the description to revoke the rule is optional, but if you do specify the description, it must match the existing rule's value exactly.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.IpRanges.1.CidrIp=203.0.113.4/32
&IpPermissions.1.IpRanges.1.Description=Access from workstation 1a2b
```

```
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RunInstances

Launches the specified number of instances using an AMI for which you have permissions.

You can specify a number of options, or leave the default options. The following rules apply:

- If you don't specify a subnet ID, we choose a default subnet from your default VPC for you. If you don't have a default VPC, you must specify a subnet ID in the request.
- All instances have a network interface with a primary private IPv4 address. If you don't specify this address, we choose one from the IPv4 range of your subnet.
- Not all instance types support IPv6 addresses. For more information, see Instance types.
- If you don't specify a security group ID, we use the default security group for the VPC. For more information, see Security groups.
- If any of the AMIs have a product code attached for which the user has not subscribed, the request fails.

You can create a launch template, which is a resource that contains the parameters to launch an instance. When you launch an instance using RunInstances, you can specify the launch template instead of specifying the launch parameters.

To ensure faster instance launches, break up large requests into smaller batches. For example, create five separate launch requests for 100 instances each instead of one launch request for 500 instances.

`RunInstances` is subject to both request rate limiting and resource rate limiting. For more information, see Request throttling.

An instance is ready for you to use when it's in the `running` state. You can check the state of your instance using DescribeInstances. You can tag instances and EBS volumes during launch, after launch, or both. For more information, see CreateTags and Tagging your Amazon EC2 resources.

Linux instances have access to the public key of the key pair at boot. You can use this key to provide secure access to the instance. Amazon EC2 public images use this feature to provide secure access without passwords. For more information, see Key pairs.

For troubleshooting, see What to do if an instance immediately terminates, and Troubleshooting connecting to your instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AdditionalInfo**

Reserved.

Type: String

Required: No

**BlockDeviceMapping.N**

The block device mapping, which defines the EBS volumes and instance store volumes to attach to the instance at launch. For more information, see Block device mappings in the *Amazon EC2 User Guide*.

Type: Array of BlockDeviceMapping objects

Required: No

**CapacityReservationSpecification**

Information about the Capacity Reservation targeting option. If you do not specify this parameter, the instance's Capacity Reservation preference defaults to open, which enables it to run in any open Capacity Reservation that has matching attributes (instance type, platform, Availability Zone, and tenancy).

Type: CapacityReservationSpecification object

Required: No

**ClientToken**

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. If you do not specify a client token, a randomly generated token is used for the request to ensure idempotency.

For more information, see Ensuring idempotency in Amazon EC2 API requests.

Constraints: Maximum 64 ASCII characters

Type: String

Required: No

**CpuOptions**

The CPU options for the instance. For more information, see Optimize CPU options in the *Amazon EC2 User Guide*.

Type: CpuOptionsRequest object

Required: No

**CreditSpecification**

The credit option for CPU usage of the burstable performance instance. Valid values are `standard` and `unlimited`. To change this attribute after launch, use ModifyInstanceCreditSpecification. For more information, see Burstable performance instances in the *Amazon EC2 User Guide*.

Default: `standard` (T2 instances) or `unlimited` (T3/T3a/T4g instances)

For T3 instances with `host` tenancy, only `standard` is supported.

Type: CreditSpecificationRequest object

Required: No

**DisableApiStop**

Indicates whether an instance is enabled for stop protection. For more information, see Enable stop protection for your EC2 instances.

Type: Boolean

Required: No

**DisableApiTermination**

Indicates whether termination protection is enabled for the instance. The default is `false`, which means that you can terminate the instance using the Amazon EC2 console, command line tools, or API. You can enable termination protection when you launch an instance, while the instance is running, or while the instance is stopped.

Type: Boolean

Required: No

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EbsOptimized**

Indicates whether the instance is optimized for Amazon EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal Amazon EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.

Default: `false`

Type: Boolean

Required: No

**ElasticGpuSpecification.N**

*This parameter has been deprecated.*

An elastic GPU to associate with the instance.

> **Note**
>
> Amazon Elastic Graphics reached end of life on January 8, 2024.

Type: Array of ElasticGpuSpecification objects

Required: No

**ElasticInferenceAccelerator.N**

*This parameter has been deprecated.*

An elastic inference accelerator to associate with the instance.

> **Note**
>
> Amazon Elastic Inference is no longer available.

Type: Array of ElasticInferenceAccelerator objects

Required: No

**EnablePrimaryIpv6**

If you're launching an instance into a dual-stack or IPv6-only subnet, you can enable assigning a primary IPv6 address. A primary IPv6 address is an IPv6 GUA address associated with an ENI that you have enabled to use a primary IPv6 address. Use this option if an instance relies on its IPv6 address not changing. When you launch the instance, AWS will automatically assign an IPv6 address associated with the ENI attached to your instance to be the primary IPv6 address. Once you enable an IPv6 GUA address to be a primary IPv6, you cannot disable it. When you enable an IPv6 GUA address to be a primary IPv6, the first IPv6 GUA will be made the primary IPv6 address until the instance is terminated or the network interface is detached. If you have multiple IPv6 addresses associated with an ENI attached to your instance and you enable a primary IPv6 address, the first IPv6 GUA address associated with the ENI becomes the primary IPv6 address.

Type: Boolean

Required: No

**EnclaveOptions**

Indicates whether the instance is enabled for AWS Nitro Enclaves. For more information, see AWS Nitro Enclaves User Guide.

You can't enable AWS Nitro Enclaves and hibernation on the same instance.

Type: EnclaveOptionsRequest object

Required: No

**HibernationOptions**

Indicates whether an instance is enabled for hibernation. This parameter is valid only if the instance meets the hibernation prerequisites. For more information, see Hibernate your Amazon EC2 instance in the *Amazon EC2 User Guide*.

You can't enable hibernation and AWS Nitro Enclaves on the same instance.

Type: HibernationOptionsRequest object

Required: No

**IamInstanceProfile**

The name or Amazon Resource Name (ARN) of an IAM instance profile.

Type: IamInstanceProfileSpecification object

Required: No

**ImageId**

The ID of the AMI. An AMI ID is required to launch an instance and must be specified here or in a launch template.

Type: String

Required: No

**InstanceInitiatedShutdownBehavior**

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Default: `stop`

Type: String

Valid Values: `stop | terminate`

Required: No

**InstanceMarketOptions**

The market (purchasing) option for the instances.

Type: InstanceMarketOptionsRequest object

Required: No

**InstanceType**

The instance type. For more information, see Amazon EC2 Instance Types Guide.

Type: String

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge |

i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge |

r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge

| mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge

| m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl |

m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge

Required: No

**Ipv6Address.N**

The IPv6 addresses from the range of the subnet to associate with the primary network interface. You cannot specify this option and the option to assign a number of IPv6 addresses

in the same request. You cannot specify this option if you've specified a minimum number of instances to launch.

You cannot specify this option and the network interfaces option in the same request.

Type: Array of InstanceIpv6Address objects

Required: No

**Ipv6AddressCount**

The number of IPv6 addresses to associate with the primary network interface. Amazon EC2 chooses the IPv6 addresses from the range of your subnet. You cannot specify this option and the option to assign specific IPv6 addresses in the same request. You can specify this option if you've specified a minimum number of instances to launch.

You cannot specify this option and the network interfaces option in the same request.

Type: Integer

Required: No

**KernelId**

The ID of the kernel.

> **Important**
>
> We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB in the *Amazon EC2 User Guide*.

Type: String

Required: No

**KeyName**

The name of the key pair. For more information, see Create a key pair for your EC2 instance.

> **Important**
>
> If you do not specify a key pair, you can't connect to the instance unless you choose an AMI that is configured to allow users another way to log in.

Type: String

Required: No

**LaunchTemplate**

The launch template. Any additional parameters that you specify for the new instance overwrite the corresponding parameters included in the launch template.

Type: LaunchTemplateSpecification object

Required: No

**LicenseSpecification.N**

The license configurations.

Type: Array of LicenseConfigurationRequest objects

Required: No

**MaintenanceOptions**

The maintenance and recovery options for the instance.

Type: InstanceMaintenanceOptionsRequest object

Required: No

**MaxCount**

The maximum number of instances to launch. If you specify a value that is more capacity than Amazon EC2 can launch in the target Availability Zone, Amazon EC2 launches the largest possible number of instances above the specified minimum count.

Constraints: Between 1 and the quota for the specified instance type for your account for this Region. For more information, see Amazon EC2 instance type quotas.

Type: Integer

Required: Yes

**MetadataOptions**

The metadata options for the instance. For more information, see Configure the Instance Metadata Service options.

Type: InstanceMetadataOptionsRequest object

Required: No

**MinCount**

The minimum number of instances to launch. If you specify a value that is more capacity than Amazon EC2 can provide in the target Availability Zone, Amazon EC2 does not launch any instances.

Constraints: Between 1 and the quota for the specified instance type for your account for this Region. For more information, see Amazon EC2 instance type quotas.

Type: Integer

Required: Yes

**Monitoring**

Specifies whether detailed monitoring is enabled for the instance.

Type: RunInstancesMonitoringEnabled object

Required: No

**NetworkInterface.N**

The network interfaces to associate with the instance.

Type: Array of InstanceNetworkInterfaceSpecification objects

Required: No

**NetworkPerformanceOptions**

Contains settings for the network performance options for the instance.

Type: InstanceNetworkPerformanceOptionsRequest object

Required: No

**Operator**

Reserved for internal use.

Type: OperatorRequest object

Required: No

**Placement**

The placement for the instance.

Type: Placement object

Required: No

**PrivateDnsNameOptions**

The options for the instance hostname. The default values are inherited from the subnet. Applies only if creating a network interface, not attaching an existing one.

Type: PrivateDnsNameOptionsRequest object

Required: No

**PrivateIpAddress**

The primary IPv4 address. You must specify a value from the IPv4 address range of the subnet.

Only one private IP address can be designated as primary. You can't specify this option if you've specified the option to designate a private IP address as the primary IP address in a network interface specification. You cannot specify this option if you're launching more than one instance in the request.

You cannot specify this option and the network interfaces option in the same request.

Type: String

Required: No

**RamdiskId**

The ID of the RAM disk to select. Some kernels require additional drivers at launch. Check the kernel requirements for information about whether you need to specify a RAM disk. To find kernel requirements, go to the AWS Resource Center and search for the kernel ID.

> **Important**
>
> We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see PV-GRUB in the *Amazon EC2 User Guide*.

Type: String

Required: No

**SecondaryInterface.N**

The secondary interfaces to associate with the instance.

Type: Array of InstanceSecondaryInterfaceSpecificationRequest objects

Required: No

**SecurityGroup.N**

[Default VPC] The names of the security groups.

If you specify a network interface, you must specify any security groups as part of the network interface instead of using this parameter.

Default: Amazon EC2 uses the default security group.

Type: Array of strings

Required: No

**SecurityGroupId.N**

The IDs of the security groups.

If you specify a network interface, you must specify any security groups as part of the network interface instead of using this parameter.

Type: Array of strings

Required: No

**SubnetId**

The ID of the subnet to launch the instance into.

If you specify a network interface, you must specify any subnets as part of the network interface instead of using this parameter.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the resources that are created during instance launch.

You can specify tags for the following resources only:

- Instances
- Volumes
- Spot Instance requests
- Network interfaces

To tag a resource after it has been created, see CreateTags.

Type: Array of TagSpecification objects

Required: No

**UserData**

The user data to make available to the instance. User data must be base64-encoded. Depending on the tool or SDK that you're using, the base64-encoding might be performed for you. For more information, see Run commands at launch using instance user data.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**groupSet**

Not supported.

Type: Array of GroupIdentifier objects

**instancesSet**

The instances.

Type: Array of Instance objects

**ownerId**

The ID of the AWS account that owns the reservation.

Type: String

**requesterId**

The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

**requestId**

The ID of the request.

Type: String

**reservationId**

The ID of the reservation.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example launches three instances using the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-60a54009
&MaxCount=3
&MinCount=1
&KeyName=my-key-pair
&SecurityGroupId.1=sg-0598c7d3
```

```
&Placement.AvailabilityZone=us-east-1d
&AUTHPARAMS
```

## Example 2

This example launches an instance into the specified subnet. Because no network interface is specified, a new network interface is created.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=t2.micro
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SecurityGroupId.1=sg-0598c7d3
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

## Example 3

This example launches an instance into the specified subnet. The network interface specifies a primary private IPv4 address of `10.0.2.106` and two secondary private IPv4 addresses (`10.0.2.107` and `10.0.2.108`).

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-beb0caec
&InstanceType=t2.small
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.PrivateIpAddresses.1.Primary=true
&NetworkInterface.1.PrivateIpAddresses.1.PrivateIpAddress=10.0.2.106
&NetworkInterface.1.PrivateIpAddresses.2.Primary=false
&NetworkInterface.1.PrivateIpAddresses.2.PrivateIpAddress=10.0.2.107
&NetworkInterface.1.PrivateIpAddresses.3.Primary=false
&NetworkInterface.1.PrivateIpAddresses.3.PrivateIpAddress=10.0.2.108
&NetworkInterface.1.SubnetId=subnet-a61dafcf
```

```
&AUTHPARAMS
```

## Example 4

This example launches a Dedicated Instance into the specified subnet.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2a1fec43
&InstanceType=m6i.8xlarge
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SecurityGroupId.1=sg-0598c7d3
&SubnetId=subnet-dea63cb7
&Placement.Tenancy=dedicated
&AUTHPARAMS
```

## Example 5

This request launches an instance into the specified subnet, and requests a public IPv4 address for a new network interface with the device index of 0.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&InstanceType=m6i.8xlarge
&MaxCount=1
&MinCount=1
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.AssociatePublicIpAddress=true
&NetworkInterface.1.SubnetId=subnet-1a2b3c4d
&AUTHPARAMS
```

## Example 6

This request launches an instance with a block device mapping. There are two instance store volumes mapped to `/dev/sdc` and `/dev/sdd`, and a 100-GB EBS volume mapped to `/dev/sdf`. The EBS volume attached to the instance is encrypted using a customer managed KMS key.

For more information about block device mappings, see EbsBlockDevice and Modifying block device mappings during launch.

For more information, see Amazon EBS encryption.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&InstanceType=m6id.12xlarge
&BlockDeviceMapping.1.DeviceName=%2Fdev%2Fsdc
&BlockDeviceMapping.1.VirtualName=ephemeral0
&BlockDeviceMapping.2.DeviceName=%2Fdev%2Fsdd
&BlockDeviceMapping.2.VirtualName=ephemeral1
&BlockDeviceMapping.3.DeviceName=%2Fdev%2Fsdf
&BlockDeviceMapping.3.Ebs.DeleteOnTermination=false
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&BlockDeviceMapping.3.Ebs.Encrypted=true
&BlockDeviceMapping.3.Ebs.KmsKeyId=arn%3Aaws%3Akms%3Aus-east-1%3A009400881653%3Akey
%2Fa48a521f-3aff-4b34-a159-376ac5d37812
&EbsOptimized=false
&MinCount=1
&MaxCount=1
&DisableApiTermination=false
&Monitoring.Enabled=false
&AUTHPARAMS
```

## Example 7

This request launches two instances and applies a tag with a key of `webserver` and a value of `production` to the instances. The request also applies a tag with a key of `cost-center` and a value of `cc123` to the volumes that are created (in this case, the root volume for each instance).

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=t2.large
&MaxCount=2
&MinCount=1
&KeyName=my-key-pair
&SecurityGroupId.1=sg-0598c7d3
```

```
&SubnetId=subnet-b2a249da
&TagSpecification.1.ResourceType=instance
&TagSpecification.1.Tag.1.Key=webserver
&TagSpecification.1.Tag.1.Value=production
&TagSpecification.2.ResourceType=volume
&TagSpecification.2.Tag.1.Key=cost-center
&TagSpecification.2.Tag.1.Value=cc123
&AUTHPARAMS
```

## Example 8

This request launches a burstable performance instance with the credit option for CPU usage set to `unlimited`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=t2.micro
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SecurityGroupId.1=sg-0598c7d3
&CreditSpecification.CpuCredits=unlimited
&AUTHPARAMS
```

## Example 9

This request launches an instance into the specified partition placement group but does not specify the partition.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=t3.large
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SecurityGroupId.1=sg-0598c7d3
&Placement=HDFS-Group-A
&AUTHPARAMS
```

## Example 10

This request launches an instance into the specified partition placement group and into the specified partition.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=t3.large
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SecurityGroupId.1=sg-0598c7d3
&Placement=HDFS-Group-A
&Partition=2
&AUTHPARAMS
```

## Example 11

This example launches an instance with a metadata type requiring a session token for metadata retrieval requests.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&InstanceType=c6i.large
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SecurityGroupId.1=sg-0598c7d3
&MetadataOptions.HttpTokens=required
&AUTHPARAMS
```

## Example 12

This example launches an instance with instance metadata access turned off.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
```

```
&InstanceType=c6i.large
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SecurityGroupId.1=sg-0598c7d3
&MetadataOptions.HttpEndpoint=disabled
&AUTHPARAMS
```

## Example 13

This example launches an instance with a metadata type requiring a session token for metadata retrieval requests and a metadata hop limit of 3.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&InstanceType=c6i.large
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SecurityGroupId.1=sg-0598c7d3
&MetadataOptions.HttpTokens=required
&MetadataOptions.HttpPutResponseHopLimit=3
&AUTHPARAMS
```

## Example 14

This example launches an instance and assigns two security groups and an IPv6 address to the primary network interface.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-00112233445566aab
&InstanceType=t2.micro
&MinCount=1
&MaxCount=1
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.SecurityGroupId.1=sg-444455556666cccdd
&NetworkInterface.1.SecurityGroupId.2=sg-111122223333aaabb
&NetworkInterface.1.Ipv6Addresses.1.Ipv6Address=2001:db8:1234:1a00::123
&NetworkInterface.1.SubnetId=subnet-aabbccdd112233445
```

```
&AUTHPARAMS
```

## Example 15

This example launches a single instance with 8 secondary interfaces, each on a separate network card and configured for automatic deletion on termination.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
  &ImageId=ami-beb0caec
  &InstanceType=<instanceType>
  &MaxCount=1
  &MinCount=1
  &Placement.AvailabilityZoneId=use2-az1
  &NetworkInterface.1.DeviceIndex=0
  &NetworkInterface.1.SubnetId=subnet-a61dafcf
  &NetworkInterface.1.DeleteOnTermination
  &SecondaryInterface.1.SecondarySubnetId=ss-073988ab526b59d2c
  &SecondaryInterface.1.NetworkCardIndex=1
  &SecondaryInterface.1.DeviceIndex=0
  &SecondaryInterface.1.InterfaceType=secondary
  &SecondaryInterface.1.DeleteOnTermination=true
  &SecondaryInterface.1.PrivateIpAddressCount=1
  &SecondaryInterface.2.SecondarySubnetId=ss-061ba0b5a43c9eabe
  &SecondaryInterface.2.NetworkCardIndex=2
  &SecondaryInterface.2.DeviceIndex=0
  &SecondaryInterface.2.InterfaceType=secondary
  &SecondaryInterface.2.DeleteOnTermination=true
  &SecondaryInterface.2.PrivateIpAddressCount=1
  &SecondaryInterface.3.SecondarySubnetId=ss-060c8c15859a0c8e5
  &SecondaryInterface.3.NetworkCardIndex=3
  &SecondaryInterface.3.DeviceIndex=0
  &SecondaryInterface.3.InterfaceType=secondary
  &SecondaryInterface.3.DeleteOnTermination=true
  &SecondaryInterface.3.PrivateIpAddressCount=1
  &SecondaryInterface.4.SecondarySubnetId=ss-0dafcecef369ae17d
  &SecondaryInterface.4.NetworkCardIndex=4
  &SecondaryInterface.4.DeviceIndex=0
  &SecondaryInterface.4.InterfaceType=secondary
  &SecondaryInterface.4.DeleteOnTermination=true
  &SecondaryInterface.4.PrivateIpAddressCount=1
  &SecondaryInterface.5.SecondarySubnetId=ss-073988ab526b59d2e
```

```
  &SecondaryInterface.5.NetworkCardIndex=5
  &SecondaryInterface.5.DeviceIndex=0
  &SecondaryInterface.5.InterfaceType=secondary
  &SecondaryInterface.5.DeleteOnTermination=true
  &SecondaryInterface.5.PrivateIpAddressCount=1
  &SecondaryInterface.6.SecondarySubnetId=ss-061ba0b5a43c9eabf
  &SecondaryInterface.6.NetworkCardIndex=6
  &SecondaryInterface.6.DeviceIndex=0
  &SecondaryInterface.6.InterfaceType=secondary
  &SecondaryInterface.6.DeleteOnTermination=true
  &SecondaryInterface.6.PrivateIpAddressCount=1
  &SecondaryInterface.7.SecondarySubnetId=ss-060c8c15859a0c8e1
  &SecondaryInterface.7.NetworkCardIndex=7
  &SecondaryInterface.7.DeviceIndex=0
  &SecondaryInterface.7.InterfaceType=secondary
  &SecondaryInterface.7.DeleteOnTermination=true
  &SecondaryInterface.7.PrivateIpAddressCount=1
  &SecondaryInterface.8.SecondarySubnetId=ss-0dafcecef369ae172
  &SecondaryInterface.8.NetworkCardIndex=8
  &SecondaryInterface.8.DeviceIndex=0
  &SecondaryInterface.8.InterfaceType=secondary
  &SecondaryInterface.8.DeleteOnTermination=true
  &SecondaryInterface.8.PrivateIpAddressCount=1
  &AUTHPARAMS
```

## Sample Response

```
<RunInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d61f4ee4-1e53-4bf8-9cf2-08c5e2f03da4</requestId>
  <reservationId>r-0ddcaaa5e0c45ca09</reservationId>
  <ownerId>123456789012</ownerId>
  <groupSet />
  <instancesSet>
    <item>
      <instanceId>i-05e4d39f17ac88e74</instanceId>
      <imageId>ami-beb0caec</imageId>
      <instanceState>
        <code>0</code>
        <name>pending</name>
      </instanceState>
      <privateDnsName>ip-172-31-63-109.us-west-2.compute.internal</privateDnsName>
      <dnsName />
      <reason />
```

```
        <amiLaunchIndex>0</amiLaunchIndex>
        <productCodes />
        <operator>
          <managed>false</managed>
        </operator>
        <instanceType><instanceType></instanceType>
        <launchTime>2026-01-07T12:19:54.000Z</launchTime>
        <placement>
          <availabilityZone>us-east-2a</availabilityZone>
          <availabilityZoneId>use2-az1</availabilityZoneId>
          <groupName />
          <tenancy>default</tenancy>
        </placement>
        <monitoring>
          <state>disabled</state>
        </monitoring>
        <subnetId>subnet-a61dafcf</subnetId>
        <vpcId>vpc-0564039f140880335</vpcId>
        <privateIpAddress>172.31.63.109</privateIpAddress>
        <sourceDestCheck>true</sourceDestCheck>
        <groupSet>
          <item>
            <groupId>sg-087603de13e5e0723</groupId>
            <groupName>default</groupName>
          </item>
        </groupSet>
        <stateReason>
          <code>pending</code>
          <message>pending</message>
        </stateReason>
        <architecture>x86_64</architecture>
        <rootDeviceType>ebs</rootDeviceType>
        <rootDeviceName>/dev/xvda</rootDeviceName>
        <blockDeviceMapping />
        <virtualizationType>hvm</virtualizationType>
        <clientToken />
        <hypervisor>xen</hypervisor>
        <networkInterfaceSet>
          <item>
            <networkInterfaceId>eni-0e58a9ead2097b866</networkInterfaceId>
            <subnetId>subnet-a61dafcf</subnetId>
            <vpcId>vpc-0564039f140880335</vpcId>
            <description />
            <ownerId>123456789012</ownerId>
```

```
          <status>in-use</status>
          <macAddress>0e:2d:76:a2:bf:d3</macAddress>
          <privateIpAddress>172.31.63.109</privateIpAddress>
          <privateDnsName>ip-172-31-63-109.us-west-2.compute.internal</privateDnsName>
          <sourceDestCheck>true</sourceDestCheck>
          <groupSet>
            <item>
              <groupId>sg-087603de13e5e0723</groupId>
              <groupName>default</groupName>
            </item>
          </groupSet>
          <attachment>
            <attachmentId>eni-attach-0366b9a273aec9b6d</attachmentId>
            <deviceIndex>0</deviceIndex>
            <status>attaching</status>
            <attachTime>2026-01-07T12:19:54.000Z</attachTime>
            <deleteOnTermination>true</deleteOnTermination>
            <networkCardIndex>0</networkCardIndex>
          </attachment>
          <privateIpAddressesSet>
            <item>
              <privateIpAddress>172.31.63.109</privateIpAddress>
              <privateDnsName>ip-172-31-63-109.us-west-2.compute.internal</
privateDnsName>
              <primary>true</primary>
            </item>
          </privateIpAddressesSet>
          <ipv6AddressesSet />
          <interfaceType>interface</interfaceType>
          <operator>
            <managed>false</managed>
          </operator>
        </item>
      </networkInterfaceSet>
      <secondaryNetworkInterfaceSet>
        <item>
          <secondaryInterfaceId>si-01ccd067bff3abaf8</secondaryInterfaceId>
          <macAddress>02:04:f6:35:eb:32</macAddress>
          <ownerId>123456789012</ownerId>
          <privateIpAddresses>
            <item>
              <privateIpAddress>11.0.1.251</privateIpAddress>
            </item>
          </privateIpAddresses>
```

```
      <sourceDestCheck>true</sourceDestCheck>
      <status>available</status>
      <secondarySubnetId>ss-073988ab526b59d2c</secondarySubnetId>
      <secondaryNetworkId>sn-01cdb8e434dffbb26</secondaryNetworkId>
      <interfaceType>secondary</interfaceType>
      <attachment>
        <deleteOnTermination>true</deleteOnTermination>
        <deviceIndex>0</deviceIndex>
        <networkCardIndex>1</networkCardIndex>
      </attachment>
    </item>
    <item>
      <secondaryInterfaceId>si-0b918509a38139722</secondaryInterfaceId>
      <macAddress>02:04:70:38:b6:1a</macAddress>
      <ownerId>123456789012</ownerId>
      <privateIpAddresses>
        <item>
          <privateIpAddress>11.0.2.251</privateIpAddress>
        </item>
      </privateIpAddresses>
      <sourceDestCheck>true</sourceDestCheck>
      <status>available</status>
      <secondarySubnetId>ss-061ba0b5a43c9eabe</secondarySubnetId>
      <secondaryNetworkId>sn-01cdb8e434dffbb26</secondaryNetworkId>
      <interfaceType>secondary</interfaceType>
      <attachment>
        <deleteOnTermination>true</deleteOnTermination>
        <deviceIndex>0</deviceIndex>
        <networkCardIndex>2</networkCardIndex>
      </attachment>
    </item>
    <item>
      <secondaryInterfaceId>si-0d042753b88c81245</secondaryInterfaceId>
      <macAddress>02:04:7d:07:d9:01</macAddress>
      <ownerId>123456789012</ownerId>
      <privateIpAddresses>
        <item>
          <privateIpAddress>11.0.3.251</privateIpAddress>
        </item>
      </privateIpAddresses>
      <sourceDestCheck>true</sourceDestCheck>
      <status>available</status>
      <secondarySubnetId>ss-060c8c15859a0c8e5</secondarySubnetId>
      <secondaryNetworkId>sn-01cdb8e434dffbb26</secondaryNetworkId>
```

```
      <interfaceType>secondary</interfaceType>
      <attachment>
        <deleteOnTermination>true</deleteOnTermination>
        <deviceIndex>0</deviceIndex>
        <networkCardIndex>3</networkCardIndex>
      </attachment>
    </item>
    <item>
      <secondaryInterfaceId>si-70dafcecef67ae17d</secondaryInterfaceId>
      <macAddress>02:04:8f:53:73:02</macAddress>
      <ownerId>123456789012</ownerId>
      <privateIpAddresses>
        <item>
          <privateIpAddress>11.0.4.251</privateIpAddress>
        </item>
      </privateIpAddresses>
      <sourceDestCheck>true</sourceDestCheck>
      <status>available</status>
      <secondarySubnetId>ss-0dafcecef369ae17d</secondarySubnetId>
      <secondaryNetworkId>sn-01cdb8e434dffbb26</secondaryNetworkId>
      <interfaceType>secondary</interfaceType>
      <attachment>
        <deleteOnTermination>true</deleteOnTermination>
        <deviceIndex>0</deviceIndex>
        <networkCardIndex>4</networkCardIndex>
      </attachment>
    </item>
    <item>
      <secondaryInterfaceId>si-0f4f36a50046f21b8</secondaryInterfaceId>
      <macAddress>02:04:8f:53:73:03</macAddress>
      <ownerId>123456789012</ownerId>
      <privateIpAddresses>
        <item>
          <privateIpAddress>11.0.4.230</privateIpAddress>
        </item>
      </privateIpAddresses>
      <sourceDestCheck>true</sourceDestCheck>
      <status>available</status>
      <secondarySubnetId>ss-073988ab526b59d2e</secondarySubnetId>
      <secondaryNetworkId>sn-01cdb8e434dffbb26</secondaryNetworkId>
      <interfaceType>secondary</interfaceType>
      <attachment>
        <deleteOnTermination>true</deleteOnTermination>
        <deviceIndex>0</deviceIndex>
```

```
            <networkCardIndex>5</networkCardIndex>
          </attachment>
        </item>
        <item>
          <secondaryInterfaceId>si-006736a50046f21b9</secondaryInterfaceId>
          <macAddress>02:04:8f:53:73:04</macAddress>
          <ownerId>123456789012</ownerId>
          <privateIpAddresses>
            <item>
              <privateIpAddress>11.0.4.231</privateIpAddress>
            </item>
          </privateIpAddresses>
          <sourceDestCheck>true</sourceDestCheck>
          <status>available</status>
          <secondarySubnetId>ss-061ba0b5a43c9eabf</secondarySubnetId>
          <secondaryNetworkId>sn-01cdb8e434dffbb26</secondaryNetworkId>
          <interfaceType>secondary</interfaceType>
          <attachment>
            <deleteOnTermination>true</deleteOnTermination>
            <deviceIndex>0</deviceIndex>
            <networkCardIndex>6</networkCardIndex>
          </attachment>
        </item>
        <item>
          <secondaryInterfaceId>si-0fff36a5d046f2110</secondaryInterfaceId>
          <macAddress>02:04:8f:53:73:05</macAddress>
          <ownerId>123456789012</ownerId>
          <privateIpAddresses>
            <item>
              <privateIpAddress>11.0.4.232</privateIpAddress>
            </item>
          </privateIpAddresses>
          <sourceDestCheck>true</sourceDestCheck>
          <status>available</status>
          <secondarySubnetId>ss-060c8c15859a0c8e1</secondarySubnetId>
          <secondaryNetworkId>sn-01cdb8e434dffbb26</secondaryNetworkId>
          <interfaceType>secondary</interfaceType>
          <attachment>
            <deleteOnTermination>true</deleteOnTermination>
            <deviceIndex>0</deviceIndex>
            <networkCardIndex>7</networkCardIndex>
          </attachment>
        </item>
        <item>
```

```
        <secondaryInterfaceId>si-afcf36a50046f2111</secondaryInterfaceId>
        <macAddress>02:04:8f:53:73:06</macAddress>
        <ownerId>123456789012</ownerId>
        <privateIpAddresses>
          <item>
            <privateIpAddress>11.0.4.233</privateIpAddress>
          </item>
        </privateIpAddresses>
        <sourceDestCheck>true</sourceDestCheck>
        <status>available</status>
        <secondarySubnetId>ss-0dafcecef369ae172</secondarySubnetId>
        <secondaryNetworkId>sn-01cdb8e434dffbb26</secondaryNetworkId>
        <interfaceType>secondary</interfaceType>
        <attachment>
          <deleteOnTermination>true</deleteOnTermination>
          <deviceIndex>0</deviceIndex>
          <networkCardIndex>8</networkCardIndex>
        </attachment>
      </item>
    </secondaryNetworkInterfaceSet>
    <ebsOptimized>false</ebsOptimized>
    <enaSupport>true</enaSupport>
    <cpuOptions>
      <coreCount>96</coreCount>
      <threadsPerCore>2</threadsPerCore>
    </cpuOptions>
    <capacityReservationSpecification>
      <capacityReservationPreference>open</capacityReservationPreference>
    </capacityReservationSpecification>
    <enclaveOptions>
      <enabled>false</enabled>
    </enclaveOptions>
    <metadataOptions>
      <state>pending</state>
      <httpTokens>required</httpTokens>
      <httpPutResponseHopLimit>2</httpPutResponseHopLimit>
      <httpEndpoint>enabled</httpEndpoint>
      <httpProtocolIpv4>enabled</httpProtocolIpv4>
      <httpProtocolIpv6>disabled</httpProtocolIpv6>
      <instanceMetadataTags>disabled</instanceMetadataTags>
    </metadataOptions>
    <maintenanceOptions>
      <autoRecovery>default</autoRecovery>
      <rebootMigration>default</rebootMigration>
```

```
      </maintenanceOptions>
      <currentInstanceBootMode>legacy-bios</currentInstanceBootMode>
      <privateDnsNameOptions>
        <hostnameType>ip-name</hostnameType>
        <enableResourceNameDnsARecord>false</enableResourceNameDnsARecord>
        <enableResourceNameDnsAAAARecord>false</enableResourceNameDnsAAAARecord>
      </privateDnsNameOptions>
    </item>
  </instancesSet>
</RunInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# RunScheduledInstances

Launches the specified Scheduled Instances.

Before you can launch a Scheduled Instance, you must purchase it and obtain an identifier using PurchaseScheduledInstances.

You must launch a Scheduled Instance during its scheduled time period. You can't stop or reboot a Scheduled Instance, but you can terminate it as needed. If you terminate a Scheduled Instance before the current scheduled time period ends, you can launch it again after a few minutes.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that ensures the idempotency of the request. For more information, see Ensuring Idempotency.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceCount**

The number of instances.

Default: 1

Type: Integer

Required: No

**LaunchSpecification**

The launch specification. You must match the instance type, Availability Zone, network, and platform of the schedule that you purchased.

Type: ScheduledInstancesLaunchSpecification object

Required: Yes

**ScheduledInstanceId**

The Scheduled Instance ID.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceIdSet**

The IDs of the newly launched instances.

Type: Array of strings

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# SearchLocalGatewayRoutes

Searches for routes in the specified local gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters.

- `prefix-list-id` - The ID of the prefix list.
- `route-search.exact-match` - The exact match of the specified filter.
- `route-search.longest-prefix-match` - The longest prefix that matches the route.
- `route-search.subnet-of-match` - The routes with a subnet that match the specified CIDR filter.
- `route-search.supernet-of-match` - The routes with a CIDR that encompass the CIDR filter. For example, if you have 10.0.1.0/29 and 10.0.1.0/31 routes in your route table and you specify `supernet-of-match` as 10.0.1.0/30, then the result returns 10.0.1.0/29.
- `state` - The state of the route.
- `type` - The route type.

Type: Array of Filter objects

Required: No

**LocalGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: Yes

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**routeSet**

Information about the routes.

Type: Array of LocalGatewayRoute objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# SearchTransitGatewayMulticastGroups

Searches one or more transit gateway multicast groups and returns the group membership information.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `group-ip-address` - The IP address of the transit gateway multicast group.
- `is-group-member` - The resource is a group member. Valid values are `true` | `false`.
- `is-group-source` - The resource is a group source. Valid values are `true` | `false`.
- `member-type` - The member type. Valid values are `igmp` | `static`.
- `resource-id` - The ID of the resource.
- `resource-type` - The type of resource. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `tgw-peering`.
- `source-type` - The source type. Valid values are `igmp` | `static`.
- `subnet-id` - The ID of the subnet.
- `transit-gateway-attachment-id` - The id of the transit gateway attachment.

Type: Array of Filter objects

Required: No

**MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**multicastGroups**

Information about the transit gateway multicast group.

Type: Array of TransitGatewayMulticastGroup objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example 1

This example returns the group membership information for the specified multicast domain.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=SearchTransitGatewayMulticastGroups
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef79d6e597
&AUTHPARAMS
```

#### Sample Response

```
<SearchTransitGatewayMulticastGroupsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>19af1e8f-f80b-479d-9cf4-c7d19EXAMPLE</requestId>
    <multicastGroups>
        <item>
            <groupIpAddress>224.0.1.0</groupIpAddress>
            <groupMember>true</groupMember>
            <groupSource>false</groupSource>
            <memberType>static</memberType>
            <networkInterfaceId>eni-07f290fc3cEXAMPLE</networkInterfaceId>
            <subnetId>subnet-000de86e3bEXAMPLE</subnetId>
            <transitGatewayAttachmentId>tgw-attach-028c1dd0f8EXAMPLE</
transitGatewayAttachmentId>
        </item>
        <item>
            <groupIpAddress>224.0.1.0</groupIpAddress>
            <groupMember>false</groupMember>
```

```
            <groupSource>true</groupSource>
            <networkInterfaceId>eni-0e246d32695012e81</networkInterfaceId>
            <sourceType>static</sourceType>
            <subnetId>subnet-000de86e3bEXAMPLE</subnetId>
            <transitGatewayAttachmentId>tgw-attach-028c1dd0f8EXAMPLE</
transitGatewayAttachmentId>
        </item>
    </multicastGroups>
</SearchTransitGatewayMulticastGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# SearchTransitGatewayRoutes

Searches for routes in the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Filter.N**

One or more filters. The possible values are:

- `attachment.transit-gateway-attachment-id`- The id of the transit gateway attachment.
- `attachment.resource-id` - The resource id of the transit gateway attachment.
- `attachment.resource-type` - The attachment resource type. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `peering` | `connect`.
- `prefix-list-id` - The ID of the prefix list.
- `route-search.exact-match` - The exact match of the specified filter.
- `route-search.longest-prefix-match` - The longest prefix that matches the route.
- `route-search.subnet-of-match` - The routes with a subnet that match the specified CIDR filter.
- `route-search.supernet-of-match` - The routes with a CIDR that encompass the CIDR filter. For example, if you have 10.0.1.0/29 and 10.0.1.0/31 routes in your route table and you specify supernet-of-match as 10.0.1.0/30, then the result returns 10.0.1.0/29.
- `state` - The state of the route (`active` | `blackhole`).
- `type` - The type of route (`propagated` | `static`).

Type: Array of Filter objects

Required: Yes

**MaxResults**

The maximum number of routes to return. If a value is not provided, the default is 1000.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token for the next page of results.

Type: String

Required: No

**TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**additionalRoutesAvailable**

Indicates whether there are additional routes available.

Type: Boolean

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**routeSet**

Information about the routes.

Type: Array of TransitGatewayRoute objects

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# SendDiagnosticInterrupt

Sends a diagnostic interrupt to the specified Amazon EC2 instance to trigger a *kernel panic* (on Linux instances), or a *blue screen/stop error* (on Windows instances). For instances based on Intel and AMD processors, the interrupt is received as a *non-maskable interrupt* (NMI).

In general, the operating system crashes and reboots when a kernel panic or stop error is triggered. The operating system can also be configured to perform diagnostic tasks, such as generating a memory dump file, loading a secondary kernel, or obtaining a call trace.

Before sending a diagnostic interrupt to your instance, ensure that its operating system is configured to perform the required diagnostic tasks.

For more information about configuring your operating system to generate a crash dump when a kernel panic or stop error occurs, see Send a diagnostic interrupt (for advanced users) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example sends a diagnostic interrupt to the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=SendDiagnosticInterrupt
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<SendDiagnosticInterruptResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</SendDiagnosticInterruptResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# StartDeclarativePoliciesReport

Generates an account status report. The report is generated asynchronously, and can take several hours to complete.

The report provides the current status of all attributes supported by declarative policies for the accounts within the specified scope. The scope is determined by the specified `TargetId`, which can represent an individual account, or all the accounts that fall under the specified organizational unit (OU) or root (the entire AWS Organization).

The report is saved to your specified S3 bucket, using the following path structure (with the capitalized placeholders representing your specific values):

```
s3://AMZN-S3-DEMO-BUCKET/YOUR-OPTIONAL-S3-PREFIX/
ec2_TARGETID_REPORTID_YYYYMMDDTHHMMZ.csv
```

**Prerequisites for generating a report**

- The `StartDeclarativePoliciesReport` API can only be called by the management account or delegated administrators for the organization.
- An S3 bucket must be available before generating the report (you can create a new one or use an existing one), it must be in the same Region where the report generation request is made, and it must have an appropriate bucket policy. For a sample S3 policy, see *Sample Amazon S3 policy* under Examples.
- Trusted access must be enabled for the service for which the declarative policy will enforce a baseline configuration. If you use the AWS Organizations console, this is done automatically when you enable declarative policies. The API uses the following service principal to identify the EC2 service: `ec2.amazonaws.com`. For more information on how to enable trusted access with the AWS CLI and AWS SDKs, see Using Organizations with other AWS services in the *AWS Organizations User Guide*.
- Only one report per organization can be generated at a time. Attempting to generate a report while another is in progress will result in an error.

For more information, including the required IAM permissions to run this API, see Generating the account status report for declarative policies in the *AWS Organizations User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**S3Bucket**

The name of the S3 bucket where the report will be saved. The bucket must be in the same Region where the report generation request is made.

Type: String

Required: Yes

**S3Prefix**

The prefix for your S3 object.

Type: String

Required: No

**TagSpecification.N**

The tags to apply.

Type: Array of TagSpecification objects

Required: No

**TargetId**

The root ID, organizational unit ID, or account ID.

Format:

- For root: `r-ab12`
- For OU: `ou-ab12-cdef1234`
- For account: `123456789012`

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**reportId**

The ID of the report.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Sample Amazon S3 policy

Before generating a report, you must grant the EC2 Declarative Policies principal access to the Amazon S3 bucket where the report will be stored. To do this, attach the following policy to the bucket. Remember to replace *amzn-s3-demo-bucket* in the policy with your actual S3 bucket name, and *identity_ARN* with the IAM identity used to call the `StartDeclarativePoliciesReport` API. The statement in the `Condition` element ensures that the service can call the operation on your behalf using the credentials used to call the `StartDeclarativePoliciesReport` API.

```
{
```

```
    "Version": "2012-10-17",
    "Statement": [{
        "Sid": "DeclarativePoliciesReportDelivery",
        "Effect": "Allow",
        "Principal": {
            "AWS": "identity_ARN"
        },
        "Action": [
            "s3:PutObject"
        ],
        "Resource": "arn:aws:s3:::amzn-s3-demo-bucket/*",
        "Condition": {
            "StringEquals": {
                "aws:CalledViaLast": "report.declarative-policies-ec2.amazonaws.com"
            }
        }
    }]
}
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# StartInstances

Starts an Amazon EBS-backed instance that you've previously stopped.

Instances that use Amazon EBS volumes as their root devices can be quickly stopped and started. When an instance is stopped, the compute resources are released and you are not billed for instance usage. However, your root partition Amazon EBS volume remains and continues to persist your data, and you are charged for Amazon EBS volume usage. You can restart your instance at any time. Every time you start your instance, Amazon EC2 charges a one-minute minimum for instance usage, and thereafter charges per second for instance usage.

Before stopping an instance, make sure it is in a state from which it can be restarted. Stopping an instance does not preserve data stored in RAM.

Performing this operation on an instance that uses an instance store as its root device returns an error.

If you attempt to start a T3 instance with `host` tenancy and the `unlimited` CPU credit option, the request fails. The `unlimited` CPU credit option is not supported on Dedicated Hosts. Before you start the instance, either change its CPU credit option to `standard`, or change its tenancy to `default` or `dedicated`.

For more information, see Stop and start Amazon EC2 instances in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AdditionalInfo**

Reserved.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId.N**

The IDs of the instances.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**instancesSet**

Information about the started instances.

Type: Array of InstanceStateChange objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example starts the specified instance.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=StartInstances
&InstanceId.1=i-1234567890abcdef0
```

```
&AUTHPARAMS
```

### Sample Response

```
<StartInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <currentState>
          <code>0</code>
          <name>pending</name>
      </currentState>
      <previousState>
          <code>80</code>
          <name>stopped</name>
      </previousState>
    </item>
  </instancesSet>
</StartInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# StartNetworkInsightsAccessScopeAnalysis

Starts analyzing the specified Network Access Scope.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**NetworkInsightsAccessScopeId**

The ID of the Network Access Scope.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**networkInsightsAccessScopeAnalysis**

The Network Access Scope analysis.

Type: NetworkInsightsAccessScopeAnalysis object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# StartNetworkInsightsAnalysis

Starts analyzing the specified path. If the path is reachable, the operation returns the shortest feasible path.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**AdditionalAccount.N**

The member accounts that contain resources that the path can traverse.

Type: Array of strings

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see How to ensure idempotency.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**FilterInArn.N**

The Amazon Resource Names (ARN) of the resources that the path must traverse.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**FilterOutArn.N**

The Amazon Resource Names (ARN) of the resources that the path will ignore.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**NetworkInsightsPathId**

The ID of the path.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply.

Type: Array of TagSpecification objects

Required: No

## Response Elements

The following elements are returned by the service.

**networkInsightsAnalysis**

Information about the network insights analysis.

Type: NetworkInsightsAnalysis object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# StartVpcEndpointServicePrivateDnsVerification

Initiates the verification process to prove that the service provider owns the private DNS name domain for the endpoint service.

The service provider must successfully perform the verification before the consumer can use the name to access the service.

Before the service provider runs this command, they must add a record to the DNS server.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**ServiceId**

The ID of the endpoint service.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# StopInstances

Stops an Amazon EBS-backed instance. You can restart your instance at any time using the StartInstances API. For more information, see Stop and start Amazon EC2 instances in the *Amazon EC2 User Guide*.

When you stop or hibernate an instance, we shut it down. By default, this includes a graceful operating system (OS) shutdown. To bypass the graceful shutdown, use the `skipOsShutdown` parameter; however, this might risk data integrity.

You can use the StopInstances operation together with the `Hibernate` parameter to hibernate an instance if the instance is enabled for hibernation and meets the hibernation prerequisites. Stopping an instance doesn't preserve data stored in RAM, while hibernation does. If hibernation fails, a normal shutdown occurs. For more information, see Hibernate your Amazon EC2 instance in the *Amazon EC2 User Guide*.

If your instance appears stuck in the `stopping` state, there might be an issue with the underlying host computer. You can use the StopInstances operation together with the Force parameter to force stop your instance. For more information, see Troubleshoot Amazon EC2 instance stop issues in the *Amazon EC2 User Guide*.

Stopping and hibernating an instance differs from rebooting or terminating it. For example, a stopped or hibernated instance retains its root volume and any data volumes, unlike terminated instances where these volumes are automatically deleted. For more information about the differences between stopping, hibernating, rebooting, and terminating instances, see Amazon EC2 instance state changes in the *Amazon EC2 User Guide*.

We don't charge for instance usage or data transfer fees when an instance is stopped. However, the root volume and any data volumes remain and continue to persist your data, and you're charged for volume usage. Every time you start your instance, Amazon EC2 charges a one-minute minimum for instance usage, followed by per-second billing.

You can't stop or hibernate instance store-backed instances.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Force**

Forces the instance to stop. The instance will first attempt a graceful shutdown, which includes flushing file system caches and metadata. If the graceful shutdown fails to complete within the timeout period, the instance shuts down forcibly without flushing the file system caches and metadata.

After using this option, you must perform file system check and repair procedures. This option is not recommended for Windows instances. For more information, see Troubleshoot Amazon EC2 instance stop issues in the *Amazon EC2 User Guide*.

Default: `false`

Type: Boolean

Required: No

**Hibernate**

Hibernates the instance if the instance was enabled for hibernation at launch. If the instance cannot hibernate successfully, a normal shutdown occurs. For more information, see Hibernate your Amazon EC2 instance in the *Amazon EC2 User Guide*.

Default: `false`

Type: Boolean

Required: No

**InstanceId.N**

The IDs of the instances.

Type: Array of strings

Required: Yes

**SkipOsShutdown**

Specifies whether to bypass the graceful OS shutdown process when the instance is stopped.

> **Important**
>
> Bypassing the graceful OS shutdown might result in data loss or corruption (for example, memory contents not flushed to disk or loss of in-flight IOs) or skipped shutdown scripts.

Default: `false`

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**instancesSet**

Information about the stopped instances.

Type: Array of InstanceStateChange objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example stops the specified instance.

### Sample Request

```
https://ec2.amazonaws.com/?Action=StopInstances
&InstanceId.1=i-1234567890abcdef0
&AUTHPARAMS
```

### Sample Response

```
<StopInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <currentState>
          <code>64</code>
          <name>stopping</name>
      </currentState>
      <previousState>
          <code>16</code>
          <name>running</name>
      </previousState>
    </item>
  </instancesSet>
</StopInstancesResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2

- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# TerminateClientVpnConnections

Terminates active Client VPN endpoint connections. This action can be used to terminate a specific client connection, or up to five connections established by a specific user.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientVpnEndpointId**

The ID of the Client VPN endpoint to which the client is connected.

Type: String

Required: Yes

**ConnectionId**

The ID of the client connection to be terminated.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Username**

The name of the user who initiated the connection. Use this option to terminate all active connections for the specified user. This option can only be used if the user has established up to five connections.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**clientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

**connectionStatuses**

The current state of the client connections.

Type: Array of TerminateConnectionStatus objects

**requestId**

The ID of the request.

Type: String

**username**

The user who established the terminated client connections.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example terminates a Client VPN endpoint connection.

**Sample Request**

```
https://ec2.amazonaws.com/?Action=TerminateClientVpnConnections
```

```
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&ConnectionId=cvpn-connection-010b1282b7EXAMPLE
&AUTHPARAMS
```

### Sample Response

```
<TerminateClientVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
 <clientVpnEndpointId>cvpn-endpoint-00c5d11fc4EXAMPLE</clientVpnEndpointId>
 <connectionStatuses>
  <Item>
   <connectionId>cvpn-connection-010b1282b7EXAMPLE</connectionId>
         <currentStatus>
    <code>terminating</code>
         </currentStatus>
         <previousStatus>
          <code>active</code>
         </previousStatus>
        </Item>
    </connectionStatuses>
 <requestId>00d80748-708d-40f7-8635-f34acEXAMPLE</requestId>
</TerminateClientVpnConnectionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# TerminateInstances

Terminates (deletes) the specified instances. This operation is idempotent; if you terminate an instance more than once, each call succeeds.

> **Important**
>
> **Terminating an instance is permanent and irreversible.**
> After you terminate an instance, you can no longer connect to it, and it can't be recovered. All attached Amazon EBS volumes that are configured to be deleted on termination are also permanently deleted and can't be recovered. All data stored on instance store volumes is permanently lost. For more information, see How instance termination works.
> Before you terminate an instance, ensure that you have backed up all data that you need to retain after the termination to persistent storage.

If you specify multiple instances and the request fails (for example, because of a single incorrect instance ID), none of the instances are terminated.

If you terminate multiple instances across multiple Availability Zones, and one or more of the specified instances are enabled for termination protection, the request fails with the following results:

- The specified instances that are in the same Availability Zone as the protected instance are not terminated.
- The specified instances that are in different Availability Zones, where no other specified instances are protected, are successfully terminated.

For example, say you have the following instances:

- Instance A: `us-east-1a`; Not protected
- Instance B: `us-east-1a`; Not protected
- Instance C: `us-east-1b`; Protected
- Instance D: `us-east-1b`; not protected

If you attempt to terminate all of these instances in the same request, the request reports failure with the following results:

- Instance A and Instance B are successfully terminated because none of the specified instances in `us-east-1a` are enabled for termination protection.
- Instance C and Instance D fail to terminate because at least one of the specified instances in `us-east-1b` (Instance C) is enabled for termination protection.

Terminated instances remain visible after termination (for approximately one hour).

By default, Amazon EC2 deletes all EBS volumes that were attached when the instance launched. Volumes attached after instance launch continue running.

By default, the TerminateInstances operation includes a graceful operating system (OS) shutdown. To bypass the graceful shutdown, use the `skipOsShutdown` parameter; however, this might risk data integrity.

You can stop, start, and terminate EBS-backed instances. You can only terminate instance store-backed instances. What happens to an instance differs if you stop or terminate it. For example, when you stop an instance, the root device and any other devices attached to the instance persist. When you terminate an instance, any attached EBS volumes with the `DeleteOnTermination` block device mapping parameter set to `true` are automatically deleted. For more information about the differences between stopping and terminating instances, see Amazon EC2 instance state changes in the *Amazon EC2 User Guide*.

When you terminate an instance, we attempt to terminate it forcibly after a short while. If your instance appears stuck in the shutting-down state after a period of time, there might be an issue with the underlying host computer. For more information about terminating and troubleshooting terminating your instances, see Terminate Amazon EC2 instances and Troubleshooting terminating your instance in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Force**

Forces the instances to terminate. The instance will first attempt a graceful shutdown, which includes flushing file system caches and metadata. If the graceful shutdown fails to complete within the timeout period, the instance shuts down forcibly without flushing the file system caches and metadata.

Type: Boolean

Required: No

**InstanceId.N**

The IDs of the instances.

Constraints: Up to 1000 instance IDs. We recommend breaking up this request into smaller batches.

Type: Array of strings

Required: Yes

**SkipOsShutdown**

Specifies whether to bypass the graceful OS shutdown process when the instance is terminated.

Default: `false`

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**instancesSet**

Information about the terminated instances.

Type: Array of InstanceStateChange objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example terminates the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=TerminateInstances
&InstanceId.1=i-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<TerminateInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <currentState>
        <code>32</code>
        <name>shutting-down</name>
      </currentState>
      <previousState>
        <code>16</code>
        <name>running</name>
      </previousState>
    </item>
  </instancesSet>
</TerminateInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# UnassignIpv6Addresses

Unassigns the specified IPv6 addresses or Prefix Delegation prefixes from a network interface.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Ipv6Addresses.N**

The IPv6 addresses to unassign from the network interface.

Type: Array of strings

Required: No

**Ipv6Prefix.N**

The IPv6 prefixes to unassign from the network interface.

Type: Array of strings

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**networkInterfaceId**

The ID of the network interface.

Type: String

**requestId**

The ID of the request.

Type: String

**unassignedIpv6Addresses**

The IPv6 addresses that have been unassigned from the network interface.

Type: Array of strings

**unassignedIpv6PrefixSet**

The IPv6 prefixes that have been unassigned from the network interface.

Type: Array of strings

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

The following example unassigns two IPv6 addresses from the specified network interface.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=UnassignIpv6Addresses
&NetworkInterfaceId=eni-197d9972
&Ipv6Addresses.1=2001:db8:1234:1a00::123
&Ipv6Addresses.2=2001:db8:1234:1a00::456
&AUTHPARAMS
```

#### Sample Response

```
<UnassignIpv6AddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>94d446d7-fc8e-4918-94f9-example</requestId>
    <networkInterfaceId>eni-197d9972</networkInterfaceId>
    <unassignedIpv6Addresses>
```

```
        <item>2001:db8:1234:1a00::123</item>
        <item>2001:db8:1234:1a00::456</item>
    </unassignedIpv6Addresses>
</UnassignIpv6AddressesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# UnassignPrivateIpAddresses

Unassigns the specified secondary private IP addresses or IPv4 Prefix Delegation prefixes from a network interface.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Ipv4Prefix.N**

The IPv4 prefixes to unassign from the network interface.

Type: Array of strings

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

**PrivateIpAddress.N**

The secondary private IP addresses to unassign from the network interface. You can specify this option multiple times to unassign more than one IP address.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

The following example unassigns two secondary private IP addresses from the specified network interface.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=UnassignPrivateIpAddresses
&NetworkInterfaceId=eni-197d9972
&PrivateIpAddress.1=10.0.2.60
&PrivateIpAddress.2=10.0.2.65
&AUTHPARAMS
```

#### Sample Response

```
<UnassignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <return>true</return>
</UnassignPrivateIpAddresses>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2

- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# UnassignPrivateNatGatewayAddress

Unassigns secondary private IPv4 addresses from a private NAT gateway. You cannot unassign your primary private IP. For more information, see Edit secondary IP address associations in the *Amazon VPC User Guide*.

While unassigning is in progress, you cannot assign/unassign additional IP addresses while the connections are being drained. You are, however, allowed to delete the NAT gateway.

A private IP address will only be released at the end of MaxDrainDurationSeconds. The private IP addresses stay associated and support the existing connections, but do not support any new connections (new connections are distributed across the remaining assigned private IP address). After the existing connections drain out, the private IP addresses are released.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**MaxDrainDurationSeconds**

The maximum amount of time to wait (in seconds) before forcibly releasing the IP addresses if connections are still in progress. Default value is 350 seconds.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 4000.

Required: No

**NatGatewayId**

The ID of the NAT gateway.

Type: String

Required: Yes

**PrivateIpAddress.N**

The private IPv4 addresses you want to unassign.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**natGatewayAddressSet**

Information about the NAT gateway IP addresses.

Type: Array of NatGatewayAddress objects

**natGatewayId**

The ID of the NAT gateway.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# UnlockSnapshot

Unlocks a snapshot that is locked in governance mode or that is locked in compliance mode but still in the cooling-off period. You can't unlock a snapshot that is locked in compliance mode after the cooling-off period has expired.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SnapshotId**

The ID of the snapshot to unlock.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**snapshotId**

The ID of the snapshot.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# UnmonitorInstances

Disables detailed monitoring for a running instance. For more information, see Monitoring your instances and volumes in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the operation, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceId.N**

The IDs of the instances.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

**instancesSet**

The monitoring information.

Type: Array of InstanceMonitoring objects

**requestId**

The ID of the request.

Type: String

# Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example

This example disables detailed monitoring for the specified instances.

### Sample Request

```
https://ec2.amazonaws.com/?Action=UnmonitorInstances
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS
```

### Sample Response

```
<UnmonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
   <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
   <instancesSet>
      <item>
         <instanceId>i-1234567890abcdef0</instanceId>
         <monitoring>
            <state>disabled</state>
         </monitoring>
      </item>
      <item>
         <instanceId>i-0598c7d356eba48d7</instanceId>
         <monitoring>
            <state>disabled</state>
         </monitoring>
      </item>
   </instancesSet>
</UnmonitorInstancesResponse>
```

# See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# UpdateCapacityManagerMonitoredTagKeys

Activates or deactivates tag keys for monitoring by EC2 Capacity Manager. Activated tag keys are included as dimensions in capacity metric data, enabling you to group and filter metrics by tag values.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ActivateTagKey.N**

The tag keys to activate for monitoring. Once activated, these tag keys will be included as dimensions in capacity metric data.

Type: Array of strings

Required: No

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

Required: No

**DeactivateTagKey.N**

The tag keys to deactivate. Deactivated tag keys will no longer be included as dimensions in capacity metric data.

Type: Array of strings

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**capacityManagerTagKeySet**

The list of tag keys affected by the update, including their current status and metadata.

Type: Array of CapacityManagerMonitoredTagKey objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example activates the `Environment` and `CostCenter` tag keys for monitoring, and deactivates the `Team` tag key.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=UpdateCapacityManagerMonitoredTagKeys
&ActivateTagKey.1=Environment
&ActivateTagKey.2=CostCenter
&DeactivateTagKey.1=Team
&AUTHPARAMS
```

#### Sample Response

```
<UpdateCapacityManagerMonitoredTagKeysResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
```

```
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <capacityManagerTagKeySet>
        <item>
            <tagKey>Environment</tagKey>
            <status>activating</status>
            <statusMessage/>
            <capacityManagerProvided>false</capacityManagerProvided>
        </item>
        <item>
            <tagKey>CostCenter</tagKey>
            <status>activating</status>
            <statusMessage/>
            <capacityManagerProvided>false</capacityManagerProvided>
        </item>
        <item>
            <tagKey>Team</tagKey>
            <status>deactivating</status>
            <statusMessage/>
            <capacityManagerProvided>false</capacityManagerProvided>
        </item>
    </capacityManagerTagKeySet>
</UpdateCapacityManagerMonitoredTagKeysResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# UpdateCapacityManagerOrganizationsAccess

Updates the Organizations access setting for EC2 Capacity Manager. This controls whether Capacity Manager can aggregate data from all accounts in your AWS Organization or only from the current account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**OrganizationsAccess**

Specifies whether to enable or disable cross-account access for AWS Organizations. When enabled, Capacity Manager aggregates data from all accounts in your organization.

Type: Boolean

Required: Yes

## Response Elements

The following elements are returned by the service.

**capacityManagerStatus**

The current status of Capacity Manager after the update operation.

Type: String

Valid Values: `enabled | disabled`

**organizationsAccess**

The updated Organizations access setting indicating whether cross-account data aggregation is enabled.

Type: Boolean

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example enables Organizations access for cross-account data aggregation.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=UpdateCapacityManagerOrganizationsAccess
&OrganizationsAccess=true
&AUTHPARAMS
```

#### Sample Response

```
<UpdateCapacityManagerOrganizationsAccessResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
```

```
    <capacityManagerStatus>enabled</capacityManagerStatus>
    <organizationsAccess>true</organizationsAccess>
</UpdateCapacityManagerOrganizationsAccessResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# UpdateInterruptibleCapacityReservationAllocation

Modifies the number of instances allocated to an interruptible reservation, allowing you to add more capacity or reclaim capacity to your source Capacity Reservation.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**CapacityReservationId**

The ID of the source Capacity Reservation containing the interruptible allocation to modify.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response.

Type: Boolean

Required: No

**TargetInstanceCount**

The new number of instances to allocate. Enter a higher number to add more capacity to share, or a lower number to reclaim capacity to your source Capacity Reservation.

Type: Integer

Required: Yes

## Response Elements

The following elements are returned by the service.

**instanceCount**

The current number of instances allocated to the interruptible reservation.

Type: Integer

**interruptibleCapacityReservationId**

The ID of the interruptible Capacity Reservation that was modified.

Type: String

**interruptionType**

The interruption type for the interruptible reservation.

Type: String

Valid Values: adhoc

**requestId**

The ID of the request.

Type: String

**sourceCapacityReservationId**

The ID of the source Capacity Reservation to which capacity was reclaimed or from which capacity was allocated.

Type: String

**status**

The current status of the allocation (updating during reclamation, active when complete).

Type: String

Valid Values: `pending | active | updating | canceling | canceled | failed`

**targetInstanceCount**

The requested number of instances for the interruptible Capacity Reservation.

Type: Integer

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# UpdateSecurityGroupRuleDescriptionsEgress

Updates the description of an egress (outbound) security group rule. You can replace an existing description, or add a description to a rule that did not have one previously. You can remove a description for a security group rule by omitting the description parameter in the request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupId**

The ID of the security group. You must specify either the security group ID or the security group name in the request. For security groups in a nondefault VPC, you must specify the security group ID.

Type: String

Required: No

**GroupName**

[Default VPC] The name of the security group. You must specify either the security group ID or the security group name.

Type: String

Required: No

**IpPermissions.N**

The IP permissions for the security group rule. You must specify either the IP permissions or the description.

Type: Array of IpPermission objects

Required: No

**SecurityGroupRuleDescription.N**

The description for the egress security group rules. You must specify either the description or the IP permissions.

Type: Array of SecurityGroupRuleDescription objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## Examples

### Example

This example updates the description for the security group rule that allows outbound access over port 80 to the `205.192.0.0/16` IPv4 address range. The description '`Outbound HTTP access to server 2`' replaces any existing description for the rule.

### Sample Request

```
https://ec2.amazonaws.com/?Action=UpdateSecurityGroupRuleDescriptionsEgress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&IpPermissions.1.IpRanges.1.Description=Outbound HTTP access to server 2
&AUTHPARAMS
```

### Sample Response

```
<UpdateSecurityGroupRuleDescriptionsEgressResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>1480cf25-4fbe-4168-aa9c-365example</requestId>
    <return>true</return>
</UpdateSecurityGroupRuleDescriptionsEgressResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# UpdateSecurityGroupRuleDescriptionsIngress

Updates the description of an ingress (inbound) security group rule. You can replace an existing description, or add a description to a rule that did not have one previously. You can remove a description for a security group rule by omitting the description parameter in the request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**GroupId**

The ID of the security group. You must specify either the security group ID or the security group name in the request. For security groups in a nondefault VPC, you must specify the security group ID.

Type: String

Required: No

**GroupName**

[Default VPC] The name of the security group. You must specify either the security group ID or the security group name. For security groups in a nondefault VPC, you must specify the security group ID.

Type: String

Required: No

**IpPermissions.N**

The IP permissions for the security group rule. You must specify either IP permissions or a description.

Type: Array of IpPermission objects

Required: No

**SecurityGroupRuleDescription.N**

The description for the ingress security group rules. You must specify either a description or IP permissions.

Type: Array of SecurityGroupRuleDescription objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see Common Error Types.

# Examples

## Example 1

This example updates the description for the security group rule that allows inbound access over port 22 from the `203.0.113.0/16` IPv4 address range. The description '`SSH access from ABC office`' replaces any existing description for the rule.

### Sample Request

```
https://ec2.amazonaws.com/?Action=UpdateSecurityGroupRuleDescriptionsIngress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.IpRanges.1.CidrIp=203.0.113.0/16
&IpPermissions.1.IpRanges.1.Description=SSH access from ABC office
&AUTHPARAMS
```

### Sample Response

```
<UpdateSecurityGroupRuleDescriptionsIngressResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>b4a57536-2e4a-4cbe-82f0-399example</requestId>
    <return>true</return>
</UpdateSecurityGroupRuleDescriptionsIngressResponse>
```

## Example 2

This example removes the description for the specified security group rule.

### Sample Request

```
https://ec2.amazonaws.com/?Action=UpdateSecurityGroupRuleDescriptionsIngress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.IpRanges.1.CidrIp=203.0.113.4/32
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# WithdrawByoipCidr

Stops advertising an address range that is provisioned as an address pool.

You can perform this operation at most once every 10 seconds, even if you specify different address ranges each time.

It can take a few minutes before traffic to the specified addresses stops routing to AWS because of BGP propagation delays.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see Common Query Parameters.

**Cidr**

The address range, in CIDR notation.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**byoipCidr**

Information about the address pool.

Type: ByoipCidr object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Error Types.

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS Command Line Interface V2
- AWS SDK for .NET V4
- AWS SDK for C++
- AWS SDK for Go v2
- AWS SDK for Java V2
- AWS SDK for JavaScript V3
- AWS SDK for Kotlin
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3

# Data Types

The Amazon Elastic Compute Cloud API contains several data types that various actions use. This section describes each data type in detail.

> **Note**
>
> The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- AcceleratorCount
- AcceleratorCountRequest
- AcceleratorTotalMemoryMiB
- AcceleratorTotalMemoryMiBRequest
- AccessScopeAnalysisFinding
- AccessScopePath
- AccessScopePathRequest
- AccountAttribute
- AccountAttributeValue
- ActiveInstance
- ActiveVpnTunnelStatus
- AddedPrincipal
- AddIpamOperatingRegion
- AddIpamOrganizationalUnitExclusion
- AdditionalDetail
- AddPrefixListEntry
- Address
- AddressAttribute
- AddressTransfer
- AllowedPrincipal

- AlternatePathHint
- AnalysisAclRule
- AnalysisComponent
- AnalysisLoadBalancerListener
- AnalysisLoadBalancerTarget
- AnalysisPacketHeader
- AnalysisRouteTableRoute
- AnalysisSecurityGroupRule
- AsnAssociation
- AsnAuthorizationContext
- AssignedPrivateIpAddress
- AssociatedRole
- AssociatedTargetNetwork
- AssociationStatus
- AthenaIntegration
- AttachmentEnaSrdSpecification
- AttachmentEnaSrdUdpSpecification
- AttributeBooleanValue
- AttributeSummary
- AttributeValue
- AuthorizationRule
- AvailabilityZone
- AvailabilityZoneAddress
- AvailabilityZoneGeography
- AvailabilityZoneMessage
- AvailabilityZoneSubGeography
- AvailableCapacity
- BaselineEbsBandwidthMbps
- BaselineEbsBandwidthMbpsRequest
- BaselinePerformanceFactors

- BaselinePerformanceFactorsRequest
- BlockDeviceMapping
- BlockDeviceMappingResponse
- BlockPublicAccessStates
- BundleTask
- BundleTaskError
- Byoasn
- ByoipCidr
- CancelCapacityReservationFleetError
- CancellationTerms
- CancelledSpotInstanceRequest
- CancelSpotFleetRequestsError
- CancelSpotFleetRequestsErrorItem
- CancelSpotFleetRequestsSuccessItem
- CapacityAllocation
- CapacityAllocationMetadataEntry
- CapacityBlock
- CapacityBlockExtension
- CapacityBlockExtensionOffering
- CapacityBlockOffering
- CapacityBlockStatus
- CapacityManagerCondition
- CapacityManagerDataExportResponse
- CapacityManagerDimension
- CapacityManagerMonitoredTagKey
- CapacityManagerTagDimension
- CapacityReservation
- CapacityReservationBillingRequest
- CapacityReservationCancellationQuote
- CapacityReservationCommitmentInfo

- CapacityReservationConfiguration
- CapacityReservationFleet
- CapacityReservationFleetCancellationState
- CapacityReservationGroup
- CapacityReservationInfo
- CapacityReservationOptions
- CapacityReservationOptionsRequest
- CapacityReservationSpecification
- CapacityReservationSpecificationResponse
- CapacityReservationStatus
- CapacityReservationTarget
- CapacityReservationTargetResponse
- CapacityReservationTopology
- CarrierGateway
- CertificateAuthentication
- CertificateAuthenticationRequest
- CidrAuthorizationContext
- CidrBlock
- ClassicLinkDnsSupport
- ClassicLinkInstance
- ClassicLoadBalancer
- ClassicLoadBalancersConfig
- ClientCertificateRevocationListStatus
- ClientConnectOptions
- ClientConnectResponseOptions
- ClientData
- ClientLoginBannerOptions
- ClientLoginBannerResponseOptions
- ClientRouteEnforcementOptions
- ClientRouteEnforcementResponseOptions

- ClientVpnAuthentication
- ClientVpnAuthenticationRequest
- ClientVpnAuthorizationRuleStatus
- ClientVpnConnection
- ClientVpnConnectionStatus
- ClientVpnEndpoint
- ClientVpnEndpointAttributeStatus
- ClientVpnEndpointStatus
- ClientVpnRoute
- ClientVpnRouteStatus
- CloudWatchLogOptions
- CloudWatchLogOptionsSpecification
- CoipAddressUsage
- CoipCidr
- CoipPool
- ConnectionLogOptions
- ConnectionLogResponseOptions
- ConnectionNotification
- ConnectionTrackingConfiguration
- ConnectionTrackingSpecification
- ConnectionTrackingSpecificationRequest
- ConnectionTrackingSpecificationResponse
- ConversionTask
- CpuOptions
- CpuOptionsRequest
- CpuPerformanceFactor
- CpuPerformanceFactorRequest
- CreateFleetError
- CreateFleetInstance
- CreateTransitGatewayConnectRequestOptions

- CreateTransitGatewayMulticastDomainRequestOptions
- CreateTransitGatewayPeeringAttachmentRequestOptions
- CreateTransitGatewayVpcAttachmentRequestOptions
- CreateVerifiedAccessEndpointCidrOptions
- CreateVerifiedAccessEndpointEniOptions
- CreateVerifiedAccessEndpointLoadBalancerOptions
- CreateVerifiedAccessEndpointPortRange
- CreateVerifiedAccessEndpointRdsOptions
- CreateVerifiedAccessNativeApplicationOidcOptions
- CreateVerifiedAccessTrustProviderDeviceOptions
- CreateVerifiedAccessTrustProviderOidcOptions
- CreateVolumePermission
- CreateVolumePermissionModifications
- CreationDateCondition
- CreationDateConditionRequest
- CreditSpecification
- CreditSpecificationRequest
- CustomerGateway
- DataQuery
- DataResponse
- DeclarativePoliciesReport
- DefaultConnectionTrackingConfiguration
- DeleteFleetError
- DeleteFleetErrorItem
- DeleteFleetSuccessItem
- DeleteLaunchTemplateVersionsResponseErrorItem
- DeleteLaunchTemplateVersionsResponseSuccessItem
- DeleteQueuedReservedInstancesError
- DeleteSnapshotReturnCode
- DeprecationTimeCondition

- DeprecationTimeConditionRequest
- DeregisterInstanceTagAttributeRequest
- DescribeFastLaunchImagesSuccessItem
- DescribeFastSnapshotRestoreSuccessItem
- DescribeFleetError
- DescribeFleetsInstances
- DestinationOptionsRequest
- DestinationOptionsResponse
- DeviceOptions
- DhcpConfiguration
- DhcpOptions
- DimensionCondition
- DirectoryServiceAuthentication
- DirectoryServiceAuthenticationRequest
- DisableFastSnapshotRestoreErrorItem
- DisableFastSnapshotRestoreStateError
- DisableFastSnapshotRestoreStateErrorItem
- DisableFastSnapshotRestoreSuccessItem
- DiskImage
- DiskImageDescription
- DiskImageDetail
- DiskImageVolumeDescription
- DiskInfo
- DnsEntry
- DnsOptions
- DnsOptionsSpecification
- DnsServersOptionsModifyStructure
- EbsBlockDevice
- EbsBlockDeviceResponse
- EbsCardInfo

- EbsInfo
- EbsInstanceBlockDevice
- EbsInstanceBlockDeviceSpecification
- EbsOptimizedInfo
- EbsStatusDetails
- EbsStatusSummary
- Ec2InstanceConnectEndpoint
- EfaInfo
- EgressOnlyInternetGateway
- ElasticGpuAssociation
- ElasticGpuHealth
- ElasticGpus
- ElasticGpuSpecification
- ElasticGpuSpecificationResponse
- ElasticInferenceAccelerator
- ElasticInferenceAcceleratorAssociation
- EnableFastSnapshotRestoreErrorItem
- EnableFastSnapshotRestoreStateError
- EnableFastSnapshotRestoreStateErrorItem
- EnableFastSnapshotRestoreSuccessItem
- EnaSrdSpecification
- EnaSrdSpecificationRequest
- EnaSrdUdpSpecification
- EnaSrdUdpSpecificationRequest
- EnclaveOptions
- EnclaveOptionsRequest
- EncryptionSupport
- EventInformation
- Explanation
- ExportImageTask

- ExportTask
- ExportTaskS3Location
- ExportTaskS3LocationRequest
- ExportToS3Task
- ExportToS3TaskSpecification
- ExternalAuthorityConfiguration
- FailedCapacityReservationFleetCancellationResult
- FailedQueuedPurchaseDeletion
- FastLaunchLaunchTemplateSpecificationRequest
- FastLaunchLaunchTemplateSpecificationResponse
- FastLaunchSnapshotConfigurationRequest
- FastLaunchSnapshotConfigurationResponse
- FederatedAuthentication
- FederatedAuthenticationRequest
- Filter
- FilterPortRange
- FirewallStatefulRule
- FirewallStatelessRule
- FleetBlockDeviceMappingRequest
- FleetCapacityReservation
- FleetData
- FleetEbsBlockDeviceRequest
- FleetLaunchTemplateConfig
- FleetLaunchTemplateConfigRequest
- FleetLaunchTemplateOverrides
- FleetLaunchTemplateOverridesRequest
- FleetLaunchTemplateSpecification
- FleetLaunchTemplateSpecificationRequest
- FleetSpotCapacityRebalance
- FleetSpotCapacityRebalanceRequest

- FleetSpotMaintenanceStrategies
- FleetSpotMaintenanceStrategiesRequest
- FlowLog
- FpgaDeviceInfo
- FpgaDeviceMemoryInfo
- FpgaImage
- FpgaImageAttribute
- FpgaImageState
- FpgaInfo
- GpuDeviceInfo
- GpuDeviceMemoryInfo
- GpuInfo
- GroupIdentifier
- HibernationOptions
- HibernationOptionsRequest
- HistoryRecord
- HistoryRecordEntry
- Host
- HostInstance
- HostOffering
- HostProperties
- HostReservation
- IamInstanceProfile
- IamInstanceProfileAssociation
- IamInstanceProfileSpecification
- IcmpTypeCode
- IdFormat
- IKEVersionsListValue
- IKEVersionsRequestListValue
- Image

- ImageAncestryEntry
- ImageCriterion
- ImageCriterionRequest
- ImageDiskContainer
- ImageMetadata
- ImageRecycleBinInfo
- ImageReference
- ImageUsageReport
- ImageUsageReportEntry
- ImageUsageResourceType
- ImageUsageResourceTypeOption
- ImageUsageResourceTypeOptionRequest
- ImageUsageResourceTypeRequest
- ImageWatermark
- ImportImageLicenseConfigurationRequest
- ImportImageLicenseConfigurationResponse
- ImportImageTask
- ImportInstanceLaunchSpecification
- ImportInstanceTaskDetails
- ImportInstanceVolumeDetailItem
- ImportSnapshotTask
- ImportVolumeTaskDetails
- InferenceAcceleratorInfo
- InferenceDeviceInfo
- InferenceDeviceMemoryInfo
- InitializationStatusDetails
- Instance
- InstanceAttachmentEnaSrdSpecification
- InstanceAttachmentEnaSrdUdpSpecification
- InstanceBlockDeviceMapping

- InstanceBlockDeviceMappingSpecification
- InstanceCapacity
- InstanceConnectEndpointDnsNames
- InstanceConnectEndpointPublicDnsNames
- InstanceCount
- InstanceCreditSpecification
- InstanceCreditSpecificationRequest
- InstanceEventWindow
- InstanceEventWindowAssociationRequest
- InstanceEventWindowAssociationTarget
- InstanceEventWindowDisassociationRequest
- InstanceEventWindowStateChange
- InstanceEventWindowTimeRange
- InstanceEventWindowTimeRangeRequest
- InstanceExportDetails
- InstanceFamilyCreditSpecification
- InstanceImageMetadata
- InstanceIpv4Prefix
- InstanceIpv6Address
- InstanceIpv6AddressRequest
- InstanceIpv6Prefix
- InstanceMaintenanceOptions
- InstanceMaintenanceOptionsRequest
- InstanceMarketOptionsRequest
- InstanceMetadataDefaultsResponse
- InstanceMetadataOptionsRequest
- InstanceMetadataOptionsResponse
- InstanceMonitoring
- InstanceNetworkInterface
- InstanceNetworkInterfaceAssociation

- InstanceNetworkInterfaceAttachment
- InstanceNetworkInterfaceSpecification
- InstanceNetworkPerformanceOptions
- InstanceNetworkPerformanceOptionsRequest
- InstancePrivateIpAddress
- InstanceRequirements
- InstanceRequirementsRequest
- InstanceRequirementsWithMetadataRequest
- InstanceSecondaryInterface
- InstanceSecondaryInterfaceAttachment
- InstanceSecondaryInterfacePrivateIpAddress
- InstanceSecondaryInterfacePrivateIpAddressRequest
- InstanceSecondaryInterfaceSpecificationRequest
- InstanceSpecification
- InstanceState
- InstanceStateChange
- InstanceStatus
- InstanceStatusDetails
- InstanceStatusEvent
- InstanceStatusSummary
- InstanceStorageInfo
- InstanceTagNotificationAttribute
- InstanceTopology
- InstanceTypeInfo
- InstanceTypeInfoFromInstanceRequirements
- InstanceTypeOffering
- InstanceUsage
- IntegrateServices
- InternetGateway
- InternetGatewayAttachment

- InterruptibleCapacityAllocation
- InterruptionInfo
- Ipam
- IpamAddressHistoryRecord
- IpamCidrAuthorizationContext
- IpamDiscoveredAccount
- IpamDiscoveredPublicAddress
- IpamDiscoveredResourceCidr
- IpamDiscoveryFailureReason
- IpamExternalResourceVerificationToken
- IpamOperatingRegion
- IpamOrganizationalUnitExclusion
- IpamPolicy
- IpamPolicyAllocationRule
- IpamPolicyAllocationRuleRequest
- IpamPolicyDocument
- IpamPolicyOrganizationTarget
- IpamPool
- IpamPoolAllocation
- IpamPoolCidr
- IpamPoolCidrFailureReason
- IpamPoolSourceResource
- IpamPoolSourceResourceRequest
- IpamPrefixListResolver
- IpamPrefixListResolverRule
- IpamPrefixListResolverRuleCondition
- IpamPrefixListResolverRuleConditionRequest
- IpamPrefixListResolverRuleRequest
- IpamPrefixListResolverTarget
- IpamPrefixListResolverVersion

- IpamPrefixListResolverVersionEntry
- IpamPublicAddressSecurityGroup
- IpamPublicAddressTag
- IpamPublicAddressTags
- IpamResourceCidr
- IpamResourceDiscovery
- IpamResourceDiscoveryAssociation
- IpamResourceTag
- IpamScope
- IpamScopeExternalAuthorityConfiguration
- IpPermission
- IpRange
- Ipv4PrefixSpecification
- Ipv4PrefixSpecificationRequest
- Ipv4PrefixSpecificationResponse
- Ipv6CidrAssociation
- Ipv6CidrBlock
- Ipv6Pool
- Ipv6PrefixSpecification
- Ipv6PrefixSpecificationRequest
- Ipv6PrefixSpecificationResponse
- Ipv6Range
- KeyPairInfo
- LastError
- LaunchPermission
- LaunchPermissionModifications
- LaunchSpecification
- LaunchTemplate
- LaunchTemplateAndOverridesResponse
- LaunchTemplateBlockDeviceMapping

- LaunchTemplateBlockDeviceMappingRequest
- LaunchTemplateCapacityReservationSpecificationRequest
- LaunchTemplateCapacityReservationSpecificationResponse
- LaunchTemplateConfig
- LaunchTemplateCpuOptions
- LaunchTemplateCpuOptionsRequest
- LaunchTemplateEbsBlockDevice
- LaunchTemplateEbsBlockDeviceRequest
- LaunchTemplateElasticInferenceAccelerator
- LaunchTemplateElasticInferenceAcceleratorResponse
- LaunchTemplateEnaSrdSpecification
- LaunchTemplateEnaSrdUdpSpecification
- LaunchTemplateEnclaveOptions
- LaunchTemplateEnclaveOptionsRequest
- LaunchTemplateHibernationOptions
- LaunchTemplateHibernationOptionsRequest
- LaunchTemplateIamInstanceProfileSpecification
- LaunchTemplateIamInstanceProfileSpecificationRequest
- LaunchTemplateInstanceMaintenanceOptions
- LaunchTemplateInstanceMaintenanceOptionsRequest
- LaunchTemplateInstanceMarketOptions
- LaunchTemplateInstanceMarketOptionsRequest
- LaunchTemplateInstanceMetadataOptions
- LaunchTemplateInstanceMetadataOptionsRequest
- LaunchTemplateInstanceNetworkInterfaceSpecification
- LaunchTemplateInstanceNetworkInterfaceSpecificationRequest
- LaunchTemplateInstanceSecondaryInterfaceSpecification
- LaunchTemplateInstanceSecondaryInterfaceSpecificationRequest
- LaunchTemplateLicenseConfiguration
- LaunchTemplateLicenseConfigurationRequest

- LaunchTemplateNetworkPerformanceOptions
- LaunchTemplateNetworkPerformanceOptionsRequest
- LaunchTemplateOverrides
- LaunchTemplatePlacement
- LaunchTemplatePlacementRequest
- LaunchTemplatePrivateDnsNameOptions
- LaunchTemplatePrivateDnsNameOptionsRequest
- LaunchTemplatesMonitoring
- LaunchTemplatesMonitoringRequest
- LaunchTemplateSpecification
- LaunchTemplateSpotMarketOptions
- LaunchTemplateSpotMarketOptionsRequest
- LaunchTemplateTagSpecification
- LaunchTemplateTagSpecificationRequest
- LaunchTemplateVersion
- LicenseConfiguration
- LicenseConfigurationRequest
- LoadBalancersConfig
- LoadPermission
- LoadPermissionModifications
- LoadPermissionRequest
- LocalGateway
- LocalGatewayRoute
- LocalGatewayRouteTable
- LocalGatewayRouteTableVirtualInterfaceGroupAssociation
- LocalGatewayRouteTableVpcAssociation
- LocalGatewayVirtualInterface
- LocalGatewayVirtualInterfaceGroup
- LockedSnapshotsInfo
- MacHost

- MacModificationTask
- MacSystemIntegrityProtectionConfiguration
- MacSystemIntegrityProtectionConfigurationRequest
- MaintenanceDetails
- ManagedPrefixList
- ManagedResourceVisibilitySettings
- MediaAcceleratorInfo
- MediaDeviceInfo
- MediaDeviceMemoryInfo
- MemoryGiBPerVCpu
- MemoryGiBPerVCpuRequest
- MemoryInfo
- MemoryMiB
- MemoryMiBRequest
- MetricDataResult
- MetricPoint
- MetricValue
- ModifyTransitGatewayOptions
- ModifyTransitGatewayVpcAttachmentRequestOptions
- ModifyVerifiedAccessEndpointCidrOptions
- ModifyVerifiedAccessEndpointEniOptions
- ModifyVerifiedAccessEndpointLoadBalancerOptions
- ModifyVerifiedAccessEndpointPortRange
- ModifyVerifiedAccessEndpointRdsOptions
- ModifyVerifiedAccessNativeApplicationOidcOptions
- ModifyVerifiedAccessTrustProviderDeviceOptions
- ModifyVerifiedAccessTrustProviderOidcOptions
- ModifyVpnTunnelOptionsSpecification
- Monitoring
- MovingAddressStatus

- NatGateway
- NatGatewayAddress
- NatGatewayAttachedAppliance
- NativeApplicationOidcOptions
- NetworkAcl
- NetworkAclAssociation
- NetworkAclEntry
- NetworkBandwidthGbps
- NetworkBandwidthGbpsRequest
- NetworkCardInfo
- NetworkInfo
- NetworkInsightsAccessScope
- NetworkInsightsAccessScopeAnalysis
- NetworkInsightsAccessScopeContent
- NetworkInsightsAnalysis
- NetworkInsightsPath
- NetworkInterface
- NetworkInterfaceAssociation
- NetworkInterfaceAttachment
- NetworkInterfaceAttachmentChanges
- NetworkInterfaceCount
- NetworkInterfaceCountRequest
- NetworkInterfaceIpv6Address
- NetworkInterfacePermission
- NetworkInterfacePermissionState
- NetworkInterfacePrivateIpAddress
- NeuronDeviceCoreInfo
- NeuronDeviceInfo
- NeuronDeviceMemoryInfo
- NeuronInfo

- NewDhcpConfiguration
- NitroTpmInfo
- OidcOptions
- OnDemandOptions
- OnDemandOptionsRequest
- OperatorRequest
- OperatorResponse
- OutpostLag
- PacketHeaderStatement
- PacketHeaderStatementRequest
- PathComponent
- PathFilter
- PathRequestFilter
- PathStatement
- PathStatementRequest
- PciId
- PeeringAttachmentStatus
- PeeringConnectionOptions
- PeeringConnectionOptionsRequest
- PeeringTgwInfo
- PerformanceFactorReference
- PerformanceFactorReferenceRequest
- Phase1DHGroupNumbersListValue
- Phase1DHGroupNumbersRequestListValue
- Phase1EncryptionAlgorithmsListValue
- Phase1EncryptionAlgorithmsRequestListValue
- Phase1IntegrityAlgorithmsListValue
- Phase1IntegrityAlgorithmsRequestListValue
- Phase2DHGroupNumbersListValue
- Phase2DHGroupNumbersRequestListValue

- Phase2EncryptionAlgorithmsListValue
- Phase2EncryptionAlgorithmsRequestListValue
- Phase2IntegrityAlgorithmsListValue
- Phase2IntegrityAlgorithmsRequestListValue
- Placement
- PlacementGroup
- PlacementGroupInfo
- PlacementResponse
- PoolCidrBlock
- PortRange
- PrefixList
- PrefixListAssociation
- PrefixListEntry
- PrefixListId
- PriceSchedule
- PriceScheduleSpecification
- PricingDetail
- PrincipalIdFormat
- PrivateDnsDetails
- PrivateDnsNameConfiguration
- PrivateDnsNameOptionsOnLaunch
- PrivateDnsNameOptionsRequest
- PrivateDnsNameOptionsResponse
- PrivateIpAddressSpecification
- ProcessorInfo
- ProductCode
- PropagatingVgw
- ProvisionedBandwidth
- PtrUpdateStatus
- PublicIpDnsNameOptions

- PublicIpv4Pool
- PublicIpv4PoolRange
- Purchase
- PurchaseRequest
- RecurringCharge
- ReferencedSecurityGroup
- Region
- RegionalSummary
- RegionGeography
- RegisteredInstance
- RegisterInstanceTagAttributeRequest
- RemoveIpamOperatingRegion
- RemoveIpamOrganizationalUnitExclusion
- RemovePrefixListEntry
- ReplaceRootVolumeTask
- RequestFilterPortRange
- RequestIpamResourceTag
- RequestLaunchTemplateData
- RequestSpotLaunchSpecification
- Reservation
- ReservationFleetInstanceSpecification
- ReservationValue
- ReservedCapacityOptions
- ReservedCapacityOptionsRequest
- ReservedInstanceLimitPrice
- ReservedInstanceReservationValue
- ReservedInstances
- ReservedInstancesConfiguration
- ReservedInstancesId
- ReservedInstancesListing

- ReservedInstancesModification
- ReservedInstancesModificationResult
- ReservedInstancesOffering
- ResourceStatement
- ResourceStatementRequest
- ResourceTypeOption
- ResourceTypeRequest
- ResponseError
- ResponseLaunchTemplateData
- RevokedSecurityGroupRule
- Route
- RouteServer
- RouteServerAssociation
- RouteServerBfdStatus
- RouteServerBgpOptions
- RouteServerBgpOptionsRequest
- RouteServerBgpStatus
- RouteServerEndpoint
- RouteServerPeer
- RouteServerPropagation
- RouteServerRoute
- RouteServerRouteInstallationDetail
- RouteTable
- RouteTableAssociation
- RouteTableAssociationState
- RuleGroupRuleOptionsPair
- RuleGroupTypePair
- RuleOption
- RunInstancesMonitoringEnabled
- S3ObjectTag

- S3Storage
- ScheduledInstance
- ScheduledInstanceAvailability
- ScheduledInstanceRecurrence
- ScheduledInstanceRecurrenceRequest
- ScheduledInstancesBlockDeviceMapping
- ScheduledInstancesEbs
- ScheduledInstancesIamInstanceProfile
- ScheduledInstancesIpv6Address
- ScheduledInstancesLaunchSpecification
- ScheduledInstancesMonitoring
- ScheduledInstancesNetworkInterface
- ScheduledInstancesPlacement
- ScheduledInstancesPrivateIpAddressConfig
- SecondaryInterface
- SecondaryInterfaceAttachment
- SecondaryInterfaceIpv4Address
- SecondaryInterfacePrivateIpAddressSpecification
- SecondaryInterfacePrivateIpAddressSpecificationRequest
- SecondaryNetwork
- SecondaryNetworkIpv4CidrBlockAssociation
- SecondarySubnet
- SecondarySubnetIpv4CidrBlockAssociation
- SecureBlobAttributeValue
- SecurityGroup
- SecurityGroupForVpc
- SecurityGroupIdentifier
- SecurityGroupReference
- SecurityGroupRule
- SecurityGroupRuleDescription

- SecurityGroupRuleRequest
- SecurityGroupRuleUpdate
- SecurityGroupVpcAssociation
- ServiceConfiguration
- ServiceDetail
- ServiceLinkVirtualInterface
- ServiceTypeDetail
- SlotDateTimeRangeRequest
- SlotStartTimeRangeRequest
- Snapshot
- SnapshotDetail
- SnapshotDiskContainer
- SnapshotInfo
- SnapshotRecycleBinInfo
- SnapshotTaskDetail
- SnapshotTierStatus
- SpotCapacityRebalance
- SpotDatafeedSubscription
- SpotFleetLaunchSpecification
- SpotFleetMonitoring
- SpotFleetRequestConfig
- SpotFleetRequestConfigData
- SpotFleetTagSpecification
- SpotInstanceRequest
- SpotInstanceStateFault
- SpotInstanceStatus
- SpotMaintenanceStrategies
- SpotMarketOptions
- SpotOptions
- SpotOptionsRequest

- SpotPlacement
- SpotPlacementScore
- SpotPrice
- StaleIpPermission
- StaleSecurityGroup
- StateReason
- Storage
- StorageLocation
- StoreImageTaskResult
- Subnet
- SubnetAssociation
- SubnetCidrBlockState
- SubnetCidrReservation
- SubnetConfiguration
- SubnetIpPrefixes
- SubnetIpv6CidrBlockAssociation
- Subscription
- SuccessfulInstanceCreditSpecificationItem
- SuccessfulQueuedPurchaseDeletion
- SupportedRegionDetail
- Tag
- TagDescription
- TagFieldSpecificationRequest
- TagFieldSpecificationResponse
- TagSpecification
- TargetCapacitySpecification
- TargetCapacitySpecificationRequest
- TargetConfiguration
- TargetConfigurationRequest
- TargetGroup

- TargetGroupsConfig
- TargetNetwork
- TargetReservationValue
- TerminateConnectionStatus
- ThroughResourcesStatement
- ThroughResourcesStatementRequest
- TotalLocalStorageGB
- TotalLocalStorageGBRequest
- TrafficMirrorFilter
- TrafficMirrorFilterRule
- TrafficMirrorPortRange
- TrafficMirrorPortRangeRequest
- TrafficMirrorSession
- TrafficMirrorTarget
- TransitGateway
- TransitGatewayAssociation
- TransitGatewayAttachment
- TransitGatewayAttachmentAssociation
- TransitGatewayAttachmentBgpConfiguration
- TransitGatewayAttachmentPropagation
- TransitGatewayClientVpnAttachment
- TransitGatewayConfigurationDescribeEndpointStructure
- TransitGatewayConfigurationInputStructure
- TransitGatewayConnect
- TransitGatewayConnectOptions
- TransitGatewayConnectPeer
- TransitGatewayConnectPeerConfiguration
- TransitGatewayConnectRequestBgpOptions
- TransitGatewayMeteringPolicy
- TransitGatewayMeteringPolicyEntry

- TransitGatewayMeteringPolicyRule
- TransitGatewayMulticastDeregisteredGroupMembers
- TransitGatewayMulticastDeregisteredGroupSources
- TransitGatewayMulticastDomain
- TransitGatewayMulticastDomainAssociation
- TransitGatewayMulticastDomainAssociations
- TransitGatewayMulticastDomainOptions
- TransitGatewayMulticastGroup
- TransitGatewayMulticastRegisteredGroupMembers
- TransitGatewayMulticastRegisteredGroupSources
- TransitGatewayOptions
- TransitGatewayPeeringAttachment
- TransitGatewayPeeringAttachmentOptions
- TransitGatewayPolicyRule
- TransitGatewayPolicyRuleMetaData
- TransitGatewayPolicyTable
- TransitGatewayPolicyTableAssociation
- TransitGatewayPolicyTableEntry
- TransitGatewayPrefixListAttachment
- TransitGatewayPrefixListReference
- TransitGatewayPropagation
- TransitGatewayRequestOptions
- TransitGatewayRoute
- TransitGatewayRouteAttachment
- TransitGatewayRouteTable
- TransitGatewayRouteTableAnnouncement
- TransitGatewayRouteTableAssociation
- TransitGatewayRouteTablePropagation
- TransitGatewayRouteTableRoute
- TransitGatewayVpcAttachment

- TransitGatewayVpcAttachmentOptions
- TrunkInterfaceAssociation
- TunnelOption
- UnsuccessfulInstanceCreditSpecificationItem
- UnsuccessfulInstanceCreditSpecificationItemError
- UnsuccessfulItem
- UnsuccessfulItemError
- UserBucket
- UserBucketDetails
- UserData
- UserIdGroupPair
- ValidationError
- ValidationWarning
- VCpuCountRange
- VCpuCountRangeRequest
- VCpuInfo
- VerifiedAccessEndpoint
- VerifiedAccessEndpointCidrOptions
- VerifiedAccessEndpointEniOptions
- VerifiedAccessEndpointLoadBalancerOptions
- VerifiedAccessEndpointPortRange
- VerifiedAccessEndpointRdsOptions
- VerifiedAccessEndpointStatus
- VerifiedAccessEndpointTarget
- VerifiedAccessGroup
- VerifiedAccessInstance
- VerifiedAccessInstanceCustomSubDomain
- VerifiedAccessInstanceLoggingConfiguration
- VerifiedAccessInstanceOpenVpnClientConfiguration
- VerifiedAccessInstanceOpenVpnClientConfigurationRoute

- VerifiedAccessInstanceUserTrustProviderClientConfiguration
- VerifiedAccessLogCloudWatchLogsDestination
- VerifiedAccessLogCloudWatchLogsDestinationOptions
- VerifiedAccessLogDeliveryStatus
- VerifiedAccessLogKinesisDataFirehoseDestination
- VerifiedAccessLogKinesisDataFirehoseDestinationOptions
- VerifiedAccessLogOptions
- VerifiedAccessLogs
- VerifiedAccessLogS3Destination
- VerifiedAccessLogS3DestinationOptions
- VerifiedAccessSseSpecificationRequest
- VerifiedAccessSseSpecificationResponse
- VerifiedAccessTrustProvider
- VerifiedAccessTrustProviderCondensed
- VgwTelemetry
- Volume
- VolumeAttachment
- VolumeDetail
- VolumeModification
- VolumeRecycleBinInfo
- VolumeStatusAction
- VolumeStatusAttachmentStatus
- VolumeStatusDetails
- VolumeStatusEvent
- VolumeStatusInfo
- VolumeStatusItem
- Vpc
- VpcAttachment
- VpcBlockPublicAccessExclusion
- VpcBlockPublicAccessOptions

- VpcCidrBlockAssociation
- VpcCidrBlockState
- VpcClassicLink
- VpcEncryptionControl
- VpcEncryptionControlConfiguration
- VpcEncryptionControlExclusion
- VpcEncryptionControlExclusions
- VpcEncryptionNonCompliantResource
- VpcEndpoint
- VpcEndpointAssociation
- VpcEndpointConnection
- VpcIpv6CidrBlockAssociation
- VpcPeeringConnection
- VpcPeeringConnectionOptionsDescription
- VpcPeeringConnectionStateReason
- VpcPeeringConnectionVpcInfo
- VpnConcentrator
- VpnConnection
- VpnConnectionDeviceType
- VpnConnectionOptions
- VpnConnectionOptionsSpecification
- VpnGateway
- VpnStaticRoute
- VpnTunnelLogOptions
- VpnTunnelLogOptionsSpecification
- VpnTunnelOptionsSpecification

# AcceleratorCount

The minimum and maximum number of accelerators (GPUs, FPGAs, or AWS Inferentia chips) on an instance.

## Contents

**Max** (request), **max** (response)

The maximum number of accelerators. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

**Min** (request), **min** (response)

The minimum number of accelerators. If this parameter is not specified, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AcceleratorCountRequest

The minimum and maximum number of accelerators (GPUs, FPGAs, or AWS Inferentia chips) on an instance. To exclude accelerator-enabled instance types, set `Max` to `0`.

## Contents

**Max**

The maximum number of accelerators. To specify no maximum limit, omit this parameter. To exclude accelerator-enabled instance types, set `Max` to `0`.

Type: Integer

Required: No

**Min**

The minimum number of accelerators. To specify no minimum limit, omit this parameter.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AcceleratorTotalMemoryMiB

The minimum and maximum amount of total accelerator memory, in MiB.

## Contents

**Max** (request), **max** (response)

The maximum amount of accelerator memory, in MiB. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

**Min** (request), **min** (response)

The minimum amount of accelerator memory, in MiB. If this parameter is not specified, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AcceleratorTotalMemoryMiBRequest

The minimum and maximum amount of total accelerator memory, in MiB.

## Contents

**Max**

The maximum amount of accelerator memory, in MiB. To specify no maximum limit, omit this parameter.

Type: Integer

Required: No

**Min**

The minimum amount of accelerator memory, in MiB. To specify no minimum limit, omit this parameter.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AccessScopeAnalysisFinding

Describes a finding for a Network Access Scope.

## Contents

**FindingComponentSet.N**

The finding components.

Type: Array of PathComponent objects

Required: No

**findingId**

The ID of the finding.

Type: String

Required: No

**networkInsightsAccessScopeAnalysisId**

The ID of the Network Access Scope analysis.

Type: String

Required: No

**networkInsightsAccessScopeId**

The ID of the Network Access Scope.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AccessScopePath

Describes a path.

## Contents

**destination**

The destination.

Type: PathStatement object

Required: No

**source**

The source.

Type: PathStatement object

Required: No

**ThroughResourceSet.N**

The through resources.

Type: Array of ThroughResourcesStatement objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AccessScopePathRequest

Describes a path.

## Contents

**Destination**

The destination.

Type: PathStatementRequest object

Required: No

**Source**

The source.

Type: PathStatementRequest object

Required: No

**ThroughResource.N**

The through resources.

Type: Array of ThroughResourcesStatementRequest objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AccountAttribute

Describes an account attribute.

## Contents

**attributeName**

The name of the account attribute.

Type: String

Required: No

**AttributeValueSet.N**

The values for the account attribute.

Type: Array of AccountAttributeValue objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AccountAttributeValue

Describes a value of an account attribute.

## Contents

**attributeValue**

The value of the attribute.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ActiveInstance

Describes a running instance in a Spot Fleet.

## Contents

**instanceHealth**

The health status of the instance. If the status of either the instance status check or the system status check is `impaired`, the health status of the instance is `unhealthy`. Otherwise, the health status is `healthy`.

Type: String

Valid Values: `healthy | unhealthy`

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

**instanceType**

The instance type.

Type: String

Required: No

**spotInstanceRequestId**

The ID of the Spot Instance request.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ActiveVpnTunnelStatus

Contains information about the current security configuration of an active VPN tunnel.

## Contents

**ikeVersion**

The version of the Internet Key Exchange (IKE) protocol being used.

Type: String

Required: No

**phase1DHGroup**

The Diffie-Hellman group number being used in Phase 1 IKE negotiations.

Type: Integer

Required: No

**phase1EncryptionAlgorithm**

The encryption algorithm negotiated in Phase 1 IKE negotiations.

Type: String

Required: No

**phase1IntegrityAlgorithm**

The integrity algorithm negotiated in Phase 1 IKE negotiations.

Type: String

Required: No

**phase2DHGroup**

The Diffie-Hellman group number being used in Phase 2 IKE negotiations.

Type: Integer

Required: No

**phase2EncryptionAlgorithm**

The encryption algorithm negotiated in Phase 2 IKE negotiations.

Type: String

Required: No

**phase2IntegrityAlgorithm**

The integrity algorithm negotiated in Phase 2 IKE negotiations.

Type: String

Required: No

**provisioningStatus**

The current provisioning status of the VPN tunnel.

Type: String

Valid Values: `available | pending | failed`

Required: No

**provisioningStatusReason**

The reason for the current provisioning status.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AddedPrincipal

Describes a principal.

## Contents

**principal**

The Amazon Resource Name (ARN) of the principal.

Type: String

Required: No

**principalType**

The type of principal.

Type: String

Valid Values: `All | Service | OrganizationUnit | Account | User | Role`

Required: No

**serviceId**

The ID of the service.

Type: String

Required: No

**servicePermissionId**

The ID of the service permission.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AddIpamOperatingRegion

Add an operating Region to an IPAM. Operating Regions are AWS Regions where the IPAM is allowed to manage IP address CIDRs. IPAM only discovers and monitors resources in the AWS Regions you select as operating Regions.

For more information about operating Regions, see Create an IPAM in the *Amazon VPC IPAM User Guide*.

## Contents

**RegionName**

The name of the operating Region.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AddIpamOrganizationalUnitExclusion

Add an Organizational Unit (OU) exclusion to your IPAM. If your IPAM is integrated with AWS Organizations and you add an organizational unit (OU) exclusion, IPAM will not manage the IP addresses in accounts in that OU exclusion. There is a limit on the number of exclusions you can create. For more information, see Quotas for your IPAM in the *Amazon VPC IPAM User Guide*.

## Contents

**OrganizationsEntityPath**

An AWS Organizations entity path. Build the path for the OU(s) using AWS Organizations IDs separated by a /. Include all child OUs by ending the path with /*.

- Example 1
  - Path to a child OU: `o-a1b2c3d4e5/r-f6g7h8i9j0example/ou-ghi0-awsccccc/ou-jkl0-awsddddd/`
  - In this example, `o-a1b2c3d4e5` is the organization ID, `r-f6g7h8i9j0example` is the root ID , `ou-ghi0-awsccccc` is an OU ID, and `ou-jkl0-awsddddd` is a child OU ID.
  - IPAM will not manage the IP addresses in accounts in the child OU.
- Example 2
  - Path where all child OUs will be part of the exclusion: `o-a1b2c3d4e5/r-f6g7h8i9j0example/ou-ghi0-awsccccc/*`
  - In this example, IPAM will not manage the IP addresses in accounts in the OU (`ou-ghi0-awsccccc`) or in accounts in any OUs that are children of the OU.

For more information on how to construct an entity path, see Understand the AWS Organizations entity path in the *AWS Identity and Access Management User Guide*.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AdditionalDetail

Describes an additional detail for a path analysis. For more information, see Reachability Analyzer additional detail codes.

## Contents

**additionalDetailType**

The additional detail code.

Type: String

Required: No

**component**

The path component.

Type: AnalysisComponent object

Required: No

**LoadBalancerSet.N**

The load balancers.

Type: Array of AnalysisComponent objects

Required: No

**RuleGroupRuleOptionsPairSet.N**

The rule options.

Type: Array of RuleGroupRuleOptionsPair objects

Required: No

**RuleGroupTypePairSet.N**

The rule group type.

Type: Array of RuleGroupTypePair objects

Required: No

**RuleOptionSet.N**

The rule options.

Type: Array of RuleOption objects

Required: No

**serviceName**

The name of the VPC endpoint service.

Type: String

Required: No

**vpcEndpointService**

The VPC endpoint service.

Type: AnalysisComponent object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AddPrefixListEntry

An entry for a prefix list.

## Contents

**Cidr**

The CIDR block.

Type: String

Required: Yes

**Description**

A description for the entry.

Constraints: Up to 255 characters in length.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Address

Describes an Elastic IP address, or a carrier IP address.

## Contents

**allocationId**

The ID representing the allocation of the address.

Type: String

Required: No

**associationId**

The ID representing the association of the address with an instance.

Type: String

Required: No

**carrierIp**

The carrier IP address associated. This option is only available for network interfaces which reside in a subnet in a Wavelength Zone (for example an EC2 instance).

Type: String

Required: No

**customerOwnedIp**

The customer-owned IP address.

Type: String

Required: No

**customerOwnedIpv4Pool**

The ID of the customer-owned address pool.

Type: String

Required: No

**domain**

The network (`vpc`).

Type: String

Valid Values: `vpc | standard`

Required: No

**instanceId**

The ID of the instance that the address is associated with (if any).

Type: String

Required: No

**networkBorderGroup**

The name of the unique set of Availability Zones, Local Zones, or Wavelength Zones from which AWS advertises IP addresses.

Type: String

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**networkInterfaceOwnerId**

The ID of the AWS account that owns the network interface.

Type: String

Required: No

**privateIpAddress**

The private IP address associated with the Elastic IP address.

Type: String

Required: No

**publicIp**

The Elastic IP address.

Type: String

Required: No

**publicIpv4Pool**

The ID of an address pool.

Type: String

Required: No

**serviceManaged**

The service that manages the elastic IP address.

> **Note**
>
> The only option supported today is `alb`.

Type: String

Valid Values: `alb | nlb | rnat | rds`

Required: No

**subnetId**

The ID of the subnet where the IP address is allocated.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the Elastic IP address.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AddressAttribute

The attributes associated with an Elastic IP address.

## Contents

**allocationId**

[EC2-VPC] The allocation ID.

Type: String

Required: No

**ptrRecord**

The pointer (PTR) record for the IP address.

Type: String

Required: No

**ptrRecordUpdate**

The updated PTR record for the IP address.

Type: PtrUpdateStatus object

Required: No

**publicIp**

The public IP address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AddressTransfer

Details on the Elastic IP address transfer. For more information, see Transfer Elastic IP addresses in the *Amazon VPC User Guide*.

## Contents

**addressTransferStatus**

The Elastic IP address transfer status.

Type: String

Valid Values: `pending | disabled | accepted`

Required: No

**allocationId**

The allocation ID of an Elastic IP address.

Type: String

Required: No

**publicIp**

The Elastic IP address being transferred.

Type: String

Required: No

**transferAccountId**

The ID of the account that you want to transfer the Elastic IP address to.

Type: String

Required: No

**transferOfferAcceptedTimestamp**

The timestamp when the Elastic IP address transfer was accepted.

Type: Timestamp

Required: No

**transferOfferExpirationTimestamp**

The timestamp when the Elastic IP address transfer expired. When the source account starts the transfer, the transfer account has seven hours to allocate the Elastic IP address to complete the transfer, or the Elastic IP address will return to its original owner.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AllowedPrincipal

Describes a principal.

## Contents

**principal**

The Amazon Resource Name (ARN) of the principal.

Type: String

Required: No

**principalType**

The type of principal.

Type: String

Valid Values: `All | Service | OrganizationUnit | Account | User | Role`

Required: No

**serviceId**

The ID of the service.

Type: String

Required: No

**servicePermissionId**

The ID of the service permission.

Type: String

Required: No

**TagSet.N**

The tags.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AlternatePathHint

Describes an potential intermediate component of a feasible path.

## Contents

**componentArn**

The Amazon Resource Name (ARN) of the component.

Type: String

Required: No

**componentId**

The ID of the component.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AnalysisAclRule

Describes a network access control (ACL) rule.

## Contents

**cidr**

The IPv4 address range, in CIDR notation.

Type: String

Required: No

**egress**

Indicates whether the rule is an outbound rule.

Type: Boolean

Required: No

**portRange**

The range of ports.

Type: PortRange object

Required: No

**protocol**

The protocol.

Type: String

Required: No

**ruleAction**

Indicates whether to allow or deny traffic that matches the rule.

Type: String

Required: No

**ruleNumber**

The rule number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AnalysisComponent

Describes a path component.

## Contents

**arn**

The Amazon Resource Name (ARN) of the component.

Type: String

Required: No

**id**

The ID of the component.

Type: String

Required: No

**name**

The name of the analysis component.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AnalysisLoadBalancerListener

Describes a load balancer listener.

## Contents

**instancePort**

[Classic Load Balancers] The back-end port for the listener.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 65535.

Required: No

**loadBalancerPort**

The port on which the load balancer is listening.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 65535.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AnalysisLoadBalancerTarget

Describes a load balancer target.

## Contents

**address**

The IP address.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**availabilityZone**

The Availability Zone.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**instance**

Information about the instance.

Type: AnalysisComponent object

Required: No

**port**

The port on which the target is listening.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 65535.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AnalysisPacketHeader

Describes a header. Reflects any changes made by a component as traffic passes through. The fields of an inbound header are null except for the first component of a path.

## Contents

**DestinationAddressSet.N**

The destination addresses.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**DestinationPortRangeSet.N**

The destination port ranges.

Type: Array of PortRange objects

Required: No

**protocol**

The protocol.

Type: String

Required: No

**SourceAddressSet.N**

The source addresses.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**SourcePortRangeSet.N**

The source port ranges.

Type: Array of PortRange objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AnalysisRouteTableRoute

Describes a route table route.

## Contents

**carrierGatewayId**

The ID of a carrier gateway.

Type: String

Required: No

**coreNetworkArn**

The Amazon Resource Name (ARN) of a core network.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**destinationCidr**

The destination IPv4 address, in CIDR notation.

Type: String

Required: No

**destinationPrefixListId**

The prefix of the AWS service.

Type: String

Required: No

**egressOnlyInternetGatewayId**

The ID of an egress-only internet gateway.

Type: String

Required: No

**gatewayId**

The ID of the gateway, such as an internet gateway or virtual private gateway.

Type: String

Required: No

**instanceId**

The ID of the instance, such as a NAT instance.

Type: String

Required: No

**localGatewayId**

The ID of a local gateway.

Type: String

Required: No

**natGatewayId**

The ID of a NAT gateway.

Type: String

Required: No

**networkInterfaceId**

The ID of a network interface.

Type: String

Required: No

**origin**

Describes how the route was created. The following are the possible values:

- CreateRouteTable - The route was automatically created when the route table was created.
- CreateRoute - The route was manually added to the route table.

- EnableVgwRoutePropagation - The route was propagated by route propagation.

Type: String

Required: No

**state**

The state. The following are the possible values:

- active
- blackhole

Type: String

Required: No

**transitGatewayId**

The ID of a transit gateway.

Type: String

Required: No

**vpcPeeringConnectionId**

The ID of a VPC peering connection.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AnalysisSecurityGroupRule

Describes a security group rule.

## Contents

**cidr**

The IPv4 address range, in CIDR notation.

Type: String

Required: No

**direction**

The direction. The following are the possible values:

- egress
- ingress

Type: String

Required: No

**portRange**

The port range.

Type: PortRange object

Required: No

**prefixListId**

The prefix list ID.

Type: String

Required: No

**protocol**

The protocol name.

Type: String

Required: No

**securityGroupId**

The security group ID.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AsnAssociation

An Autonomous System Number (ASN) and BYOIP CIDR association.

## Contents

**asn**

The association's ASN.

Type: String

Required: No

**cidr**

The association's CIDR.

Type: String

Required: No

**state**

The association's state.

Type: String

Valid Values: `disassociated | failed-disassociation | failed-association | pending-disassociation | pending-association | associated`

Required: No

**statusMessage**

The association's status message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AsnAuthorizationContext

Provides authorization for Amazon to bring an Autonomous System Number (ASN) to a specific AWS account using bring your own ASN (BYOASN). For details on the format of the message and signature, see Tutorial: Bring your ASN to IPAM in the *Amazon VPC IPAM guide*.

## Contents

**Message**

The authorization context's message.

Type: String

Required: Yes

**Signature**

The authorization context's signature.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AssignedPrivateIpAddress

Describes the private IP addresses assigned to a network interface.

## Contents

**privateIpAddress**

The private IP address assigned to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AssociatedRole

Information about the associated IAM roles.

## Contents

**associatedRoleArn**

The ARN of the associated IAM role.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**certificateS3BucketName**

The name of the Amazon S3 bucket in which the Amazon S3 object is stored.

Type: String

Required: No

**certificateS3ObjectKey**

The key of the Amazon S3 object where the certificate, certificate chain, and encrypted private key bundle are stored. The object key is formatted as follows: `role_arn/certificate_arn`.

Type: String

Required: No

**encryptionKmsKeyId**

The ID of the KMS key used to encrypt the private key.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AssociatedTargetNetwork

Describes a target network that is associated with a Client VPN endpoint. A target network is a subnet in a VPC.

## Contents

**networkId**

The ID of the subnet.

Type: String

Required: No

**networkType**

The target network type.

Type: String

Valid Values: vpc

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AssociationStatus

Describes the state of a target network association.

## Contents

**code**

The state of the target network association.

Type: String

Valid Values: `associating | associated | association-failed | disassociating | disassociated`

Required: No

**message**

A message about the status of the target network association, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AthenaIntegration

Describes integration options for Amazon Athena.

## Contents

**IntegrationResultS3DestinationArn**

The location in Amazon S3 to store the generated CloudFormation template.

Type: String

Required: Yes

**PartitionLoadFrequency**

The schedule for adding new partitions to the table.

Type: String

Valid Values: `none | daily | weekly | monthly`

Required: Yes

**PartitionEndDate**

The end date for the partition.

Type: Timestamp

Required: No

**PartitionStartDate**

The start date for the partition.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AttachmentEnaSrdSpecification

ENA Express uses AWS Scalable Reliable Datagram (SRD) technology to increase the maximum bandwidth used per stream and minimize tail latency of network traffic between EC2 instances. With ENA Express, you can communicate between two EC2 instances in the same subnet within the same account, or in different accounts. Both sending and receiving instances must have ENA Express enabled.

To improve the reliability of network packet delivery, ENA Express reorders network packets on the receiving end by default. However, some UDP-based applications are designed to handle network packets that are out of order to reduce the overhead for packet delivery at the network layer. When ENA Express is enabled, you can specify whether UDP network traffic uses it.

## Contents

**enaSrdEnabled**

Indicates whether ENA Express is enabled for the network interface.

Type: Boolean

Required: No

**enaSrdUdpSpecification**

Configures ENA Express for UDP network traffic.

Type: AttachmentEnaSrdUdpSpecification object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AttachmentEnaSrdUdpSpecification

ENA Express is compatible with both TCP and UDP transport protocols. When it's enabled, TCP traffic automatically uses it. However, some UDP-based applications are designed to handle network packets that are out of order, without a need for retransmission, such as live video broadcasting or other near-real-time applications. For UDP traffic, you can specify whether to use ENA Express, based on your application environment needs.

## Contents

**enaSrdUdpEnabled**

Indicates whether UDP traffic to and from the instance uses ENA Express. To specify this setting, you must first enable ENA Express.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AttributeBooleanValue

Describes a value for a resource attribute that is a Boolean value.

## Contents

**Value** (request), **value** (response)

The attribute value. The valid values are `true` or `false`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AttributeSummary

A summary report for the attribute across all Regions.

## Contents

**attributeName**

The name of the attribute.

Type: String

Required: No

**mostFrequentValue**

The configuration value that is most frequently observed for the attribute.

Type: String

Required: No

**numberOfMatchedAccounts**

The number of accounts with the same configuration value for the attribute that is most frequently observed.

Type: Integer

Required: No

**numberOfUnmatchedAccounts**

The number of accounts with a configuration value different from the most frequently observed value for the attribute.

Type: Integer

Required: No

**RegionalSummarySet.N**

The summary report for each Region for the attribute.

Type: Array of RegionalSummary objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AttributeValue

Describes a value for a resource attribute that is a String.

## Contents

**Value** (request), **value** (response)

The attribute value. The value is case-sensitive.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AuthorizationRule

Information about an authorization rule.

## Contents

**accessAll**

Indicates whether the authorization rule grants access to all clients.

Type: Boolean

Required: No

**clientVpnEndpointId**

The ID of the Client VPN endpoint with which the authorization rule is associated.

Type: String

Required: No

**description**

A brief description of the authorization rule.

Type: String

Required: No

**destinationCidr**

The IPv4 address range, in CIDR notation, of the network to which the authorization rule applies.

Type: String

Required: No

**groupId**

The ID of the Active Directory group to which the authorization rule grants access.

Type: String

Required: No

**status**

The current state of the authorization rule.

Type: ClientVpnAuthorizationRuleStatus object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AvailabilityZone

Describes Availability Zones, Local Zones, and Wavelength Zones.

## Contents

**GeographySet.N**

The geography information for the Availability Zone or Local Zone. The geography is returned as a list.

Type: Array of AvailabilityZoneGeography objects

Required: No

**groupLongName**

The long name of the Availability Zone group, Local Zone group, or Wavelength Zone group.

Type: String

Required: No

**groupName**

The name of the zone group. For example:

- Availability Zones - `us-east-1-zg-1`
- Local Zones - `us-west-2-lax-1`
- Wavelength Zones - `us-east-1-wl1-bos-wlz-1`

Type: String

Required: No

**MessageSet.N**

Any messages about the Availability Zone, Local Zone, or Wavelength Zone.

Type: Array of AvailabilityZoneMessage objects

Required: No

**networkBorderGroup**

The name of the network border group.

Type: String

Required: No

**optInStatus**

For Availability Zones, this parameter always has the value of `opt-in-not-required`.

For Local Zones and Wavelength Zones, this parameter is the opt-in status. The possible values are `opted-in` and `not-opted-in`.

Type: String

Valid Values: `opt-in-not-required | opted-in | not-opted-in`

Required: No

**parentZoneId**

The ID of the zone that handles some of the Local Zone or Wavelength Zone control plane operations, such as API calls.

Type: String

Required: No

**parentZoneName**

The name of the zone that handles some of the Local Zone or Wavelength Zone control plane operations, such as API calls.

Type: String

Required: No

**regionName**

The name of the Region.

Type: String

Required: No

**SubGeographySet.N**

The sub-geography information for the Availability Zone or Local Zone. The sub-geography is returned as a list.

Type: Array of AvailabilityZoneSubGeography objects

Required: No

**zoneId**

The ID of the Availability Zone, Local Zone, or Wavelength Zone.

Type: String

Required: No

**zoneName**

The name of the Availability Zone, Local Zone, or Wavelength Zone.

Type: String

Required: No

**zoneState**

The state of the Availability Zone, Local Zone, or Wavelength Zone. The possible values are `available`, `unavailable`, and `constrained`.

Type: String

Valid Values: `available | information | impaired | unavailable | constrained`

Required: No

**zoneType**

The type of zone.

Valid values: `availability-zone` | `local-zone` | `wavelength-zone`

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AvailabilityZoneAddress

For regional NAT gateways only: The configuration specifying which Elastic IP address (EIP) to use for handling outbound NAT traffic from a specific Availability Zone.

A regional NAT gateway is a single NAT Gateway that works across multiple availability zones (AZs) in your VPC, providing redundancy, scalability and availability across all the AZs in a Region.

For more information, see Regional NAT gateways for automatic multi-AZ expansion in the *Amazon VPC User Guide*.

## Contents

**AllocationId.N**

The allocation IDs of the Elastic IP addresses (EIPs) to be used for handling outbound NAT traffic in this specific Availability Zone.

Type: Array of strings

Required: No

**AvailabilityZone**

For regional NAT gateways only: The Availability Zone where this specific NAT gateway configuration will be active. Each AZ in a regional NAT gateway has its own configuration to handle outbound NAT traffic from that AZ.

A regional NAT gateway is a single NAT Gateway that works across multiple availability zones (AZs) in your VPC, providing redundancy, scalability and availability across all the AZs in a Region.

Type: String

Required: No

**AvailabilityZoneId**

For regional NAT gateways only: The ID of the Availability Zone where this specific NAT gateway configuration will be active. Each AZ in a regional NAT gateway has its own configuration to handle outbound NAT traffic from that AZ. Use this instead of AvailabilityZone for consistent identification of AZs across AWS Regions.

A regional NAT gateway is a single NAT Gateway that works across multiple availability zones (AZs) in your VPC, providing redundancy, scalability and availability across all the AZs in a Region.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AvailabilityZoneGeography

Describes the geography information for an Availability Zone or Local Zone.

## Contents

**name**

The name of the geography, for example, `United States of America`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AvailabilityZoneMessage

Describes a message about an Availability Zone, Local Zone, or Wavelength Zone.

## Contents

**message**

The message about the Availability Zone, Local Zone, or Wavelength Zone.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AvailabilityZoneSubGeography

Describes the sub-geography information for an Availability Zone or Local Zone.

## Contents

**name**

The name of the sub-geography, for example, `Oregon`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# AvailableCapacity

The capacity information for instances that can be launched onto the Dedicated Host.

## Contents

**AvailableInstanceCapacity.N**

The number of instances that can be launched onto the Dedicated Host depending on the host's available capacity. For Dedicated Hosts that support multiple instance types, this parameter represents the number of instances for each instance size that is supported on the host.

Type: Array of InstanceCapacity objects

Required: No

**availableVCpus**

The number of vCPUs available for launching instances onto the Dedicated Host.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# BaselineEbsBandwidthMbps

The minimum and maximum baseline bandwidth to Amazon EBS, in Mbps. For more information, see Amazon EBS–optimized instances in the *Amazon EC2 User Guide*.

## Contents

**Max** (request), **max** (response)

The maximum baseline bandwidth, in Mbps. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

**Min** (request), **min** (response)

The minimum baseline bandwidth, in Mbps. If this parameter is not specified, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# BaselineEbsBandwidthMbpsRequest

The minimum and maximum baseline bandwidth to Amazon EBS, in Mbps. For more information, see Amazon EBS–optimized instances in the *Amazon EC2 User Guide*.

## Contents

**Max**

The maximum baseline bandwidth, in Mbps. To specify no maximum limit, omit this parameter.

Type: Integer

Required: No

**Min**

The minimum baseline bandwidth, in Mbps. To specify no minimum limit, omit this parameter.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# BaselinePerformanceFactors

The baseline performance to consider, using an instance family as a baseline reference. The instance family establishes the lowest acceptable level of performance. Amazon EC2 uses this baseline to guide instance type selection, but there is no guarantee that the selected instance types will always exceed the baseline for every application.

Currently, this parameter only supports CPU performance as a baseline performance factor. For example, specifying `c6i` would use the CPU performance of the `c6i` family as the baseline reference.

## Contents

**Cpu** (request), **cpu** (response)

The CPU performance to consider, using an instance family as the baseline reference.

Type: CpuPerformanceFactor object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# BaselinePerformanceFactorsRequest

The baseline performance to consider, using an instance family as a baseline reference. The instance family establishes the lowest acceptable level of performance. Amazon EC2 uses this baseline to guide instance type selection, but there is no guarantee that the selected instance types will always exceed the baseline for every application.

Currently, this parameter only supports CPU performance as a baseline performance factor. For example, specifying `c6i` would use the CPU performance of the `c6i` family as the baseline reference.

## Contents

**Cpu**

The CPU performance to consider, using an instance family as the baseline reference.

Type: CpuPerformanceFactorRequest object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# BlockDeviceMapping

Describes a block device mapping, which defines the EBS volumes and instance store volumes to attach to an instance at launch.

## Contents

**DeviceName** (request), **deviceName** (response)

The device name. For available device names, see Device names for volumes.

Type: String

Required: No

**Ebs** (request), **ebs** (response)

Parameters used to automatically set up EBS volumes when the instance is launched.

Type: EbsBlockDevice object

Required: No

**NoDevice** (request), **noDevice** (response)

To omit the device from the block device mapping, specify an empty string. When this property is specified, the device is removed from the block device mapping regardless of the assigned value.

Type: String

Required: No

**VirtualName** (request), **virtualName** (response)

The virtual device name (`ephemeralN`). Instance store volumes are numbered starting from 0. An instance type with 2 available instance store volumes can specify mappings for `ephemeral0` and `ephemeral1`. The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.

NVMe instance store volumes are automatically enumerated and assigned a device name. Including them in your block device mapping has no effect.

Constraints: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# BlockDeviceMappingResponse

Describes a block device mapping, which defines the EBS volumes and instance store volumes to attach to an instance at launch.

## Contents

**deviceName**

The device name (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: No

**ebs**

Parameters used to automatically set up EBS volumes when the instance is launched.

Type: EbsBlockDeviceResponse object

Required: No

**noDevice**

Suppresses the specified device included in the block device mapping.

Type: String

Required: No

**virtualName**

The virtual device name.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# BlockPublicAccessStates

The state of VPC Block Public Access (BPA).

## Contents

**internetGatewayBlockMode**

The mode of VPC BPA.

- `off`: VPC BPA is not enabled and traffic is allowed to and from internet gateways and egress-only internet gateways in this Region.
- `block-bidirectional`: Block all traffic to and from internet gateways and egress-only internet gateways in this Region (except for excluded VPCs and subnets).
- `block-ingress`: Block all internet traffic to the VPCs in this Region (except for VPCs or subnets which are excluded). Only traffic to and from NAT gateways and egress-only internet gateways is allowed because these gateways only allow outbound connections to be established.

Type: String

Valid Values: `off | block-bidirectional | block-ingress`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# BundleTask

Describes a bundle task.

## Contents

**bundleId**

The ID of the bundle task.

Type: String

Required: No

**error**

If the task fails, a description of the error.

Type: BundleTaskError object

Required: No

**instanceId**

The ID of the instance associated with this bundle task.

Type: String

Required: No

**progress**

The level of task completion, as a percent (for example, 20%).

Type: String

Required: No

**startTime**

The time this task started.

Type: Timestamp

Required: No

**state**

The state of the task.

Type: String

Valid Values: `pending | waiting-for-shutdown | bundling | storing | cancelling | complete | failed`

Required: No

**storage**

The Amazon S3 storage locations.

Type: Storage object

Required: No

**updateTime**

The time of the most recent update for the task.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# BundleTaskError

Describes an error for BundleInstance.

## Contents

**code**

The error code.

Type: String

Required: No

**message**

The error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Byoasn

The Autonomous System Number (ASN) and BYOIP CIDR association.

## Contents

**asn**

A public 2-byte or 4-byte ASN.

Type: String

Required: No

**ipamId**

An IPAM ID.

Type: String

Required: No

**state**

The provisioning state of the BYOASN.

Type: String

Valid Values: `deprovisioned | failed-deprovision | failed-provision | pending-deprovision | pending-provision | provisioned`

Required: No

**statusMessage**

The status message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ByoipCidr

Information about an address range that is provisioned for use with your AWS resources through bring your own IP addresses (BYOIP).

## Contents

**advertisementType**

Specifies the advertisement method for the BYOIP CIDR. Valid values are:

- `unicast`: IP is advertised from a single location (regional services like EC2)
- `anycast`: IP is advertised from multiple global locations simultaneously (global services like CloudFront)

For more information, see Bring your own IP to CloudFront using IPAM in the *Amazon VPC IPAM User Guide*.

Type: String

Required: No

**AsnAssociationSet.N**

The BYOIP CIDR associations with ASNs.

Type: Array of AsnAssociation objects

Required: No

**cidr**

The address range, in CIDR notation.

Type: String

Required: No

**description**

The description of the address range.

Type: String

Required: No

**networkBorderGroup**

If you have Local Zones enabled, you can choose a network border group for Local Zones when you provision and advertise a BYOIPv4 CIDR. Choose the network border group carefully as the EIP and the AWS resource it is associated with must reside in the same network border group.

You can provision BYOIP address ranges to and advertise them in the following Local Zone network border groups:

- us-east-1-dfw-2
- us-west-2-lax-1
- us-west-2-phx-2

> **Note**
>
> You cannot provision or advertise BYOIPv6 address ranges in Local Zones at this time.

Type: String

Required: No

**state**

The state of the address range.

- `advertised`: The address range is being advertised to the internet by AWS.
- `deprovisioned`: The address range is deprovisioned.
- `failed-deprovision`: The request to deprovision the address range was unsuccessful. Ensure that all EIPs from the range have been deallocated and try again.
- `failed-provision`: The request to provision the address range was unsuccessful.
- `pending-deprovision`: You've submitted a request to deprovision an address range and it's pending.
- `pending-provision`: You've submitted a request to provision an address range and it's pending.
- `provisioned`: The address range is provisioned and can be advertised. The range is not currently advertised.
- `provisioned-not-publicly-advertisable`: The address range is provisioned and cannot be advertised.

Type: String

Valid Values: `advertised | deprovisioned | failed-deprovision | failed-provision | pending-advertising | pending-deprovision | pending-provision | pending-withdrawal | provisioned | provisioned-not-publicly-advertisable`

Required: No

**statusMessage**

Upon success, contains the ID of the address pool. Otherwise, contains an error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CancelCapacityReservationFleetError

Describes a Capacity Reservation Fleet cancellation error.

## Contents

**code**

The error code.

Type: String

Required: No

**message**

The error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CancellationTerms

Describes the cancellation terms for cancelling a future-dated Capacity Reservation during its commitment duration.

## Contents

**cancellationType**

The type of cancellation charge. Possible values include `commitment-wind-down`.

Type: String

Valid Values: `commitment-wind-down`

Required: No

**chargeCommitmentDurationHours**

The number of hours for which cancellation charges will apply.

Type: Long

Required: No

**chargeEndDate**

The date and time at which cancellation charges will stop.

Type: Timestamp

Required: No

**committedInstanceCount**

The number of instances under commitment after cancellation.

Type: Integer

Required: No

**reservationState**

The state that the Capacity Reservation will transition to after cancellation.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CancelledSpotInstanceRequest

Describes a request to cancel a Spot Instance.

## Contents

**spotInstanceRequestId**

The ID of the Spot Instance request.

Type: String

Required: No

**state**

The state of the Spot Instance request.

Type: String

Valid Values: `active | open | closed | cancelled | completed`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CancelSpotFleetRequestsError

Describes a Spot Fleet error.

## Contents

**code**

The error code.

Type: String

Valid Values: `fleetRequestIdDoesNotExist | fleetRequestIdMalformed | fleetRequestNotInCancellableState | unexpectedError`

Required: No

**message**

The description for the error code.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CancelSpotFleetRequestsErrorItem

Describes a Spot Fleet request that was not successfully canceled.

## Contents

**error**

The error.

Type: CancelSpotFleetRequestsError object

Required: No

**spotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CancelSpotFleetRequestsSuccessItem

Describes a Spot Fleet request that was successfully canceled.

## Contents

**currentSpotFleetRequestState**

The current state of the Spot Fleet request.

Type: String

Valid Values: `submitted | active | cancelled | failed | cancelled_running | cancelled_terminating | modifying`

Required: No

**previousSpotFleetRequestState**

The previous state of the Spot Fleet request.

Type: String

Valid Values: `submitted | active | cancelled | failed | cancelled_running | cancelled_terminating | modifying`

Required: No

**spotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityAllocation

Information about instance capacity usage for a Capacity Reservation.

## Contents

**AllocationMetadataList.N**

Additional metadata associated with the capacity allocation. Each entry contains a key-value pair providing context about the allocation.

Type: Array of CapacityAllocationMetadataEntry objects

Required: No

**allocationType**

The usage type. `used` indicates that the instance capacity is in use by instances that are running in the Capacity Reservation.

Type: String

Valid Values: `used | cancelling`

Required: No

**count**

The amount of instance capacity associated with the usage. For example a value of 4 indicates that instance capacity for 4 instances is currently in use.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# CapacityAllocationMetadataEntry

A key-value pair that provides additional metadata about a capacity allocation.

## Contents

**key**

The key of the metadata entry.

Type: String

Required: No

**value**

The value of the metadata entry.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityBlock

Reserve powerful GPU instances on a future date to support your short duration machine learning (ML) workloads. Instances that run inside a Capacity Block are automatically placed close together inside Amazon EC2 UltraClusters, for low-latency, petabit-scale, non-blocking networking.

You can also reserve Amazon EC2 UltraServers. UltraServers connect multiple EC2 instances using a low-latency, high-bandwidth accelerator interconnect (NeuronLink). They are built to tackle very large-scale AI/ML workloads that require significant processing power. For more information, see Amazon EC2 UltraServers.

## Contents

**availabilityZone**

The Availability Zone of the Capacity Block.

Type: String

Required: No

**availabilityZoneId**

The Availability Zone ID of the Capacity Block.

Type: String

Required: No

**capacityBlockId**

The ID of the Capacity Block.

Type: String

Required: No

**CapacityReservationIdSet.N**

The ID of the Capacity Reservation.

Type: Array of strings

Required: No

**createDate**

The date and time at which the Capacity Block was created.

Type: Timestamp

Required: No

**endDate**

The date and time at which the Capacity Block expires. When a Capacity Block expires, all instances in the Capacity Block are terminated.

Type: Timestamp

Required: No

**startDate**

The date and time at which the Capacity Block was started.

Type: Timestamp

Required: No

**state**

The state of the Capacity Block.

Type: String

Valid Values: `active | expired | unavailable | cancelled | failed | scheduled | payment-pending | payment-failed`

Required: No

**TagSet.N**

The tags assigned to the Capacity Block.

Type: Array of Tag objects

Required: No

**ultraserverType**

The EC2 UltraServer type of the Capacity Block.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityBlockExtension

Describes a Capacity Block extension. With an extension, you can extend the duration of time for an existing Capacity Block.

## Contents

**availabilityZone**

The Availability Zone of the Capacity Block extension.

Type: String

Required: No

**availabilityZoneId**

The Availability Zone ID of the Capacity Block extension.

Type: String

Required: No

**capacityBlockExtensionDurationHours**

The duration of the Capacity Block extension in hours.

Type: Integer

Required: No

**capacityBlockExtensionEndDate**

The end date of the Capacity Block extension.

Type: Timestamp

Required: No

**capacityBlockExtensionOfferingId**

The ID of the Capacity Block extension offering.

Type: String

Required: No

**capacityBlockExtensionPurchaseDate**

The date when the Capacity Block extension was purchased.

Type: Timestamp

Required: No

**capacityBlockExtensionStartDate**

The start date of the Capacity Block extension.

Type: Timestamp

Required: No

**capacityBlockExtensionStatus**

The status of the Capacity Block extension. A Capacity Block extension can have one of the following statuses:

- `payment-pending` - The Capacity Block extension payment is processing. If your payment can't be processed within 12 hours, the Capacity Block extension is failed.
- `payment-failed` - Payment for the Capacity Block extension request was not successful.
- `payment-succeeded` - Payment for the Capacity Block extension request was successful. You receive an invoice that reflects the one-time upfront payment. In the invoice, you can associate the paid amount with the Capacity Block reservation ID.

Type: String

Valid Values: `payment-pending | payment-failed | payment-succeeded`

Required: No

**capacityReservationId**

The reservation ID of the Capacity Block extension.

Type: String

Required: No

**currencyCode**

The currency of the payment for the Capacity Block extension.

Type: String

Required: No

**instanceCount**

The number of instances in the Capacity Block extension.

Type: Integer

Required: No

**instanceType**

The instance type of the Capacity Block extension.

Type: String

Required: No

**upfrontFee**

The total price to be paid up front.

Type: String

Required: No

**zoneType**

The type of zone where the Capacity Block extension is located.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityBlockExtensionOffering

The recommended Capacity Block extension that fits your search requirements.

## Contents

**availabilityZone**

The Availability Zone of the Capacity Block that will be extended.

Type: String

Required: No

**availabilityZoneId**

The Availability Zone ID of the Capacity Block that will be extended.

Type: String

Required: No

**capacityBlockExtensionDurationHours**

The amount of time of the Capacity Block extension offering in hours.

Type: Integer

Required: No

**capacityBlockExtensionEndDate**

The date and time at which the Capacity Block extension expires. When a Capacity Block expires, the reserved capacity is released and you can no longer launch instances into it. The Capacity Block's state changes to `expired` when it reaches its end date

Type: Timestamp

Required: No

**capacityBlockExtensionOfferingId**

The ID of the Capacity Block extension offering.

Type: String

Required: No

**capacityBlockExtensionStartDate**

The date and time at which the Capacity Block extension will start. This date is also the same as the end date of the Capacity Block that will be extended.

Type: Timestamp

Required: No

**currencyCode**

The currency of the payment for the Capacity Block extension offering.

Type: String

Required: No

**instanceCount**

The number of instances in the Capacity Block extension offering.

Type: Integer

Required: No

**instanceType**

The instance type of the Capacity Block that will be extended.

Type: String

Required: No

**startDate**

The start date of the Capacity Block that will be extended.

Type: Timestamp

Required: No

**tenancy**

Indicates the tenancy of the Capacity Block extension offering. A Capacity Block can have one of the following tenancy settings:

- `default` - The Capacity Block is created on hardware that is shared with other AWS accounts.
- `dedicated` - The Capacity Block is created on single-tenant hardware that is dedicated to a single AWS account.

Type: String

Valid Values: `default | dedicated`

Required: No

**upfrontFee**

The total price of the Capacity Block extension offering, to be paid up front.

Type: String

Required: No

**zoneType**

The type of zone where the Capacity Block extension offering is available.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityBlockOffering

The recommended Capacity Block that fits your search requirements.

## Contents

**availabilityZone**

The Availability Zone of the Capacity Block offering.

Type: String

Required: No

**capacityBlockDurationHours**

The number of hours (in addition to `capacityBlockDurationMinutes`) for the duration of the Capacity Block reservation. For example, if a Capacity Block starts at **04:55** and ends at **11:30**, the hours field would be **6**.

Type: Integer

Required: No

**capacityBlockDurationMinutes**

The number of minutes (in addition to `capacityBlockDurationHours`) for the duration of the Capacity Block reservation. For example, if a Capacity Block starts at **08:55** and ends at **11:30**, the minutes field would be **35**.

Type: Integer

Required: No

**capacityBlockOfferingId**

The ID of the Capacity Block offering.

Type: String

Required: No

**currencyCode**

The currency of the payment for the Capacity Block.

Type: String

Required: No

**endDate**

The end date of the Capacity Block offering.

Type: Timestamp

Required: No

**instanceCount**

The number of instances in the Capacity Block offering.

Type: Integer

Required: No

**instanceType**

The instance type of the Capacity Block offering.

Type: String

Required: No

**startDate**

The start date of the Capacity Block offering.

Type: Timestamp

Required: No

**tenancy**

The tenancy of the Capacity Block.

Type: String

Valid Values: `default | dedicated`

Required: No

**ultraserverCount**

The number of EC2 UltraServers in the offering.

Type: Integer

Required: No

**ultraserverType**

The EC2 UltraServer type of the Capacity Block offering.

Type: String

Required: No

**upfrontFee**

The total price to be paid up front.

Type: String

Required: No

**zoneType**

The type of zone where the Capacity Block offering is available.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityBlockStatus

Describes the availability of capacity for a Capacity Block.

## Contents

**capacityBlockId**

The ID of the Capacity Block.

Type: String

Required: No

**CapacityReservationStatusSet.N**

The availability of capacity for the Capacity Block reservations.

Type: Array of CapacityReservationStatus objects

Required: No

**interconnectStatus**

The status of the high-bandwidth accelerator interconnect. Possible states include:

- ok the accelerator interconnect is healthy.
- `impaired` - accelerator interconnect communication is impaired.
- `insufficient-data` - insufficient data to determine accelerator interconnect status.

Type: String

Valid Values: `ok | impaired | insufficient-data`

Required: No

**totalAvailableCapacity**

The remaining capacity. Indicates the number of resources that can be launched into the Capacity Block.

Type: Integer

Required: No

**totalCapacity**

The combined amount of `Available` and `Unavailable` capacity in the Capacity Block.

Type: Integer

Required: No

**totalUnavailableCapacity**

The unavailable capacity. Indicates the instance capacity that is unavailable for use due to a system status check failure.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityManagerCondition

Represents a filter condition for Capacity Manager queries. Contains dimension-based filtering criteria used to narrow down metric data and dimension results.

## Contents

**DimensionCondition**

The dimension-based condition that specifies how to filter the data based on dimension values.

Type: DimensionCondition object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityManagerDataExportResponse

Contains information about a Capacity Manager data export configuration, including export settings, delivery status, and recent export activity.

## Contents

**capacityManagerDataExportId**

The unique identifier for the data export configuration.

Type: String

Required: No

**createTime**

The timestamp when the data export configuration was created.

Type: Timestamp

Required: No

**latestDeliveryS3LocationUri**

The S3 URI of the most recently delivered export file.

Type: String

Required: No

**latestDeliveryStatus**

The status of the most recent export delivery.

Type: String

Valid Values: `pending | in-progress | delivered | failed`

Required: No

**latestDeliveryStatusMessage**

A message describing the status of the most recent export delivery, including any error details if the delivery failed.

Type: String

Required: No

**latestDeliveryTime**

The timestamp when the most recent export was delivered to S3.

Type: Timestamp

Required: No

**outputFormat**

The file format of the exported data.

Type: String

Valid Values: `csv | parquet`

Required: No

**s3BucketName**

The name of the S3 bucket where export files are delivered.

Type: String

Required: No

**s3BucketPrefix**

The S3 key prefix used for organizing export files within the bucket.

Type: String

Required: No

**schedule**

The frequency at which data exports are generated.

Type: String

Valid Values: `hourly`

Required: No

**TagSet.N**

The tags associated with the data export configuration.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityManagerDimension

Represents dimension values for capacity metrics, including resource identifiers, geographic information, and reservation details used for grouping and filtering capacity data.

## Contents

**accountId**

The AWS account ID that owns the capacity resource.

Type: String

Required: No

**accountName**

The name of the AWS account that owns the capacity resource. This dimension is only available when Organizations access is enabled for Capacity Manager.

Type: String

Required: No

**availabilityZoneId**

The unique identifier of the Availability Zone where the capacity resource is located.

Type: String

Required: No

**instanceFamily**

The EC2 instance family of the capacity resource.

Type: String

Required: No

**instancePlatform**

The platform or operating system of the instance.

Type: String

Required: No

**instanceType**

The specific EC2 instance type of the capacity resource.

Type: String

Required: No

**reservationArn**

The Amazon Resource Name (ARN) of the capacity reservation. This provides a unique identifier that can be used across AWS services to reference the specific reservation.

Type: String

Required: No

**reservationCreateTimestamp**

The timestamp when the capacity reservation was originally created, in milliseconds since epoch. This differs from the start timestamp as reservations can be created before they become active.

Type: Timestamp

Required: No

**reservationEndDateType**

The type of end date for the capacity reservation. This indicates whether the reservation has a fixed end date, is open-ended, or follows a specific termination pattern.

Type: String

Valid Values: `limited | unlimited`

Required: No

**reservationEndTimestamp**

The timestamp when the capacity reservation expires and is no longer available, in milliseconds since epoch. After this time, the reservation will not provide any capacity.

Type: Timestamp

Required: No

**reservationId**

The unique identifier of the capacity reservation.

Type: String

Required: No

**reservationInstanceMatchCriteria**

The instance matching criteria for the capacity reservation, determining how instances are matched to the reservation.

Type: String

Required: No

**reservationStartTimestamp**

The timestamp when the capacity reservation becomes active and available for use, in milliseconds since epoch. This is when the reservation begins providing capacity.

Type: Timestamp

Required: No

**reservationState**

The current state of the capacity reservation.

Type: String

Valid Values: `active | expired | cancelled | scheduled | pending | failed | delayed | unsupported | payment-pending | payment-failed | retired`

Required: No

**reservationType**

The type of capacity reservation.

Type: String

Valid Values: `capacity-block | odcr`

Required: No

**reservationUnusedFinancialOwner**

The AWS account ID that is financially responsible for unused capacity reservation costs.

Type: String

Required: No

**resourceRegion**

The AWS Region where the capacity resource is located.

Type: String

Required: No

**TagSet.N**

The tags associated with the capacity resource, represented as key-value pairs. Only tags that have been activated for monitoring via `UpdateCapacityManagerMonitoredTagKeys` are included.

Type: Array of CapacityManagerTagDimension objects

Required: No

**tenancy**

The tenancy of the EC2 instances associated with this capacity dimension. Valid values are 'default' for shared tenancy, 'dedicated' for dedicated instances, or 'host' for dedicated hosts.

Type: String

Valid Values: `default | dedicated`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityManagerMonitoredTagKey

Describes a tag key that is being monitored by Capacity Manager, including its activation status and the earliest available data point.

## Contents

**capacityManagerProvided**

Indicates whether this tag key is provided by Capacity Manager by default, rather than being user-activated.

Type: Boolean

Required: No

**earliestDatapointTimestamp**

The earliest timestamp from which tag data is available for queries, in UTC ISO 8601 format.

Type: Timestamp

Required: No

**status**

The current status of the monitored tag key. Valid values are `activating`, `activated`, `deactivating`, and `suspended`.

Type: String

Valid Values: `activating | activated | deactivating | suspended`

Required: No

**statusMessage**

A message providing additional details about the current status of the monitored tag key.

Type: String

Required: No

**tagKey**

The tag key being monitored.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityManagerTagDimension

A key-value pair representing a tag associated with a capacity resource in Capacity Manager.

## Contents

**key**

The tag key.

Type: String

Required: No

**value**

The tag value.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservation

Describes a Capacity Reservation.

## Contents

**availabilityZone**

The Availability Zone in which the capacity is reserved.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone in which the capacity is reserved.

Type: String

Required: No

**availableInstanceCount**

The remaining capacity. Indicates the number of instances that can be launched in the Capacity Reservation.

Type: Integer

Required: No

**CapacityAllocationSet.N**

Information about instance capacity usage.

Type: Array of CapacityAllocation objects

Required: No

**capacityBlockId**

The ID of the Capacity Block.

Type: String

Required: No

**capacityReservationArn**

The Amazon Resource Name (ARN) of the Capacity Reservation.

Type: String

Required: No

**capacityReservationFleetId**

The ID of the Capacity Reservation Fleet to which the Capacity Reservation belongs. Only valid for Capacity Reservations that were created by a Capacity Reservation Fleet.

Type: String

Required: No

**capacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: No

**commitmentInfo**

Information about your commitment for a future-dated Capacity Reservation.

Type: CapacityReservationCommitmentInfo object

Required: No

**createDate**

The date and time the Capacity Reservation was created.

Type: Timestamp

Required: No

**deliveryPreference**

The delivery method for a future-dated Capacity Reservation. `incremental` indicates that the requested capacity is delivered in addition to any running instances and reserved capacity that you have in your account at the requested date and time.

Type: String

Valid Values: `fixed | incremental`

Required: No

**ebsOptimized**

Indicates whether the Capacity Reservation supports EBS-optimized instances. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS- optimized instance.

Type: Boolean

Required: No

**endDate**

The date and time the Capacity Reservation expires. When a Capacity Reservation expires, the reserved capacity is released and you can no longer launch instances into it. The Capacity Reservation's state changes to `expired` when it reaches its end date and time.

Type: Timestamp

Required: No

**endDateType**

Indicates the way in which the Capacity Reservation ends. A Capacity Reservation can have one of the following end types:

- `unlimited` - The Capacity Reservation remains active until you explicitly cancel it.
- `limited` - The Capacity Reservation expires automatically at a specified date and time.

Type: String

Valid Values: `unlimited | limited`

Required: No

**ephemeralStorage**

*Deprecated.*

Type: Boolean

Required: No

**instanceMatchCriteria**

Indicates the type of instance launches that the Capacity Reservation accepts. The options include:

- `open` - The Capacity Reservation accepts all instances that have matching attributes (instance type, platform, and Availability Zone). Instances that have matching attributes launch into the Capacity Reservation automatically without specifying any additional parameters.
- `targeted` - The Capacity Reservation only accepts instances that have matching attributes (instance type, platform, and Availability Zone), and explicitly target the Capacity Reservation. This ensures that only permitted instances can use the reserved capacity.

Type: String

Valid Values: `open | targeted`

Required: No

**instancePlatform**

The type of operating system for which the Capacity Reservation reserves capacity.

Type: String

Valid Values: `Linux/UNIX | Red Hat Enterprise Linux | SUSE Linux | Windows | Windows with SQL Server | Windows with SQL Server Enterprise | Windows with SQL Server Standard | Windows with SQL Server Web | Linux with SQL Server Standard | Linux with SQL Server Web | Linux with SQL Server Enterprise | RHEL with SQL Server Standard | RHEL with SQL Server Enterprise | RHEL with SQL Server Web | RHEL with HA | RHEL with HA and SQL Server Standard | RHEL with HA and SQL Server Enterprise | Ubuntu Pro`

Required: No

**instanceType**

The type of instance for which the Capacity Reservation reserves capacity.

Type: String

Required: No

**interruptible**

Indicates whether this Capacity Reservation is interruptible, meaning instances may be terminated when the owner reclaims capacity.

Type: Boolean

Required: No

**interruptibleCapacityAllocation**

Contains allocation details for interruptible reservations, including current allocated instances and target instance counts within the interruptibleCapacityAllocation object.

Type: InterruptibleCapacityAllocation object

Required: No

**interruptionInfo**

Information about the interruption configuration and association with the source reservation for interruptible Capacity Reservations.

Type: InterruptionInfo object

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost on which the Capacity Reservation was created.

Type: String

Pattern: `^arn:aws([a-z-]+)?:outposts:[a-z\d-]+:\d{12}:outpost/op-[a-f0-9]{17}$`

Required: No

**ownerId**

The ID of the AWS account that owns the Capacity Reservation.

Type: String

Required: No

**placementGroupArn**

The Amazon Resource Name (ARN) of the cluster placement group in which the Capacity Reservation was created. For more information, see Capacity Reservations for cluster placement groups in the *Amazon EC2 User Guide*.

Type: String

Pattern: `^arn:aws([a-z-]+)?:ec2:[a-z\d-]+:\d{12}:placement-group/^.{1,255}$`

Required: No

**reservationType**

The type of Capacity Reservation.

Type: String

Valid Values: `default | capacity-block`

Required: No

**startDate**

The date and time the Capacity Reservation was started.

Type: Timestamp

Required: No

**state**

The current state of the Capacity Reservation. A Capacity Reservation can be in one of the following states:

- `active` - The capacity is available for use.
- `expired` - The Capacity Reservation expired automatically at the date and time specified in your reservation request. The reserved capacity is no longer available for your use.
- `cancelled` - The Capacity Reservation was canceled. The reserved capacity is no longer available for your use.

- `pending` - The Capacity Reservation request was successful but the capacity provisioning is still pending.
- `failed` - The Capacity Reservation request has failed. A request can fail due to request parameters that are not valid, capacity constraints, or instance limit constraints. You can view a failed request for 60 minutes.
- `scheduled` - (*Future-dated Capacity Reservations*) The future-dated Capacity Reservation request was approved and the Capacity Reservation is scheduled for delivery on the requested start date.
- `payment-pending` - (*Capacity Blocks*) The upfront payment has not been processed yet.
- `payment-failed` - (*Capacity Blocks*) The upfront payment was not processed in the 12-hour time frame. Your Capacity Block was released.
- `assessing` - (*Future-dated Capacity Reservations*) Amazon EC2 is assessing your request for a future-dated Capacity Reservation.
- `delayed` - (*Future-dated Capacity Reservations*) Amazon EC2 encountered a delay in provisioning the requested future-dated Capacity Reservation. Amazon EC2 is unable to deliver the requested capacity by the requested start date and time.
- `unsupported` - (*Future-dated Capacity Reservations*) Amazon EC2 can't support the future-dated Capacity Reservation request due to capacity constraints. You can view unsupported requests for 30 days. The Capacity Reservation will not be delivered.
- `cancelling` - (*Future-dated Capacity Reservations*) The Capacity Reservation is being cancelled. Capacity has been released but charges continue for the commitment wind-down period. The reservation transitions to `cancelled` when the wind-down completes.

Type: String

Valid Values: `active | expired | cancelled | pending | failed | scheduled | payment-pending | payment-failed | assessing | delayed | unsupported | cancelling | unavailable`

Required: No

**TagSet.N**

Any tags assigned to the Capacity Reservation.

Type: Array of Tag objects

Required: No

**tenancy**

Indicates the tenancy of the Capacity Reservation. A Capacity Reservation can have one of the following tenancy settings:

- `default` - The Capacity Reservation is created on hardware that is shared with other AWS accounts.
- `dedicated` - The Capacity Reservation is created on single-tenant hardware that is dedicated to a single AWS account.

Type: String

Valid Values: `default | dedicated`

Required: No

**totalInstanceCount**

The total number of instances for which the Capacity Reservation reserves capacity.

Type: Integer

Required: No

**unusedReservationBillingOwnerId**

The ID of the AWS account to which billing of the unused capacity of the Capacity Reservation is assigned.

Type: String

Length Constraints: Fixed length of 12.

Pattern: `[0-9]{12}`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationBillingRequest

Information about a request to assign billing of the unused capacity of a Capacity Reservation.

## Contents

**capacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: No

**capacityReservationInfo**

Information about the Capacity Reservation.

Type: CapacityReservationInfo object

Required: No

**lastUpdateTime**

The date and time, in UTC time format, at which the request was initiated.

Type: Timestamp

Required: No

**requestedBy**

The ID of the AWS account that initiated the request.

Type: String

Required: No

**status**

The status of the request. For more information, see View billing assignment requests for a shared Amazon EC2 Capacity Reservation.

Type: String

Valid Values: `pending | accepted | rejected | cancelled | revoked | expired`

Required: No

**statusMessage**

Information about the status.

Type: String

Required: No

**unusedReservationBillingOwnerId**

The ID of the AWS account to which the request was sent.

Type: String

Length Constraints: Fixed length of 12.

Pattern: `[0-9]{12}`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationCancellationQuote

Describes a Capacity Reservation cancellation quote, which provides the cancellation terms for cancelling a future-dated Capacity Reservation during its commitment duration.

## Contents

**CancellationTermSet.N**

The cancellation terms associated with the quote, including the fee type and charge details.

Type: Array of CancellationTerms objects

Required: No

**capacityReservationCancellationQuoteId**

The ID of the cancellation quote.

Type: String

Required: No

**capacityReservationId**

The ID of the Capacity Reservation associated with the cancellation quote.

Type: String

Required: No

**createTime**

The date and time at which the cancellation quote was created.

Type: Timestamp

Required: No

**currentConfiguration**

The current configuration of the Capacity Reservation.

Type: CapacityReservationConfiguration object

Required: No

**expirationTime**

The date and time at which the cancellation quote expires.

Type: Timestamp

Required: No

**quoteState**

The state of the cancellation quote. Possible values include `pending`, `active`, and `expired`.

Type: String

Valid Values: `pending | active | expired`

Required: No

**TagSet.N**

The tags assigned to the cancellation quote.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationCommitmentInfo

Information about your commitment for a future-dated Capacity Reservation.

## Contents

**commitmentEndDate**

The date and time at which the commitment duration expires, in the ISO8601 format in the UTC time zone (`YYYY-MM-DDThh:mm:ss.sssZ`). You can't decrease the instance count or cancel the Capacity Reservation before this date and time.

Type: Timestamp

Required: No

**committedInstanceCount**

The instance capacity that you committed to when you requested the future-dated Capacity Reservation.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationConfiguration

Describes the configuration of a Capacity Reservation.

## Contents

**instanceCount**

The number of instances in the Capacity Reservation.

Type: Integer

Required: No

**reservationState**

The current state of the Capacity Reservation.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationFleet

Information about a Capacity Reservation Fleet.

## Contents

**allocationStrategy**

The strategy used by the Capacity Reservation Fleet to determine which of the specified instance types to use. For more information, see For more information, see Allocation strategy in the *Amazon EC2 User Guide*.

Type: String

Required: No

**capacityReservationFleetArn**

The ARN of the Capacity Reservation Fleet.

Type: String

Required: No

**capacityReservationFleetId**

The ID of the Capacity Reservation Fleet.

Type: String

Required: No

**createTime**

The date and time at which the Capacity Reservation Fleet was created.

Type: Timestamp

Required: No

**endDate**

The date and time at which the Capacity Reservation Fleet expires.

Type: Timestamp

Required: No

**instanceMatchCriteria**

Indicates the type of instance launches that the Capacity Reservation Fleet accepts. All Capacity Reservations in the Fleet inherit this instance matching criteria.

Currently, Capacity Reservation Fleets support `open` instance matching criteria only. This means that instances that have matching attributes (instance type, platform, and Availability Zone) run in the Capacity Reservations automatically. Instances do not need to explicitly target a Capacity Reservation Fleet to use its reserved capacity.

Type: String

Valid Values: `open`

Required: No

**InstanceTypeSpecificationSet.N**

Information about the instance types for which to reserve the capacity.

Type: Array of FleetCapacityReservation objects

Required: No

**state**

The state of the Capacity Reservation Fleet. Possible states include:

- `submitted` - The Capacity Reservation Fleet request has been submitted and Amazon Elastic Compute Cloud is preparing to create the Capacity Reservations.
- `modifying` - The Capacity Reservation Fleet is being modified. The Fleet remains in this state until the modification is complete.
- `active` - The Capacity Reservation Fleet has fulfilled its total target capacity and it is attempting to maintain this capacity. The Fleet remains in this state until it is modified or deleted.
- `partially_fulfilled` - The Capacity Reservation Fleet has partially fulfilled its total target capacity. There is insufficient Amazon EC2 to fulfill the total target capacity. The Fleet is attempting to asynchronously fulfill its total target capacity.
- `expiring` - The Capacity Reservation Fleet has reach its end date and it is in the process of expiring. One or more of its Capacity reservations might still be active.

- `expired` - The Capacity Reservation Fleet has reach its end date. The Fleet and its Capacity Reservations are expired. The Fleet can't create new Capacity Reservations.
- `cancelling` - The Capacity Reservation Fleet is in the process of being cancelled. One or more of its Capacity reservations might still be active.
- `cancelled` - The Capacity Reservation Fleet has been manually cancelled. The Fleet and its Capacity Reservations are cancelled and the Fleet can't create new Capacity Reservations.
- `failed` - The Capacity Reservation Fleet failed to reserve capacity for the specified instance types.

Type: String

Valid Values: `submitted | modifying | active | partially_fulfilled | expiring | expired | cancelling | cancelled | failed`

Required: No

**TagSet.N**

The tags assigned to the Capacity Reservation Fleet.

Type: Array of Tag objects

Required: No

**tenancy**

The tenancy of the Capacity Reservation Fleet. Tenancies include:

- `default` - The Capacity Reservation Fleet is created on hardware that is shared with other AWS accounts.
- `dedicated` - The Capacity Reservation Fleet is created on single-tenant hardware that is dedicated to a single AWS account.

Type: String

Valid Values: `default`

Required: No

**totalFulfilledCapacity**

The capacity units that have been fulfilled.

Type: Double

Required: No

**totalTargetCapacity**

The total number of capacity units for which the Capacity Reservation Fleet reserves capacity. For more information, see Total target capacity in the *Amazon EC2 User Guide*.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationFleetCancellationState

Describes a Capacity Reservation Fleet that was successfully cancelled.

## Contents

**capacityReservationFleetId**

The ID of the Capacity Reservation Fleet that was successfully cancelled.

Type: String

Required: No

**currentFleetState**

The current state of the Capacity Reservation Fleet.

Type: String

Valid Values: `submitted | modifying | active | partially_fulfilled | expiring | expired | cancelling | cancelled | failed`

Required: No

**previousFleetState**

The previous state of the Capacity Reservation Fleet.

Type: String

Valid Values: `submitted | modifying | active | partially_fulfilled | expiring | expired | cancelling | cancelled | failed`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationGroup

Describes a resource group to which a Capacity Reservation has been added.

## Contents

**groupArn**

The ARN of the resource group.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the resource group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationInfo

Information about a Capacity Reservation.

## Contents

**availabilityZone**

The Availability Zone for the Capacity Reservation.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**instanceType**

The instance type for the Capacity Reservation.

Type: String

Required: No

**tenancy**

The tenancy of the Capacity Reservation.

Type: String

Valid Values: `default | dedicated`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationOptions

Describes the strategy for using unused Capacity Reservations for fulfilling On-Demand capacity.

> **Note**
>
> This strategy can only be used if the EC2 Fleet is of type `instant`.

For more information about Capacity Reservations, see On-Demand Capacity Reservations in the *Amazon EC2 User Guide*. For examples of using Capacity Reservations in an EC2 Fleet, see EC2 Fleet example configurations in the *Amazon EC2 User Guide*.

## Contents

**usageStrategy**

Indicates whether to use unused Capacity Reservations for fulfilling On-Demand capacity.

If you specify `use-capacity-reservations-first`, the fleet uses unused Capacity Reservations to fulfill On-Demand capacity up to the target On-Demand capacity. If multiple instance pools have unused Capacity Reservations, the On-Demand allocation strategy (`lowest-price` or `prioritized`) is applied. If the number of unused Capacity Reservations is less than the On-Demand target capacity, the remaining On-Demand target capacity is launched according to the On-Demand allocation strategy (`lowest-price` or `prioritized`).

If you do not specify a value, the fleet fulfils the On-Demand capacity according to the chosen On-Demand allocation strategy.

Type: String

Valid Values: `use-capacity-reservations-first`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationOptionsRequest

Describes the strategy for using unused Capacity Reservations for fulfilling On-Demand capacity.

> **Note**
>
> This strategy can only be used if the EC2 Fleet is of type `instant`.

For more information about Capacity Reservations, see On-Demand Capacity Reservations in the *Amazon EC2 User Guide*. For examples of using Capacity Reservations in an EC2 Fleet, see EC2 Fleet example configurations in the *Amazon EC2 User Guide*.

## Contents

**UsageStrategy**

Indicates whether to use unused Capacity Reservations for fulfilling On-Demand capacity.

If you specify `use-capacity-reservations-first`, the fleet uses unused Capacity Reservations to fulfill On-Demand capacity up to the target On-Demand capacity. If multiple instance pools have unused Capacity Reservations, the On-Demand allocation strategy (`lowest-price` or `prioritized`) is applied. If the number of unused Capacity Reservations is less than the On-Demand target capacity, the remaining On-Demand target capacity is launched according to the On-Demand allocation strategy (`lowest-price` or `prioritized`).

If you do not specify a value, the fleet fulfils the On-Demand capacity according to the chosen On-Demand allocation strategy.

Type: String

Valid Values: `use-capacity-reservations-first`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationSpecification

Describes an instance's Capacity Reservation targeting option.

Use the `CapacityReservationPreference` parameter to configure the instance to run as an On-Demand Instance, to run in any `open` Capacity Reservation that has matching attributes, or to run only in a Capacity Reservation or Capacity Reservation group. Use the `CapacityReservationTarget` parameter to explicitly target a specific Capacity Reservation or a Capacity Reservation group.

You can only specify `CapacityReservationPreference` and `CapacityReservationTarget` if the `CapacityReservationPreference` is `capacity-reservations-only`.

## Contents

**CapacityReservationPreference**

Indicates the instance's Capacity Reservation preferences. Possible preferences include:

- `capacity-reservations-only` - The instance will only run in a Capacity Reservation or Capacity Reservation group. If capacity isn't available, the instance will fail to launch.
- `open` - The instance can run in any `open` Capacity Reservation that has matching attributes (instance type, platform, Availability Zone, and tenancy). If capacity isn't available, the instance runs as an On-Demand Instance.
- `none` - The instance doesn't run in a Capacity Reservation even if one is available. The instance runs as an On-Demand Instance.

Type: String

Valid Values: `capacity-reservations-only | open | none`

Required: No

**CapacityReservationTarget**

Information about the target Capacity Reservation or Capacity Reservation group.

Type: CapacityReservationTarget object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationSpecificationResponse

Describes the instance's Capacity Reservation targeting preferences. The action returns the `capacityReservationPreference` response element if the instance is configured to run in On-Demand capacity, or if it is configured in run in any `open` Capacity Reservation that has matching attributes (instance type, platform, Availability Zone). The action returns the `capacityReservationTarget` response element if the instance explicily targets a specific Capacity Reservation or Capacity Reservation group.

## Contents

**capacityReservationPreference**

Describes the instance's Capacity Reservation preferences. Possible preferences include:

- `open` - The instance can run in any `open` Capacity Reservation that has matching attributes (instance type, platform, Availability Zone).
- `none` - The instance avoids running in a Capacity Reservation even if one is available. The instance runs in On-Demand capacity.

Type: String

Valid Values: `capacity-reservations-only | open | none`

Required: No

**capacityReservationTarget**

Information about the targeted Capacity Reservation or Capacity Reservation group.

Type: CapacityReservationTargetResponse object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# CapacityReservationStatus

Describes the availability of capacity for a Capacity Reservation.

## Contents

**capacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: No

**totalAvailableCapacity**

The remaining capacity. Indicates the amount of resources that can be launched into the Capacity Reservation.

Type: Integer

Required: No

**totalCapacity**

The combined amount of `Available` and `Unavailable` capacity in the Capacity Reservation.

Type: Integer

Required: No

**totalUnavailableCapacity**

The used capacity. Indicates that the capacity is in use by resources that are running in the Capacity Reservation.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationTarget

Describes a target Capacity Reservation or Capacity Reservation group.

## Contents

**CapacityReservationId**

The ID of the Capacity Reservation in which to run the instance.

Type: String

Required: No

**CapacityReservationResourceGroupArn**

The ARN of the Capacity Reservation resource group in which to run the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationTargetResponse

Describes a target Capacity Reservation or Capacity Reservation group.

## Contents

**capacityReservationId**

The ID of the targeted Capacity Reservation.

Type: String

Required: No

**capacityReservationResourceGroupArn**

The ARN of the targeted Capacity Reservation group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CapacityReservationTopology

Information about the Capacity Reservation topology.

## Contents

**availabilityZone**

The name of the Availability Zone or Local Zone that the Capacity Reservation is in.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone or Local Zone that the Capacity Reservation is in.

Type: String

Required: No

**capacityBlockId**

The ID of the Capacity Block. This parameter is only supported for UltraServer instances and identifies instances within the UltraServer domain.

Type: String

Required: No

**capacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: No

**groupName**

The name of the placement group that the Capacity Reservation is in.

Type: String

Required: No

**instanceType**

The instance type.

Type: String

Required: No

**NetworkNodeSet.N**

The network nodes. The nodes are hashed based on your account. Capacity Reservations from different accounts running under the same server will return a different hashed list of strings.

The value is `null` or empty if:

- The instance type is not supported.
- The Capacity Reservation is in a state other than `active` or `pending`.

Type: Array of strings

Required: No

**state**

The current state of the Capacity Reservation. For the list of possible states, see DescribeCapacityReservations.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CarrierGateway

Describes a carrier gateway.

## Contents

**carrierGatewayId**

The ID of the carrier gateway.

Type: String

Required: No

**ownerId**

The AWS account ID of the owner of the carrier gateway.

Type: String

Required: No

**state**

The state of the carrier gateway.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

**TagSet.N**

The tags assigned to the carrier gateway.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC associated with the carrier gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CertificateAuthentication

Information about the client certificate used for authentication.

## Contents

**clientRootCertificateChain**

The ARN of the client certificate.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CertificateAuthenticationRequest

Information about the client certificate to be used for authentication.

## Contents

**ClientRootCertificateChainArn**

The ARN of the client certificate. The certificate must be signed by a certificate authority (CA) and it must be provisioned in AWS Certificate Manager (ACM).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CidrAuthorizationContext

Provides authorization for Amazon to bring a specific IP address range to a specific AWS account using bring your own IP addresses (BYOIP). For more information, see Configuring your BYOIP address range in the *Amazon EC2 User Guide*.

## Contents

**Message**

The plain-text authorization message for the prefix and account.

Type: String

Required: Yes

**Signature**

The signed authorization message for the prefix and account.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CidrBlock

Describes an IPv4 CIDR block.

## Contents

**cidrBlock**

The IPv4 CIDR block.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClassicLinkDnsSupport

> **Note**
>
> Deprecated.

Describes the ClassicLink DNS support status of a VPC.

## Contents

**classicLinkDnsSupported**

Indicates whether ClassicLink DNS support is enabled for the VPC.

Type: Boolean

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClassicLinkInstance

> **Note**
>
> Deprecated.

Describes a linked EC2-Classic instance.

## Contents

**GroupSet.N**

The security groups.

Type: Array of GroupIdentifier objects

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the instance.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClassicLoadBalancer

Describes a Classic Load Balancer.

## Contents

**Name** (request), **name** (response)

The name of the load balancer.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClassicLoadBalancersConfig

Describes the Classic Load Balancers to attach to a Spot Fleet. Spot Fleet registers the running Spot Instances with these Classic Load Balancers.

## Contents

**ClassicLoadBalancers.N**

One or more Classic Load Balancers.

Type: Array of ClassicLoadBalancer objects

Array Members: Minimum number of 1 item. Maximum number of 5 items.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientCertificateRevocationListStatus

Describes the state of a client certificate revocation list.

## Contents

**code**

The state of the client certificate revocation list.

Type: String

Valid Values: `pending | active`

Required: No

**message**

A message about the status of the client certificate revocation list, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientConnectOptions

The options for managing connection authorization for new client connections.

## Contents

**Enabled**

Indicates whether client connect options are enabled. The default is `false` (not enabled).

Type: Boolean

Required: No

**LambdaFunctionArn**

The Amazon Resource Name (ARN) of the Lambda function used for connection authorization.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientConnectResponseOptions

The options for managing connection authorization for new client connections.

## Contents

**enabled**

Indicates whether client connect options are enabled.

Type: Boolean

Required: No

**lambdaFunctionArn**

The Amazon Resource Name (ARN) of the Lambda function used for connection authorization.

Type: String

Required: No

**status**

The status of any updates to the client connect options.

Type: ClientVpnEndpointAttributeStatus object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientData

Describes the client-specific data.

## Contents

**Comment**

A user-defined comment about the disk upload.

Type: String

Required: No

**UploadEnd**

The time that the disk upload ends.

Type: Timestamp

Required: No

**UploadSize**

The size of the uploaded disk image, in GiB.

Type: Double

Required: No

**UploadStart**

The time that the disk upload starts.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientLoginBannerOptions

Options for enabling a customizable text banner that will be displayed on AWS provided clients when a VPN session is established.

## Contents

**BannerText**

Customizable text that will be displayed in a banner on AWS provided clients when a VPN session is established. UTF-8 encoded characters only. Maximum of 1400 characters.

Type: String

Required: No

**Enabled**

Enable or disable a customizable text banner that will be displayed on AWS provided clients when a VPN session is established.

Valid values: `true | false`

Default value: `false`

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientLoginBannerResponseOptions

Current state of options for customizable text banner that will be displayed on AWS provided clients when a VPN session is established.

## Contents

**bannerText**

Customizable text that will be displayed in a banner on AWS provided clients when a VPN session is established. UTF-8 encoded characters only. Maximum of 1400 characters.

Type: String

Required: No

**enabled**

Current state of text banner feature.

Valid values: `true | false`

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientRouteEnforcementOptions

Client Route Enforcement is a feature of Client VPN that helps enforce administrator defined routes on devices connected through the VPN. This feature helps improve your security posture by ensuring that network traffic originating from a connected client is not inadvertently sent outside the VPN tunnel.

Client Route Enforcement works by monitoring the route table of a connected device for routing policy changes to the VPN connection. If the feature detects any VPN routing policy modifications, it will automatically force an update to the route table, reverting it back to the expected route configurations.

## Contents

**Enforced**

Enable or disable Client Route Enforcement. The state can either be `true` (enabled) or `false` (disabled). The default is `false`.

Valid values: `true | false`

Default value: `false`

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientRouteEnforcementResponseOptions

The current status of Client Route Enforcement.

## Contents

**enforced**

Status of the client route enforcement feature, indicating whether Client Route Enforcement is `true` (enabled) or `false` (disabled).

Valid values: `true | false`

Default value: `false`

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientVpnAuthentication

Describes the authentication methods used by a Client VPN endpoint. For more information, see Authentication in the *AWS Client VPN Administrator Guide*.

## Contents

**activeDirectory**

Information about the Active Directory, if applicable.

Type: DirectoryServiceAuthentication object

Required: No

**federatedAuthentication**

Information about the IAM SAML identity provider, if applicable.

Type: FederatedAuthentication object

Required: No

**mutualAuthentication**

Information about the authentication certificates, if applicable.

Type: CertificateAuthentication object

Required: No

**type**

The authentication type used.

Type: String

Valid Values: `certificate-authentication | directory-service-authentication | federated-authentication`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientVpnAuthenticationRequest

Describes the authentication method to be used by a Client VPN endpoint. For more information, see Authentication in the *AWS Client VPN Administrator Guide*.

## Contents

**ActiveDirectory**

Information about the Active Directory to be used, if applicable. You must provide this information if **Type** is `directory-service-authentication`.

Type: DirectoryServiceAuthenticationRequest object

Required: No

**FederatedAuthentication**

Information about the IAM SAML identity provider to be used, if applicable. You must provide this information if **Type** is `federated-authentication`.

Type: FederatedAuthenticationRequest object

Required: No

**MutualAuthentication**

Information about the authentication certificates to be used, if applicable. You must provide this information if **Type** is `certificate-authentication`.

Type: CertificateAuthenticationRequest object

Required: No

**Type**

The type of client authentication to be used.

Type: String

Valid Values: `certificate-authentication | directory-service-authentication | federated-authentication`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientVpnAuthorizationRuleStatus

Describes the state of an authorization rule.

## Contents

**code**

The state of the authorization rule.

Type: String

Valid Values: `authorizing | active | failed | revoking`

Required: No

**message**

A message about the status of the authorization rule, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientVpnConnection

Describes a client connection.

## Contents

**clientIp**

The IP address of the client.

Type: String

Required: No

**clientIpv6Address**

The IPv6 address assigned to the client connection when using a dual-stack Client VPN endpoint. This field is only populated when the endpoint is configured for dual-stack addressing, and the client is using IPv6 for connectivity.

Type: String

Required: No

**clientVpnEndpointId**

The ID of the Client VPN endpoint to which the client is connected.

Type: String

Required: No

**commonName**

The common name associated with the client. This is either the name of the client certificate, or the Active Directory user name.

Type: String

Required: No

**connectionEndTime**

The date and time the client connection was terminated.

Type: String

Required: No

**connectionEstablishedTime**

The date and time the client connection was established.

Type: String

Required: No

**connectionId**

The ID of the client connection.

Type: String

Required: No

**egressBytes**

The number of bytes received by the client.

Type: String

Required: No

**egressPackets**

The number of packets received by the client.

Type: String

Required: No

**ingressBytes**

The number of bytes sent by the client.

Type: String

Required: No

**ingressPackets**

The number of packets sent by the client.

Type: String

Required: No

**PostureComplianceStatusSet.N**

The statuses returned by the client connect handler for posture compliance, if applicable.

Type: Array of strings

Required: No

**status**

The current state of the client connection.

Type: ClientVpnConnectionStatus object

Required: No

**timestamp**

The current date and time.

Type: String

Required: No

**username**

The username of the client who established the client connection. This information is only provided if Active Directory client authentication is used.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# ClientVpnConnectionStatus

Describes the status of a client connection.

## Contents

**code**

The state of the client connection.

Type: String

Valid Values: `active | failed-to-terminate | terminating | terminated`

Required: No

**message**

A message about the status of the client connection, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientVpnEndpoint

Describes a Client VPN endpoint.

## Contents

**AssociatedTargetNetwork.N**

*This member has been deprecated.*

Information about the associated target networks. A target network is a subnet in a VPC.

Type: Array of AssociatedTargetNetwork objects

Required: No

**AuthenticationOptions.N**

Information about the authentication method used by the Client VPN endpoint.

Type: Array of ClientVpnAuthentication objects

Required: No

**clientCidrBlock**

The IPv4 address range, in CIDR notation, from which client IP addresses are assigned.

Type: String

Required: No

**clientConnectOptions**

The options for managing connection authorization for new client connections.

Type: ClientConnectResponseOptions object

Required: No

**clientLoginBannerOptions**

Options for enabling a customizable text banner that will be displayed on AWS provided clients when a VPN session is established.

Type: ClientLoginBannerResponseOptions object

Required: No

**clientRouteEnforcementOptions**

Client route enforcement is a feature of the Client VPN service that helps enforce administrator defined routes on devices connected through the VPN. T his feature helps improve your security posture by ensuring that network traffic originating from a connected client is not inadvertently sent outside the VPN tunnel.

Client route enforcement works by monitoring the route table of a connected device for routing policy changes to the VPN connection. If the feature detects any VPN routing policy modifications, it will automatically force an update to the route table, reverting it back to the expected route configurations.

Type: ClientRouteEnforcementResponseOptions object

Required: No

**clientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: No

**connectionLogOptions**

Information about the client connection logging options for the Client VPN endpoint.

Type: ConnectionLogResponseOptions object

Required: No

**creationTime**

The date and time the Client VPN endpoint was created.

Type: String

Required: No

**deletionTime**

The date and time the Client VPN endpoint was deleted, if applicable.

Type: String

Required: No

**description**

A brief description of the endpoint.

Type: String

Required: No

**disconnectOnSessionTimeout**

Indicates whether the client VPN session is disconnected after the maximum `sessionTimeoutHours` is reached. If `true`, users are prompted to reconnect client VPN. If `false`, client VPN attempts to reconnect automatically. The default value is `true`.

Type: Boolean

Required: No

**dnsName**

The DNS name to be used by clients when connecting to the Client VPN endpoint.

Type: String

Required: No

**DnsServer.N**

Information about the DNS servers to be used for DNS resolution.

Type: Array of strings

Required: No

**endpointIpAddressType**

The IP address type of the Client VPN endpoint. Possible values are `ipv4` for IPv4 addressing only, `ipv6` for IPv6 addressing only, or `dual-stack` for both IPv4 and IPv6 addressing.

Type: String

Valid Values: `ipv4 | ipv6 | dual-stack`

Required: No

**SecurityGroupIdSet.N**

The IDs of the security groups for the target network.

Type: Array of strings

Required: No

**selfServicePortalUrl**

The URL of the self-service portal.

Type: String

Required: No

**serverCertificateArn**

The ARN of the server certificate.

Type: String

Required: No

**sessionTimeoutHours**

The maximum VPN session duration time in hours.

Valid values: `8 | 10 | 12 | 24`

Default value: `24`

Type: Integer

Required: No

**splitTunnel**

Indicates whether split-tunnel is enabled in the AWS Client VPN endpoint.

For information about split-tunnel VPN endpoints, see Split-Tunnel AWS Client VPN endpoint in the *AWS Client VPN Administrator Guide*.

Type: Boolean

Required: No

**status**

The current state of the Client VPN endpoint.

Type: ClientVpnEndpointStatus object

Required: No

**TagSet.N**

Any tags assigned to the Client VPN endpoint.

Type: Array of Tag objects

Required: No

**trafficIpAddressType**

The IP address type of the Client VPN endpoint. Possible values are either `ipv4` for IPv4 addressing only, `ipv6` for IPv6 addressing only, or `dual-stack` for both IPv4 and IPv6 addressing.

Type: String

Valid Values: `ipv4 | ipv6 | dual-stack`

Required: No

**transitGatewayConfiguration**

The Transit Gateway configuration for the Client VPN endpoint.

Type: TransitGatewayConfigurationDescribeEndpointStructure object

Required: No

**transportProtocol**

The transport protocol used by the Client VPN endpoint.

Type: String

Valid Values: `tcp | udp`

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

**vpnPort**

The port number for the Client VPN endpoint.

Type: Integer

Required: No

**vpnProtocol**

The protocol used by the VPN session.

Type: String

Valid Values: openvpn

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientVpnEndpointAttributeStatus

Describes the status of the Client VPN endpoint attribute.

## Contents

**code**

The status code.

Type: String

Valid Values: `applying | applied`

Required: No

**message**

The status message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientVpnEndpointStatus

Describes the state of a Client VPN endpoint.

## Contents

**code**

The state of the Client VPN endpoint. Possible states include:

- `pending-associate` - The Client VPN endpoint has been created but no target networks have been associated. The Client VPN endpoint cannot accept connections.
- `available` - The Client VPN endpoint has been created and a target network has been associated. The Client VPN endpoint can accept connections.
- `deleting` - The Client VPN endpoint is being deleted. The Client VPN endpoint cannot accept connections.
- `deleted` - The Client VPN endpoint has been deleted. The Client VPN endpoint cannot accept connections.
- `pending` - The Client VPN endpoint has been created with a Transit Gateway configuration and is waiting for the Transit Gateway attachment to be accepted. The Client VPN endpoint cannot accept connections.

Type: String

Valid Values: `pending-associate | available | deleting | deleted | pending`

Required: No

**message**

A message about the status of the Client VPN endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientVpnRoute

Information about a Client VPN endpoint route.

## Contents

**clientVpnEndpointId**

The ID of the Client VPN endpoint with which the route is associated.

Type: String

Required: No

**description**

A brief description of the route.

Type: String

Required: No

**destinationCidr**

The IPv4 address range, in CIDR notation, of the route destination.

Type: String

Required: No

**origin**

Indicates how the route was associated with the Client VPN endpoint. `associate` indicates that the route was automatically added when the target network was associated with the Client VPN endpoint. `add-route` indicates that the route was manually added using the **CreateClientVpnRoute** action.

Type: String

Required: No

**status**

The current state of the route.

Type: ClientVpnRouteStatus object

Required: No

**targetSubnet**

The ID of the subnet through which traffic is routed.

Type: String

Required: No

**transitGatewayAttachmentId**

The ID of the Transit Gateway attachment, if the route targets a Transit Gateway.

Type: String

Required: No

**type**

The route type.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ClientVpnRouteStatus

Describes the state of a Client VPN endpoint route.

## Contents

**code**

The state of the Client VPN endpoint route.

Type: String

Valid Values: `creating | active | failed | deleting`

Required: No

**message**

A message about the status of the Client VPN endpoint route, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CloudWatchLogOptions

Options for sending VPN tunnel logs to CloudWatch.

## Contents

**bgpLogEnabled**

Indicates whether Border Gateway Protocol (BGP) logging is enabled for the VPN connection. Default value is `False`.

Valid values: `True` | `False`

Type: Boolean

Required: No

**bgpLogGroupArn**

The Amazon Resource Name (ARN) of the CloudWatch log group for BGP logs.

Type: String

Required: No

**bgpLogOutputFormat**

The output format for BGP logs sent to CloudWatch. Default format is `json`.

Valid values: `json` | `text`

Type: String

Required: No

**logEnabled**

Status of VPN tunnel logging feature. Default value is `False`.

Valid values: `True` | `False`

Type: Boolean

Required: No

**logGroupArn**

The Amazon Resource Name (ARN) of the CloudWatch log group to send logs to.

Type: String

Required: No

**logOutputFormat**

Configured log format. Default format is `json`.

Valid values: `json` | `text`

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CloudWatchLogOptionsSpecification

Options for sending VPN tunnel logs to CloudWatch.

## Contents

**BgpLogEnabled**

Specifies whether to enable BGP logging for the VPN connection. Default value is `False`.

Valid values: `True` | `False`

Type: Boolean

Required: No

**BgpLogGroupArn**

The Amazon Resource Name (ARN) of the CloudWatch log group where BGP logs will be sent.

Type: String

Required: No

**BgpLogOutputFormat**

The desired output format for BGP logs to be sent to CloudWatch. Default format is `json`.

Valid values: `json` | `text`

Type: String

Required: No

**LogEnabled**

Enable or disable VPN tunnel logging feature. Default value is `False`.

Valid values: `True` | `False`

Type: Boolean

Required: No

**LogGroupArn**

The Amazon Resource Name (ARN) of the CloudWatch log group to send logs to.

Type: String

Required: No

**LogOutputFormat**

Set log format. Default format is `json`.

Valid values: `json` | `text`

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CoipAddressUsage

Describes address usage for a customer-owned address pool.

## Contents

**allocationId**

The allocation ID of the address.

Type: String

Required: No

**awsAccountId**

The AWS account ID.

Type: String

Required: No

**awsService**

The AWS service.

Type: String

Required: No

**coIp**

The customer-owned IP address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CoipCidr

Information about a customer-owned IP address range.

## Contents

**cidr**

An address range in a customer-owned IP address space.

Type: String

Required: No

**coipPoolId**

The ID of the address pool.

Type: String

Required: No

**localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CoipPool

Describes a customer-owned address pool.

## Contents

**localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: No

**poolArn**

The ARN of the address pool.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**PoolCidrSet.N**

The address ranges of the address pool.

Type: Array of strings

Required: No

**poolId**

The ID of the address pool.

Type: String

Required: No

**TagSet.N**

The tags.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ConnectionLogOptions

Describes the client connection logging options for the Client VPN endpoint.

## Contents

**CloudwatchLogGroup**

The name of the CloudWatch Logs log group. Required if connection logging is enabled.

Type: String

Required: No

**CloudwatchLogStream**

The name of the CloudWatch Logs log stream to which the connection data is published.

Type: String

Required: No

**Enabled**

Indicates whether connection logging is enabled.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ConnectionLogResponseOptions

Information about the client connection logging options for a Client VPN endpoint.

## Contents

**CloudwatchLogGroup**

The name of the Amazon CloudWatch Logs log group to which connection logging data is published.

Type: String

Required: No

**CloudwatchLogStream**

The name of the Amazon CloudWatch Logs log stream to which connection logging data is published.

Type: String

Required: No

**Enabled**

Indicates whether client connection logging is enabled for the Client VPN endpoint.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ConnectionNotification

Describes a connection notification for a VPC endpoint or VPC endpoint service.

## Contents

**ConnectionEvents.N**

The events for the notification. Valid values are `Accept`, `Connect`, `Delete`, and `Reject`.

Type: Array of strings

Required: No

**connectionNotificationArn**

The ARN of the SNS topic for the notification.

Type: String

Required: No

**connectionNotificationId**

The ID of the notification.

Type: String

Required: No

**connectionNotificationState**

The state of the notification.

Type: String

Valid Values: `Enabled | Disabled`

Required: No

**connectionNotificationType**

The type of notification.

Type: String

Valid Values: `Topic`

Required: No

**serviceId**

The ID of the endpoint service.

Type: String

Required: No

**serviceRegion**

The Region for the endpoint service.

Type: String

Required: No

**vpcEndpointId**

The ID of the VPC endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ConnectionTrackingConfiguration

A security group connection tracking configuration that enables you to set the idle timeout for connection tracking on an Elastic network interface. For more information, see Connection tracking timeouts in the *Amazon EC2 User Guide*.

## Contents

**tcpEstablishedTimeout**

Timeout (in seconds) for idle TCP connections in an established state. Min: 60 seconds. Max: 432000 seconds (5 days). Default: 350 seconds for Nitro v6 instance types (excluding P6e-GB200); 432000 seconds for all other instance types (including P6e-GB200). Recommended: Less than 432000 seconds.

Type: Integer

Required: No

**udpStreamTimeout**

Timeout (in seconds) for idle UDP flows classified as streams which have seen more than one request-response transaction. Min: 60 seconds. Max: 180 seconds (3 minutes). Default: 180 seconds.

Type: Integer

Required: No

**udpTimeout**

Timeout (in seconds) for idle UDP flows that have seen traffic only in a single direction or a single request-response transaction. Min: 30 seconds. Max: 60 seconds. Default: 30 seconds.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ConnectionTrackingSpecification

A security group connection tracking specification that enables you to set the idle timeout for connection tracking on an Elastic network interface. For more information, see Connection tracking timeouts in the *Amazon EC2 User Guide*.

## Contents

**tcpEstablishedTimeout**

Timeout (in seconds) for idle TCP connections in an established state. Min: 60 seconds. Max: 432000 seconds (5 days). Default: 350 seconds for Nitro v6 instance types (excluding P6e-GB200); 432000 seconds for all other instance types (including P6e-GB200). Recommended: Less than 432000 seconds.

Type: Integer

Required: No

**udpStreamTimeout**

Timeout (in seconds) for idle UDP flows classified as streams which have seen more than one request-response transaction. Min: 60 seconds. Max: 180 seconds (3 minutes). Default: 180 seconds.

Type: Integer

Required: No

**udpTimeout**

Timeout (in seconds) for idle UDP flows that have seen traffic only in a single direction or a single request-response transaction. Min: 30 seconds. Max: 60 seconds. Default: 30 seconds.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ConnectionTrackingSpecificationRequest

A security group connection tracking specification request that enables you to set the idle timeout for connection tracking on an Elastic network interface. For more information, see Connection tracking timeouts in the *Amazon EC2 User Guide*.

## Contents

**TcpEstablishedTimeout** (request), **TcpEstablishedTimeout** (response)

Timeout (in seconds) for idle TCP connections in an established state. Min: 60 seconds. Max: 432000 seconds (5 days). Default: 350 seconds for Nitro v6 instance types (excluding P6e-GB200); 432000 seconds for all other instance types (including P6e-GB200). Recommended: Less than 432000 seconds.

Type: Integer

Required: No

**UdpStreamTimeout** (request), **UdpStreamTimeout** (response)

Timeout (in seconds) for idle UDP flows classified as streams which have seen more than one request-response transaction. Min: 60 seconds. Max: 180 seconds (3 minutes). Default: 180 seconds.

Type: Integer

Required: No

**UdpTimeout** (request), **UdpTimeout** (response)

Timeout (in seconds) for idle UDP flows that have seen traffic only in a single direction or a single request-response transaction. Min: 30 seconds. Max: 60 seconds. Default: 30 seconds.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ConnectionTrackingSpecificationResponse

A security group connection tracking specification response that enables you to set the idle timeout for connection tracking on an Elastic network interface. For more information, see Connection tracking timeouts in the *Amazon EC2 User Guide*.

## Contents

**tcpEstablishedTimeout**

Timeout (in seconds) for idle TCP connections in an established state. Min: 60 seconds. Max: 432000 seconds (5 days). Default: 350 seconds for Nitro v6 instance types (excluding P6e-GB200); 432000 seconds for all other instance types (including P6e-GB200). Recommended: Less than 432000 seconds.

Type: Integer

Required: No

**udpStreamTimeout**

Timeout (in seconds) for idle UDP flows classified as streams which have seen more than one request-response transaction. Min: 60 seconds. Max: 180 seconds (3 minutes). Default: 180 seconds.

Type: Integer

Required: No

**udpTimeout**

Timeout (in seconds) for idle UDP flows that have seen traffic only in a single direction or a single request-response transaction. Min: 30 seconds. Max: 60 seconds. Default: 30 seconds.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ConversionTask

Describes a conversion task.

## Contents

**conversionTaskId**

The ID of the conversion task.

Type: String

Required: No

**expirationTime**

The time when the task expires. If the upload isn't complete before the expiration time, we automatically cancel the task.

Type: String

Required: No

**importInstance**

If the task is for importing an instance, this contains information about the import instance task.

Type: ImportInstanceTaskDetails object

Required: No

**importVolume**

If the task is for importing a volume, this contains information about the import volume task.

Type: ImportVolumeTaskDetails object

Required: No

**state**

The state of the conversion task.

Type: String

Valid Values: `active | cancelling | cancelled | completed`

Required: No

**statusMessage**

The status message related to the conversion task.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the task.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CpuOptions

The CPU options for the instance.

## Contents

**amdSevSnp**

Indicates whether the instance is enabled for AMD SEV-SNP. For more information, see AMD SEV-SNP.

Type: String

Valid Values: `enabled | disabled`

Required: No

**coreCount**

The number of CPU cores for the instance.

Type: Integer

Required: No

**nestedVirtualization**

Indicates whether the instance is enabled for nested virtualization.

Type: String

Valid Values: `enabled | disabled`

Required: No

**threadsPerCore**

The number of threads per CPU core.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CpuOptionsRequest

The CPU options for the instance. Both the core count and threads per core must be specified in the request.

## Contents

**AmdSevSnp**

Indicates whether to enable the instance for AMD SEV-SNP. AMD SEV-SNP is supported with M6a, R6a, and C6a instance types only. For more information, see AMD SEV-SNP.

Type: String

Valid Values: `enabled | disabled`

Required: No

**CoreCount**

The number of CPU cores for the instance.

Type: Integer

Required: No

**NestedVirtualization**

Indicates whether to enable the instance for nested virtualization. Nested virtualization is supported only on 8th generation Intel-based instance types (c8i, m8i, r8i, and their flex variants). When nested virtualization is enabled, Virtual Secure Mode (VSM) is automatically disabled for the instance.

Type: String

Valid Values: `enabled | disabled`

Required: No

**ThreadsPerCore**

The number of threads per CPU core. To disable multithreading for the instance, specify a value of 1. Otherwise, specify the default value of 2.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CpuPerformanceFactor

The CPU performance to consider, using an instance family as the baseline reference.

## Contents

**ReferenceSet.N**

Specify an instance family to use as the baseline reference for CPU performance. All instance types that match your specified attributes will be compared against the CPU performance of the referenced instance family, regardless of CPU manufacturer or architecture differences.

> **Note**
>
> Currently, only one instance family can be specified in the list.

Type: Array of PerformanceFactorReference objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CpuPerformanceFactorRequest

The CPU performance to consider, using an instance family as the baseline reference.

## Contents

**Reference.N**

Specify an instance family to use as the baseline reference for CPU performance. All instance types that match your specified attributes will be compared against the CPU performance of the referenced instance family, regardless of CPU manufacturer or architecture differences.

> **Note**
>
> Currently, only one instance family can be specified in the list.

Type: Array of PerformanceFactorReferenceRequest objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateFleetError

Describes the instances that could not be launched by the fleet.

## Contents

**errorCode**

The error code that indicates why the instance could not be launched. For more information about error codes, see Error codes.

Type: String

Required: No

**errorMessage**

The error message that describes why the instance could not be launched. For more information about error messages, see Error codes.

Type: String

Required: No

**launchTemplateAndOverrides**

The launch templates and overrides that were used for launching the instances. The values that you specify in the Overrides replace the values in the launch template.

Type: LaunchTemplateAndOverridesResponse object

Required: No

**lifecycle**

Indicates if the instance that could not be launched was a Spot, On-Demand, Capacity Block, or Interruptible Capacity Reservation instance.

Type: String

Valid Values: `spot | on-demand | interruptible-capacity-reservation`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateFleetInstance

Describes the instances that were launched by the fleet.

## Contents

**InstanceIds.N**

The IDs of the instances.

Type: Array of strings

Required: No

**instanceType**

The instance type.

Type: String

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge

| d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge

| m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge

| x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge |

r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal

| m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge

`| r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge`

Required: No

**launchTemplateAndOverrides**

The launch templates and overrides that were used for launching the instances. The values that you specify in the Overrides replace the values in the launch template.

Type: LaunchTemplateAndOverridesResponse object

Required: No

**lifecycle**

Indicates if the instance that was launched is a Spot, On-Demand, Capacity Block, or Interruptible Capacity Reservation instance.

Type: String

Valid Values: `spot | on-demand | interruptible-capacity-reservation`

Required: No

**platform**

The value is `windows` for Windows instances in an EC2 Fleet. Otherwise, the value is blank.

Type: String

Valid Values: `Windows`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateTransitGatewayConnectRequestOptions

The options for a Connect attachment.

## Contents

**Protocol**

The tunnel protocol.

Type: String

Valid Values: `gre`

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateTransitGatewayMulticastDomainRequestOptions

The options for the transit gateway multicast domain.

## Contents

**AutoAcceptSharedAssociations**

Indicates whether to automatically accept cross-account subnet associations that are associated with the transit gateway multicast domain.

Type: String

Valid Values: `enable | disable`

Required: No

**Igmpv2Support**

Specify whether to enable Internet Group Management Protocol (IGMP) version 2 for the transit gateway multicast domain.

Type: String

Valid Values: `enable | disable`

Required: No

**StaticSourcesSupport**

Specify whether to enable support for statically configuring multicast group sources for a domain.

Type: String

Valid Values: `enable | disable`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateTransitGatewayPeeringAttachmentRequestOptions

Describes whether dynamic routing is enabled or disabled for the transit gateway peering request.

## Contents

**DynamicRouting**

Indicates whether dynamic routing is enabled or disabled.

Type: String

Valid Values: `enable | disable`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateTransitGatewayVpcAttachmentRequestOptions

Describes the options for a VPC attachment.

## Contents

**ApplianceModeSupport**

Enable or disable support for appliance mode. If enabled, a traffic flow between a source and destination uses the same Availability Zone for the VPC attachment for the lifetime of that flow. The default is `disable`.

Type: String

Valid Values: `enable | disable`

Required: No

**DnsSupport**

Enable or disable DNS support. The default is `enable`.

Type: String

Valid Values: `enable | disable`

Required: No

**Ipv6Support**

Enable or disable IPv6 support. The default is `disable`.

Type: String

Valid Values: `enable | disable`

Required: No

**SecurityGroupReferencingSupport**

Enables you to reference a security group across VPCs attached to a transit gateway to simplify security group management.

This option is set to `enable` by default. However, at the transit gateway level the default is set to `disable`.

For more information about security group referencing, see Security group referencing in the *AWS Transit Gateways Guide*.

Type: String

Valid Values: `enable | disable`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateVerifiedAccessEndpointCidrOptions

Describes the CIDR options for a Verified Access endpoint.

## Contents

**Cidr**

The CIDR.

Type: String

Required: No

**PortRange.N**

The port ranges.

Type: Array of CreateVerifiedAccessEndpointPortRange objects

Required: No

**Protocol**

The protocol.

Type: String

Valid Values: `http | https | tcp`

Required: No

**SubnetId.N**

The IDs of the subnets.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateVerifiedAccessEndpointEniOptions

Describes the network interface options when creating an AWS Verified Access endpoint using the `network-interface` type.

## Contents

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**Port**

The IP port number.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**PortRange.N**

The port ranges.

Type: Array of CreateVerifiedAccessEndpointPortRange objects

Required: No

**Protocol**

The IP protocol.

Type: String

Valid Values: `http | https | tcp`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateVerifiedAccessEndpointLoadBalancerOptions

Describes the load balancer options when creating an AWS Verified Access endpoint using the `load-balancer` type.

## Contents

**LoadBalancerArn**

The ARN of the load balancer.

Type: String

Required: No

**Port**

The IP port number.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**PortRange.N**

The port ranges.

Type: Array of CreateVerifiedAccessEndpointPortRange objects

Required: No

**Protocol**

The IP protocol.

Type: String

Valid Values: `http | https | tcp`

Required: No

**SubnetId.N**

The IDs of the subnets. You can specify only one subnet per Availability Zone.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateVerifiedAccessEndpointPortRange

Describes the port range for a Verified Access endpoint.

## Contents

**FromPort**

The start of the port range.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**ToPort**

The end of the port range.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateVerifiedAccessEndpointRdsOptions

Describes the RDS options for a Verified Access endpoint.

## Contents

**Port**

The port.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**Protocol**

The protocol.

Type: String

Valid Values: `http | https | tcp`

Required: No

**RdsDbClusterArn**

The ARN of the DB cluster.

Type: String

Required: No

**RdsDbInstanceArn**

The ARN of the RDS instance.

Type: String

Required: No

**RdsDbProxyArn**

The ARN of the RDS proxy.

Type: String

Required: No

**RdsEndpoint**

The RDS endpoint.

Type: String

Required: No

**SubnetId.N**

The IDs of the subnets. You can specify only one subnet per Availability Zone.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateVerifiedAccessNativeApplicationOidcOptions

Describes the OpenID Connect (OIDC) options.

## Contents

**AuthorizationEndpoint**

The authorization endpoint of the IdP.

Type: String

Required: No

**ClientId**

The OAuth 2.0 client identifier.

Type: String

Required: No

**ClientSecret**

The OAuth 2.0 client secret.

Type: String

Required: No

**Issuer**

The OIDC issuer identifier of the IdP.

Type: String

Required: No

**PublicSigningKeyEndpoint**

The public signing key endpoint.

Type: String

Required: No

**Scope**

The set of user claims to be requested from the IdP.

Type: String

Required: No

**TokenEndpoint**

The token endpoint of the IdP.

Type: String

Required: No

**UserInfoEndpoint**

The user info endpoint of the IdP.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateVerifiedAccessTrustProviderDeviceOptions

Describes the options when creating an AWS Verified Access trust provider using the `device` type.

## Contents

**PublicSigningKeyUrl**

The URL AWS Verified Access will use to verify the authenticity of the device tokens.

Type: String

Required: No

**TenantId**

The ID of the tenant application with the device-identity provider.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateVerifiedAccessTrustProviderOidcOptions

Describes the options when creating an AWS Verified Access trust provider using the `user` type.

## Contents

**AuthorizationEndpoint**

The OIDC authorization endpoint.

Type: String

Required: No

**ClientId**

The client identifier.

Type: String

Required: No

**ClientSecret**

The client secret.

Type: String

Required: No

**Issuer**

The OIDC issuer.

Type: String

Required: No

**Scope**

OpenID Connect (OIDC) scopes are used by an application during authentication to authorize access to a user's details. Each scope returns a specific set of user attributes.

Type: String

Required: No

**TokenEndpoint**

The OIDC token endpoint.

Type: String

Required: No

**UserInfoEndpoint**

The OIDC user info endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateVolumePermission

Describes the user or group to be added or removed from the list of create volume permissions for a volume.

## Contents

**Group** (request), **group** (response)

The group to be added or removed. The possible value is `all`.

Type: String

Valid Values: `all`

Required: No

**UserId** (request), **userId** (response)

The ID of the AWS account to be added or removed.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreateVolumePermissionModifications

Describes modifications to the list of create volume permissions for a volume.

## Contents

**Add.N**

Adds the specified AWS account ID or group to the list.

Type: Array of CreateVolumePermission objects

Required: No

**Remove.N**

Removes the specified AWS account ID or group from the list.

Type: Array of CreateVolumePermission objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreationDateCondition

The maximum age for allowed images.

## Contents

**maximumDaysSinceCreated**

The maximum number of days that have elapsed since the image was created. For example, a value of `300` allows images that were created within the last 300 days.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 2147483647.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreationDateConditionRequest

The maximum age for allowed images.

## Contents

**MaximumDaysSinceCreated**

The maximum number of days that have elapsed since the image was created. For example, a value of `300` allows images that were created within the last 300 days.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 2147483647.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreditSpecification

Describes the credit option for CPU usage of a T instance.

## Contents

**cpuCredits**

The credit option for CPU usage of a T instance.

Valid values: `standard` | `unlimited`

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CreditSpecificationRequest

The credit option for CPU usage of a T instance.

## Contents

### CpuCredits

The credit option for CPU usage of a T instance.

Valid values: `standard` | `unlimited`

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# CustomerGateway

Describes a customer gateway.

## Contents

**bgpAsn**

The customer gateway device's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

Valid values: 1 to 2,147,483,647

Type: String

Required: No

**bgpAsnExtended**

The customer gateway device's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

Valid values: 2,147,483,648 to 4,294,967,295

Type: String

Required: No

**certificateArn**

The Amazon Resource Name (ARN) for the customer gateway certificate.

Type: String

Required: No

**customerGatewayId**

The ID of the customer gateway.

Type: String

Required: No

**deviceName**

The name of customer gateway device.

Type: String

Required: No

**ipAddress**

The IP address for the customer gateway device's outside interface. The address must be static. If `OutsideIpAddressType` in your VPN connection options is set to `PrivateIpv4`, you can use an RFC6598 or RFC1918 private IPv4 address. If `OutsideIpAddressType` is set to `PublicIpv4`, you can use a public IPv4 address. If `OutsideIpAddressType` is set to `Ipv6`, you can use a public IPv6 address.

Type: String

Required: No

**state**

The current state of the customer gateway (`pending | available | deleting | deleted`).

Type: String

Required: No

**TagSet.N**

Any tags assigned to the customer gateway.

Type: Array of Tag objects

Required: No

**type**

The type of VPN connection the customer gateway supports (`ipsec.1`).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DataQuery

A query used for retrieving network health data.

## Contents

**Destination**

The Region or Availability Zone that's the target for the data query. For example, `eu-north-1`.

Type: String

Required: No

**Id**

A user-defined ID associated with a data query that's returned in the `dataResponse` identifying the query. For example, if you set the Id to `MyQuery01`in the query, the `dataResponse` identifies the query as `MyQuery01`.

Type: String

Required: No

**Metric**

The metric used for the network performance request.

Type: String

Valid Values: `aggregate-latency`

Required: No

**Period**

The aggregation period used for the data query.

Type: String

Valid Values: `five-minutes | fifteen-minutes | one-hour | three-hours | one-day | one-week`

Required: No

**Source**

The Region or Availability Zone that's the source for the data query. For example, `us-east-1`.

Type: String

Required: No

**Statistic**

The metric data aggregation period, `p50`, between the specified `startDate` and `endDate`. For example, a metric of `five_minutes` is the median of all the data points gathered within those five minutes. `p50` is the only supported metric.

Type: String

Valid Values: `p50`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DataResponse

The response to a `DataQuery`.

## Contents

**destination**

The Region or Availability Zone that's the destination for the data query. For example, `eu-west-1`.

Type: String

Required: No

**id**

The ID passed in the `DataQuery`.

Type: String

Required: No

**metric**

The metric used for the network performance request.

Type: String

Valid Values: `aggregate-latency`

Required: No

**MetricPointSet.N**

A list of `MetricPoint` objects.

Type: Array of MetricPoint objects

Required: No

**period**

The period used for the network performance request.

Type: String

Valid Values: `five-minutes | fifteen-minutes | one-hour | three-hours | one-day | one-week`

Required: No

**source**

The Region or Availability Zone that's the source for the data query. For example, `us-east-1`.

Type: String

Required: No

**statistic**

The statistic used for the network performance request.

Type: String

Valid Values: `p50`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeclarativePoliciesReport

Describes the metadata of the account status report.

## Contents

**endTime**

The time when the report generation ended.

Type: Timestamp

Required: No

**reportId**

The ID of the report.

Type: String

Required: No

**s3Bucket**

The name of the Amazon S3 bucket where the report is located.

Type: String

Required: No

**s3Prefix**

The prefix for your S3 object.

Type: String

Required: No

**startTime**

The time when the report generation started.

Type: Timestamp

Required: No

**status**

The current status of the report.

Type: String

Valid Values: `running | cancelled | complete | error`

Required: No

**TagSet.N**

Any tags assigned to the report.

Type: Array of Tag objects

Required: No

**targetId**

The root ID, organizational unit ID, or account ID.

Format:

- For root: `r-ab12`
- For OU: `ou-ab12-cdef1234`
- For account: `123456789012`

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DefaultConnectionTrackingConfiguration

Indicates default conntrack information for the instance type. For more information, see Connection tracking timeouts in the Amazon EC2 User Guide.

## Contents

**defaultTcpEstablishedTimeout**

Default timeout (in seconds) for idle TCP connections in an established state.

Type: Integer

Required: No

**defaultUdpStreamTimeout**

Default timeout (in seconds) for idle UDP flows classified as streams which have seen more than one request-response transaction.

Type: Integer

Required: No

**defaultUdpTimeout**

Default timeout (in seconds) for idle UDP flows that have seen traffic only in a single direction or a single request-response transaction.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeleteFleetError

Describes an EC2 Fleet error.

## Contents

**code**

The error code.

Type: String

Valid Values: `fleetIdDoesNotExist | fleetIdMalformed | fleetNotInDeletableState | unexpectedError`

Required: No

**message**

The description for the error code.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeleteFleetErrorItem

Describes an EC2 Fleet that was not successfully deleted.

## Contents

**error**

The error.

Type: DeleteFleetError object

Required: No

**fleetId**

The ID of the EC2 Fleet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeleteFleetSuccessItem

Describes an EC2 Fleet that was successfully deleted.

## Contents

**currentFleetState**

The current state of the EC2 Fleet.

Type: String

Valid Values: `submitted | active | deleted | failed | deleted_running | deleted_terminating | modifying`

Required: No

**fleetId**

The ID of the EC2 Fleet.

Type: String

Required: No

**previousFleetState**

The previous state of the EC2 Fleet.

Type: String

Valid Values: `submitted | active | deleted | failed | deleted_running | deleted_terminating | modifying`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeleteLaunchTemplateVersionsResponseErrorItem

Describes a launch template version that could not be deleted.

## Contents

**launchTemplateId**

The ID of the launch template.

Type: String

Required: No

**launchTemplateName**

The name of the launch template.

Type: String

Required: No

**responseError**

Information about the error.

Type: ResponseError object

Required: No

**versionNumber**

The version number of the launch template.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeleteLaunchTemplateVersionsResponseSuccessItem

Describes a launch template version that was successfully deleted.

## Contents

**launchTemplateId**

The ID of the launch template.

Type: String

Required: No

**launchTemplateName**

The name of the launch template.

Type: String

Required: No

**versionNumber**

The version number of the launch template.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeleteQueuedReservedInstancesError

Describes the error for a Reserved Instance whose queued purchase could not be deleted.

## Contents

**code**

The error code.

Type: String

Valid Values: `reserved-instances-id-invalid | reserved-instances-not-in-queued-state | unexpected-error`

Required: No

**message**

The error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeleteSnapshotReturnCode

The snapshot ID and its deletion result code.

## Contents

**returnCode**

The result code from the snapshot deletion attempt. Possible values:

- `success` - The snapshot was successfully deleted.
- `skipped` - The snapshot was not deleted because it's associated with other AMIs.
- `missing-permissions` - The snapshot was not deleted because the role lacks `DeleteSnapshot` permissions. For more information, see How Amazon EBS works with IAM.
- `internal-error` - The snapshot was not deleted due to a server error.
- `client-error` - The snapshot was not deleted due to a client configuration error.

For details about an error, check the `DeleteSnapshot` event in the CloudTrail event history. For more information, see View event history in the *AWS CloudTrail User Guide*.

Type: String

Valid Values: `success | skipped | missing-permissions | internal-error | client-error`

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeprecationTimeCondition

The maximum period since deprecation for allowed images.

## Contents

**maximumDaysSinceDeprecated**

The maximum number of days that have elapsed since the image was deprecated. When set to `0`, no deprecated images are allowed.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 2147483647.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeprecationTimeConditionRequest

The maximum period since deprecation for allowed images.

## Contents

**MaximumDaysSinceDeprecated**

The maximum number of days that have elapsed since the image was deprecated. Set to `0` to exclude all deprecated images.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 2147483647.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeregisterInstanceTagAttributeRequest

Information about the tag keys to deregister for the current Region. You can either specify individual tag keys or deregister all tag keys in the current Region. You must specify either `IncludeAllTagsOfInstance` or `InstanceTagKeys` in the request

## Contents

**IncludeAllTagsOfInstance**

Indicates whether to deregister all tag keys in the current Region. Specify `false` to deregister all tag keys.

Type: Boolean

Required: No

**InstanceTagKey.N**

Information about the tag keys to deregister.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DescribeFastLaunchImagesSuccessItem

Describe details about a Windows image with Windows fast launch enabled that meets the requested criteria. Criteria are defined by the `DescribeFastLaunchImages` action filters.

## Contents

**imageId**

The image ID that identifies the Windows fast launch enabled image.

Type: String

Required: No

**launchTemplate**

The launch template that the Windows fast launch enabled AMI uses when it launches Windows instances from pre-provisioned snapshots.

Type: FastLaunchLaunchTemplateSpecificationResponse object

Required: No

**maxParallelLaunches**

The maximum number of instances that Amazon EC2 can launch at the same time to create pre-provisioned snapshots for Windows fast launch.

Type: Integer

Required: No

**ownerId**

The owner ID for the Windows fast launch enabled AMI.

Type: String

Required: No

**resourceType**

The resource type that Amazon EC2 uses for pre-provisioning the Windows AMI. Supported values include: `snapshot`.

Type: String

Valid Values: `snapshot`

Required: No

**snapshotConfiguration**

A group of parameters that are used for pre-provisioning the associated Windows AMI using snapshots.

Type: FastLaunchSnapshotConfigurationResponse object

Required: No

**state**

The current state of Windows fast launch for the specified Windows AMI.

Type: String

Valid Values: `enabling | enabling-failed | enabled | enabled-failed | disabling | disabling-failed`

Required: No

**stateTransitionReason**

The reason that Windows fast launch for the AMI changed to the current state.

Type: String

Required: No

**stateTransitionTime**

The time that Windows fast launch for the AMI changed to the current state.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DescribeFastSnapshotRestoreSuccessItem

Describes fast snapshot restores for a snapshot.

## Contents

**availabilityZone**

The Availability Zone.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**disabledTime**

The time at which fast snapshot restores entered the `disabled` state.

Type: Timestamp

Required: No

**disablingTime**

The time at which fast snapshot restores entered the `disabling` state.

Type: Timestamp

Required: No

**enabledTime**

The time at which fast snapshot restores entered the `enabled` state.

Type: Timestamp

Required: No

**enablingTime**

The time at which fast snapshot restores entered the `enabling` state.

Type: Timestamp

Required: No

**optimizingTime**

The time at which fast snapshot restores entered the `optimizing` state.

Type: Timestamp

Required: No

**ownerAlias**

The AWS owner alias that enabled fast snapshot restores on the snapshot. This is intended for future use.

Type: String

Required: No

**ownerId**

The ID of the AWS account that enabled fast snapshot restores on the snapshot.

Type: String

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

**state**

The state of fast snapshot restores.

Type: String

Valid Values: `enabling | optimizing | enabled | disabling | disabled`

Required: No

**stateTransitionReason**

The reason for the state transition. The possible values are as follows:

- `Client.UserInitiated` - The state successfully transitioned to `enabling` or `disabling`.
- `Client.UserInitiated - Lifecycle state transition` - The state successfully transitioned to `optimizing`, `enabled`, or `disabled`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DescribeFleetError

Describes the instances that could not be launched by the fleet.

## Contents

**errorCode**

The error code that indicates why the instance could not be launched. For more information about error codes, see Error codes.

Type: String

Required: No

**errorMessage**

The error message that describes why the instance could not be launched. For more information about error messages, see Error codes.

Type: String

Required: No

**launchTemplateAndOverrides**

The launch templates and overrides that were used for launching the instances. The values that you specify in the Overrides replace the values in the launch template.

Type: LaunchTemplateAndOverridesResponse object

Required: No

**lifecycle**

Indicates if the instance that could not be launched was a Spot, On-Demand, Capacity Block, or Interruptible Capacity Reservation instance.

Type: String

Valid Values: `spot | on-demand | interruptible-capacity-reservation`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DescribeFleetsInstances

Describes the instances that were launched by the fleet.

## Contents

**InstanceIds.N**

The IDs of the instances.

Type: Array of strings

Required: No

**instanceType**

The instance type.

Type: String

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge

| d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge

| m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge

| x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge |

r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal

| m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge

`| r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge`

Required: No

**launchTemplateAndOverrides**

The launch templates and overrides that were used for launching the instances. The values that you specify in the Overrides replace the values in the launch template.

Type: LaunchTemplateAndOverridesResponse object

Required: No

**lifecycle**

Indicates if the instance that was launched is a Spot, On-Demand, Capacity Block, or Interruptible Capacity Reservation instance.

Type: String

Valid Values: `spot | on-demand | interruptible-capacity-reservation`

Required: No

**platform**

The value is `windows` for Windows instances in an EC2 Fleet. Otherwise, the value is blank.

Type: String

Valid Values: `Windows`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DestinationOptionsRequest

Describes the destination options for a flow log.

## Contents

**FileFormat**

The format for the flow log. The default is `plain-text`.

Type: String

Valid Values: `plain-text | parquet`

Required: No

**HiveCompatiblePartitions**

Indicates whether to use Hive-compatible prefixes for flow logs stored in Amazon S3. The default is `false`.

Type: Boolean

Required: No

**PerHourPartition**

Indicates whether to partition the flow log per hour. This reduces the cost and response time for queries. The default is `false`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DestinationOptionsResponse

Describes the destination options for a flow log.

## Contents

**fileFormat**

The format for the flow log.

Type: String

Valid Values: `plain-text | parquet`

Required: No

**hiveCompatiblePartitions**

Indicates whether to use Hive-compatible prefixes for flow logs stored in Amazon S3.

Type: Boolean

Required: No

**perHourPartition**

Indicates whether to partition the flow log per hour.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DeviceOptions

Describes the options for an AWS Verified Access device-identity based trust provider.

## Contents

**publicSigningKeyUrl**

The URL AWS Verified Access will use to verify the authenticity of the device tokens.

Type: String

Required: No

**tenantId**

The ID of the tenant application with the device-identity provider.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DhcpConfiguration

Describes a DHCP configuration option.

## Contents

**key**

The name of a DHCP option.

Type: String

Required: No

**ValueSet.N**

The values for the DHCP option.

Type: Array of AttributeValue objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DhcpOptions

The set of DHCP options.

## Contents

**DhcpConfigurationSet.N**

The DHCP options in the set.

Type: Array of DhcpConfiguration objects

Required: No

**dhcpOptionsId**

The ID of the set of DHCP options.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the DHCP options set.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the DHCP options set.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DimensionCondition

Specifies a condition for filtering capacity data based on dimension values. Used to create precise filters for metric queries and dimension lookups.

## Contents

**Comparison**

The comparison operator to use for the filter.

Type: String

Valid Values: `equals | in`

Required: No

**Dimension**

The name of the dimension to filter by.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 300.

Valid Values: `resource-region | availability-zone-id | account-id | account-name | instance-family | instance-type | instance-platform | reservation-arn | reservation-id | reservation-type | reservation-create-timestamp | reservation-start-timestamp | reservation-end-timestamp | reservation-end-date-type | tenancy | reservation-state | reservation-instance-match-criteria | reservation-unused-financial-owner`

Required: No

**Value.N**

The list of values to match against the specified dimension. For 'equals' comparison, only the first value is used. For 'in' comparison, any matching value will satisfy the condition.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Length Constraints: Minimum length of 0. Maximum length of 300.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DirectoryServiceAuthentication

Describes an Active Directory.

## Contents

**directoryId**

The ID of the Active Directory used for authentication.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DirectoryServiceAuthenticationRequest

Describes the Active Directory to be used for client authentication.

## Contents

### DirectoryId

The ID of the Active Directory to be used for authentication.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DisableFastSnapshotRestoreErrorItem

Contains information about the errors that occurred when disabling fast snapshot restores.

## Contents

**FastSnapshotRestoreStateErrorSet.N**

The errors.

Type: Array of DisableFastSnapshotRestoreStateErrorItem objects

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DisableFastSnapshotRestoreStateError

Describes an error that occurred when disabling fast snapshot restores.

## Contents

**code**

The error code.

Type: String

Required: No

**message**

The error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DisableFastSnapshotRestoreStateErrorItem

Contains information about an error that occurred when disabling fast snapshot restores.

## Contents

**availabilityZone**

The Availability Zone.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**error**

The error.

Type: DisableFastSnapshotRestoreStateError object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DisableFastSnapshotRestoreSuccessItem

Describes fast snapshot restores that were successfully disabled.

## Contents

**availabilityZone**

The Availability Zone.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**disabledTime**

The time at which fast snapshot restores entered the `disabled` state.

Type: Timestamp

Required: No

**disablingTime**

The time at which fast snapshot restores entered the `disabling` state.

Type: Timestamp

Required: No

**enabledTime**

The time at which fast snapshot restores entered the `enabled` state.

Type: Timestamp

Required: No

**enablingTime**

The time at which fast snapshot restores entered the `enabling` state.

Type: Timestamp

Required: No

**optimizingTime**

The time at which fast snapshot restores entered the `optimizing` state.

Type: Timestamp

Required: No

**ownerAlias**

The AWS owner alias that enabled fast snapshot restores on the snapshot. This is intended for future use.

Type: String

Required: No

**ownerId**

The ID of the AWS account that enabled fast snapshot restores on the snapshot.

Type: String

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

**state**

The state of fast snapshot restores for the snapshot.

Type: String

Valid Values: `enabling | optimizing | enabled | disabling | disabled`

Required: No

**stateTransitionReason**

The reason for the state transition. The possible values are as follows:

- `Client.UserInitiated` - The state successfully transitioned to `enabling` or `disabling`.
- `Client.UserInitiated - Lifecycle state transition` - The state successfully transitioned to `optimizing`, `enabled`, or `disabled`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DiskImage

Describes a disk image.

## Contents

**Description**

A description of the disk image.

Type: String

Required: No

**Image**

Information about the disk image.

Type: DiskImageDetail object

Required: No

**Volume**

Information about the volume.

Type: VolumeDetail object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DiskImageDescription

Describes a disk image.

## Contents

**checksum**

The checksum computed for the disk image.

Type: String

Required: No

**format**

The disk image format.

Type: String

Valid Values: `VMDK | RAW | VHD`

Required: No

**importManifestUrl**

A presigned URL for the import manifest stored in Amazon S3. For information about creating a presigned URL for an Amazon S3 object, read the "Query String Request Authentication Alternative" section of the Authenticating REST Requests topic in the *Amazon Simple Storage Service Developer Guide*.

For information about the import manifest referenced by this API action, see VM Import Manifest.

Type: String

Required: No

**size**

The size of the disk image, in GiB.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DiskImageDetail

Describes a disk image.

## Contents

**Bytes**

The size of the disk image, in GiB.

Type: Long

Required: Yes

**Format**

The disk image format.

Type: String

Valid Values: `VMDK | RAW | VHD`

Required: Yes

**ImportManifestUrl**

A presigned URL for the import manifest stored in Amazon S3 and presented here as an Amazon S3 presigned URL. For information about creating a presigned URL for an Amazon S3 object, read the "Query String Request Authentication Alternative" section of the Authenticating REST Requests topic in the *Amazon Simple Storage Service Developer Guide*.

For information about the import manifest referenced by this API action, see VM Import Manifest.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DiskImageVolumeDescription

Describes a disk image volume.

## Contents

**id**

The volume identifier.

Type: String

Required: No

**size**

The size of the volume, in GiB.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DiskInfo

Describes a disk.

## Contents

**count**

The number of disks with this configuration.

Type: Integer

Required: No

**sizeInGB**

The size of the disk in GB.

Type: Long

Required: No

**type**

The type of disk.

Type: String

Valid Values: `hdd | ssd`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DnsEntry

Describes a DNS entry.

## Contents

**dnsName**

The DNS name.

Type: String

Required: No

**hostedZoneId**

The ID of the private hosted zone.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DnsOptions

Describes the DNS options for an endpoint.

## Contents

**dnsRecordIpType**

The DNS records created for the endpoint.

Type: String

Valid Values: `ipv4 | dualstack | ipv6 | service-defined`

Required: No

**privateDnsOnlyForInboundResolverEndpoint**

Indicates whether to enable private DNS only for inbound endpoints.

Type: Boolean

Required: No

**privateDnsPreference**

The preference for which private domains have a private hosted zone created for and associated with the specified VPC. Only supported when private DNS is enabled and when the VPC endpoint type is ServiceNetwork or Resource.

- `ALL_DOMAINS` - VPC Lattice provisions private hosted zones for all custom domain names.
- `VERIFIED_DOMAINS_ONLY` - VPC Lattice provisions a private hosted zone only if custom domain name has been verified by the provider.
- `VERIFIED_DOMAINS_AND_SPECIFIED_DOMAINS` - VPC Lattice provisions private hosted zones for all verified custom domain names and other domain names that the resource consumer specifies. The resource consumer specifies the domain names in the PrivateDnsSpecifiedDomains parameter.
- `SPECIFIED_DOMAINS_ONLY` - VPC Lattice provisions a private hosted zone for domain names specified by the resource consumer. The resource consumer specifies the domain names in the PrivateDnsSpecifiedDomains parameter.

Type: String

Required: No

**PrivateDnsSpecifiedDomainSet.N**

Indicates which of the private domains to create private hosted zones for and associate with the specified VPC. Only supported when private DNS is enabled and the private DNS preference is `VERIFIED_DOMAINS_AND_SPECIFIED_DOMAINS` or `SPECIFIED_DOMAINS_ONLY`.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DnsOptionsSpecification

Describes the DNS options for an endpoint.

## Contents

**DnsRecordIpType**

The DNS records created for the endpoint.

Type: String

Valid Values: `ipv4 | dualstack | ipv6 | service-defined`

Required: No

**PrivateDnsOnlyForInboundResolverEndpoint**

Indicates whether to enable private DNS only for inbound endpoints. This option is available only for services that support both gateway and interface endpoints. It routes traffic that originates from the VPC to the gateway endpoint and traffic that originates from on-premises to the interface endpoint.

Type: Boolean

Required: No

**PrivateDnsPreference**

The preference for which private domains have a private hosted zone created for and associated with the specified VPC. Only supported when private DNS is enabled and when the VPC endpoint type is ServiceNetwork or Resource.

- `ALL_DOMAINS` - VPC Lattice provisions private hosted zones for all custom domain names.
- `VERIFIED_DOMAINS_ONLY` - VPC Lattice provisions a private hosted zone only if custom domain name has been verified by the provider.
- `VERIFIED_DOMAINS_AND_SPECIFIED_DOMAINS` - VPC Lattice provisions private hosted zones for all verified custom domain names and other domain names that the resource consumer specifies. The resource consumer specifies the domain names in the PrivateDnsSpecifiedDomains parameter.

- `SPECIFIED_DOMAINS_ONLY` - VPC Lattice provisions a private hosted zone for domain names specified by the resource consumer. The resource consumer specifies the domain names in the PrivateDnsSpecifiedDomains parameter.

Type: String

Required: No

**PrivateDnsSpecifiedDomain.N**

Indicates which of the private domains to create private hosted zones for and associate with the specified VPC. Only supported when private DNS is enabled and the private DNS preference is verified-domains-and-specified-domains or specified-domains-only.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# DnsServersOptionsModifyStructure

Information about the DNS server to be used.

## Contents

**CustomDnsServers.N**

The IPv4 address range, in CIDR notation, of the DNS servers to be used. You can specify up to two DNS servers. Ensure that the DNS servers can be reached by the clients. The specified values overwrite the existing values.

Type: Array of strings

Required: No

**Enabled**

Indicates whether DNS servers should be used. Specify `False` to delete the existing DNS servers.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EbsBlockDevice

Describes a block device for an EBS volume.

## Contents

**AvailabilityZone** (request), **availabilityZone** (response)

The Availability Zone where the EBS volume will be created (for example, `us-east-1a`).

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both. If neither is specified, Amazon EC2 automatically selects an Availability Zone within the Region.

This parameter is not supported when using CreateFleet, CreateImage, DescribeImages, RequestSpotFleet, RequestSpotInstances, and RunInstances.

Type: String

Required: No

**AvailabilityZoneId** (request), **AvailabilityZoneId** (response)

The ID of the Availability Zone where the EBS volume will be created (for example, `use1-az1`).

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both. If neither is specified, Amazon EC2 automatically selects an Availability Zone within the Region.

This parameter is not supported when using CreateFleet, CreateImage, DescribeImages, RequestSpotFleet, RequestSpotInstances, and RunInstances.

Type: String

Required: No

**DeleteOnTermination** (request), **deleteOnTermination** (response)

Indicates whether the EBS volume is deleted on instance termination. For more information, see Preserving Amazon EBS volumes on instance termination in the *Amazon EC2 User Guide*.

Type: Boolean

Required: No

**EbsCardIndex** (request), **EbsCardIndex** (response)

The index of the EBS card. Some instance types support multiple EBS cards. The default EBS card index is 0.

Type: Integer

Required: No

**Encrypted** (request), **encrypted** (response)

Indicates whether the encryption state of an EBS volume is changed while being restored from a backing snapshot. The effect of setting the encryption state to `true` depends on the volume origin (new or from a snapshot), starting encryption state, ownership, and whether encryption by default is enabled. For more information, see Amazon EBS encryption in the *Amazon EBS User Guide*.

In no case can you remove encryption from an encrypted volume.

Encrypted volumes can only be attached to instances that support Amazon EBS encryption. For more information, see Supported instance types.

This parameter is not returned by DescribeImageAttribute.

For CreateImage and RegisterImage, whether you can include this parameter, and the allowed values differ depending on the type of block device mapping you are creating.

- If you are creating a block device mapping for a **new (empty) volume**, you can include this parameter, and specify either `true` for an encrypted volume, or `false` for an unencrypted volume. If you omit this parameter, it defaults to `false` (unencrypted).
- If you are creating a block device mapping from an **existing encrypted or unencrypted snapshot**, you must omit this parameter. If you include this parameter, the request will fail, regardless of the value that you specify.
- If you are creating a block device mapping from an **existing unencrypted volume**, you can include this parameter, but you must specify `false`. If you specify `true`, the request will fail. In this case, we recommend that you omit the parameter.
- If you are creating a block device mapping from an **existing encrypted volume**, you can include this parameter, and specify either `true` or `false`. However, if you specify `false`, the parameter is ignored and the block device mapping is always encrypted. In this case, we recommend that you omit the parameter.

Type: Boolean

Required: No

**Iops** (request), **iops** (response)

The number of I/O operations per second (IOPS). For `gp3`, `io1`, and `io2` volumes, this represents the number of IOPS that are provisioned for the volume. For `gp2` volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting.

The following are the supported values for each volume type:

- `gp3`: 3,000 - 80,000 IOPS
- `io1`: 100 - 64,000 IOPS
- `io2`: 100 - 256,000 IOPS

For `io2` volumes, you can achieve up to 256,000 IOPS on instances built on the Nitro System. On other instances, you can achieve performance up to 32,000 IOPS.

This parameter is required for `io1` and `io2` volumes. The default for `gp3` volumes is 3,000 IOPS.

Type: Integer

Required: No

**KmsKeyId** (request), **kmsKeyId** (response)

Identifier (key ID, key alias, key ARN, or alias ARN) of the customer managed KMS key to use for EBS encryption.

This parameter is only supported on `BlockDeviceMapping` objects called by RunInstances, RequestSpotFleet, and RequestSpotInstances.

Type: String

Required: No

**OutpostArn** (request), **outpostArn** (response)

The ARN of the Outpost on which the snapshot is stored.

This parameter is not supported when using CreateImage.

Type: String

Required: No

**SnapshotId** (request), **snapshotId** (response)

The ID of the snapshot.

Type: String

Required: No

**Throughput** (request), **throughput** (response)

The throughput that the volume supports, in MiB/s.

This parameter is valid only for gp3 volumes.

Valid Range: Minimum value of 125. Maximum value of 2,000.

Type: Integer

Required: No

**VolumeInitializationRate** (request), **VolumeInitializationRate** (response)

Specifies the Amazon EBS Provisioned Rate for Volume Initialization (volume initialization rate), in MiB/s, at which to download the snapshot blocks from Amazon S3 to the volume. This is also known as *volume initialization*. Specifying a volume initialization rate ensures that the volume is initialized at a predictable and consistent rate after creation. For more information, see Initialize Amazon EBS volumes in the *Amazon EC2 User Guide*.

This parameter is supported only for volumes created from snapshots. Omit this parameter if:

- You want to create the volume using fast snapshot restore. You must specify a snapshot that is enabled for fast snapshot restore. In this case, the volume is fully initialized at creation.

  > **Note**
  >
  > If you specify a snapshot that is enabled for fast snapshot restore and a volume initialization rate, the volume will be initialized at the specified rate instead of fast snapshot restore.

- You want to create a volume that is initialized at the default rate.

This parameter is not supported when using CreateImage and DescribeImages.

Valid range: 100 - 300 MiB/s

Type: Integer

Required: No

**VolumeSize** (request), **volumeSize** (response)

The size of the volume, in GiBs. You must specify either a snapshot ID or a volume size. If you specify a snapshot, the default is the snapshot size. You can specify a volume size that is equal to or larger than the snapshot size.

The following are the supported sizes for each volume type:

- `gp2`: 1 - 16,384 GiB
- `gp3`: 1 - 65,536 GiB
- `io1`: 4 - 16,384 GiB
- `io2`: 4 - 65,536 GiB
- `st1` and `sc1`: 125 - 16,384 GiB
- `standard`: 1 - 1024 GiB

Type: Integer

Required: No

**VolumeType** (request), **volumeType** (response)

The volume type. For more information, see Amazon EBS volume types in the *Amazon EBS User Guide*.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EbsBlockDeviceResponse

Describes a block device for an EBS volume.

## Contents

**deleteOnTermination**

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Required: No

**encrypted**

Indicates whether the volume is encrypted.

Type: Boolean

Required: No

**iops**

The number of I/O operations per second (IOPS). For `gp3`, `io1`, and `io2` volumes, this represents the number of IOPS that are provisioned for the volume. For `gp2` volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting.

Type: Integer

Required: No

**kmsKeyId**

Identifier (key ID, key alias, key ARN, or alias ARN) of the customer managed KMS key to use for EBS encryption.

Type: String

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

**throughput**

The throughput that the volume supports, in MiB/s.

Type: Integer

Required: No

**volumeSize**

The size of the volume, in GiBs.

Type: Integer

Required: No

**volumeType**

The volume type. For more information, see Amazon EBS volume types in the *Amazon EBS User Guide*.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EbsCardInfo

Describes the performance characteristics of an EBS card on the instance type.

## Contents

**baselineBandwidthInMbps**

The baseline bandwidth performance for the EBS card, in Mbps.

Type: Integer

Required: No

**baselineIops**

The baseline IOPS performance for the EBS card.

Type: Integer

Required: No

**baselineThroughputInMBps**

The baseline throughput performance for the EBS card, in MBps.

Type: Double

Required: No

**ebsCardIndex**

The index of the EBS card.

Type: Integer

Required: No

**maximumBandwidthInMbps**

The maximum bandwidth performance for the EBS card, in Mbps.

Type: Integer

Required: No

**maximumIops**

The maximum IOPS performance for the EBS card.

Type: Integer

Required: No

**maximumThroughputInMBps**

The maximum throughput performance for the EBS card, in MBps.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EbsInfo

Describes the Amazon EBS features supported by the instance type.

## Contents

**attachmentLimitType**

Indicates whether the instance type features a shared or dedicated Amazon EBS volume attachment limit. For more information, see Amazon EBS volume limits for Amazon EC2 instances in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `shared | dedicated`

Required: No

**EbsCardSet.N**

Describes the EBS cards available for the instance type.

Type: Array of EbsCardInfo objects

Required: No

**ebsOptimizedInfo**

Describes the optimized EBS performance for the instance type.

Type: EbsOptimizedInfo object

Required: No

**ebsOptimizedSupport**

Indicates whether the instance type is Amazon EBS-optimized. For more information, see Amazon EBS-optimized instances in *Amazon EC2 User Guide*.

Type: String

Valid Values: `unsupported | supported | default`

Required: No

**encryptionSupport**

Indicates whether Amazon EBS encryption is supported.

Type: String

Valid Values: `unsupported | supported`

Required: No

**maximumEbsAttachments**

Indicates the maximum number of Amazon EBS volumes that can be attached to the instance type. For more information, see Amazon EBS volume limits for Amazon EC2 instances in the *Amazon EC2 User Guide*.

Type: Integer

Required: No

**maximumEbsCards**

Indicates the number of EBS cards supported by the instance type.

Type: Integer

Required: No

**nvmeSupport**

Indicates whether non-volatile memory express (NVMe) is supported.

Type: String

Valid Values: `unsupported | supported | required`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EbsInstanceBlockDevice

Describes a parameter used to set up an EBS volume in a block device mapping.

## Contents

**associatedResource**

The ARN of the AWS-managed resource to which the volume is attached.

Type: String

Required: No

**attachTime**

The time stamp when the attachment initiated.

Type: Timestamp

Required: No

**deleteOnTermination**

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Required: No

**ebsCardIndex**

The index of the EBS card. Some instance types support multiple EBS cards. The default EBS card index is 0.

Type: Integer

Required: No

**operator**

The service provider that manages the EBS volume.

Type: OperatorResponse object

Required: No

**status**

The attachment state.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

**volumeId**

The ID of the EBS volume.

Type: String

Required: No

**volumeOwnerId**

The ID of the AWS account that owns the volume.

This parameter is returned only for volumes that are attached to AWS-managed resources.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EbsInstanceBlockDeviceSpecification

Describes information used to set up an EBS volume specified in a block device mapping.

## Contents

**DeleteOnTermination**

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Required: No

**VolumeId**

The ID of the EBS volume.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EbsOptimizedInfo

Describes the optimized EBS performance for supported instance types.

## Contents

**baselineBandwidthInMbps**

The baseline bandwidth performance for an EBS-optimized instance type, in Mbps.

Type: Integer

Required: No

**baselineIops**

The baseline input/output storage operations per seconds for an EBS-optimized instance type.

Type: Integer

Required: No

**baselineThroughputInMBps**

The baseline throughput performance for an EBS-optimized instance type, in MB/s.

Type: Double

Required: No

**maximumBandwidthInMbps**

The maximum bandwidth performance for an EBS-optimized instance type, in Mbps.

Type: Integer

Required: No

**maximumIops**

The maximum input/output storage operations per second for an EBS-optimized instance type.

Type: Integer

Required: No

**maximumThroughputInMBps**

The maximum throughput performance for an EBS-optimized instance type, in MB/s.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EbsStatusDetails

Describes the attached EBS status check for an instance.

## Contents

**impairedSince**

The date and time when the attached EBS status check failed.

Type: Timestamp

Required: No

**name**

The name of the attached EBS status check.

Type: String

Valid Values: `reachability`

Required: No

**status**

The result of the attached EBS status check.

Type: String

Valid Values: `passed | failed | insufficient-data | initializing`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EbsStatusSummary

Provides a summary of the attached EBS volume status for an instance.

## Contents

**Details.N**

Details about the attached EBS status check for an instance.

Type: Array of EbsStatusDetails objects

Required: No

**status**

The current status.

Type: String

Valid Values: `ok | impaired | insufficient-data | not-applicable | initializing`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ec2InstanceConnectEndpoint

Describes an EC2 Instance Connect Endpoint.

## Contents

**availabilityZone**

The Availability Zone of the EC2 Instance Connect Endpoint.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone of the EC2 Instance Connect Endpoint.

Type: String

Required: No

**createdAt**

The date and time that the EC2 Instance Connect Endpoint was created.

Type: Timestamp

Required: No

**dnsName**

The DNS name of the EC2 Instance Connect Endpoint.

Type: String

Required: No

**fipsDnsName**

The Federal Information Processing Standards (FIPS) compliant DNS name of the EC2 Instance Connect Endpoint.

Type: String

Required: No

**instanceConnectEndpointArn**

The Amazon Resource Name (ARN) of the EC2 Instance Connect Endpoint.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**instanceConnectEndpointId**

The ID of the EC2 Instance Connect Endpoint.

Type: String

Required: No

**ipAddressType**

The IP address type of the endpoint.

Type: String

Valid Values: `ipv4 | dualstack | ipv6`

Required: No

**NetworkInterfaceIdSet.N**

The ID of the elastic network interface that Amazon EC2 automatically created when creating the EC2 Instance Connect Endpoint.

Type: Array of strings

Required: No

**ownerId**

The ID of the AWS account that created the EC2 Instance Connect Endpoint.

Type: String

Required: No

**preserveClientIp**

Indicates whether your client's IP address is preserved as the source when you connect to a resource. The following are the possible values.

- `true` - Use the IP address of the client. Your instance must have an IPv4 address.
- `false` - Use the IP address of the network interface.

Default: `false`

Type: Boolean

Required: No

**publicDnsNames**

The public DNS names of the endpoint.

Type: InstanceConnectEndpointPublicDnsNames object

Required: No

**SecurityGroupIdSet.N**

The security groups associated with the endpoint. If you didn't specify a security group, the default security group for your VPC is associated with the endpoint.

Type: Array of strings

Required: No

**state**

The current state of the EC2 Instance Connect Endpoint.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | delete-in-progress | delete-complete | delete-failed | update-in-progress | update-complete | update-failed`

Required: No

**stateMessage**

The message for the current state of the EC2 Instance Connect Endpoint. Can include a failure message.

Type: String

Required: No

**subnetId**

The ID of the subnet in which the EC2 Instance Connect Endpoint was created.

Type: String

Required: No

**TagSet.N**

The tags assigned to the EC2 Instance Connect Endpoint.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC in which the EC2 Instance Connect Endpoint was created.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EfaInfo

Describes the Elastic Fabric Adapters for the instance type.

## Contents

**maximumEfaInterfaces**

The maximum number of Elastic Fabric Adapters for the instance type.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EgressOnlyInternetGateway

Describes an egress-only internet gateway.

## Contents

**AttachmentSet.N**

Information about the attachment of the egress-only internet gateway.

Type: Array of InternetGatewayAttachment objects

Required: No

**egressOnlyInternetGatewayId**

The ID of the egress-only internet gateway.

Type: String

Required: No

**TagSet.N**

The tags assigned to the egress-only internet gateway.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ElasticGpuAssociation

> **Note**
>
> Amazon Elastic Graphics reached end of life on January 8, 2024.

Describes the association between an instance and an Elastic Graphics accelerator.

## Contents

**elasticGpuAssociationId**

The ID of the association.

Type: String

Required: No

**elasticGpuAssociationState**

The state of the association between the instance and the Elastic Graphics accelerator.

Type: String

Required: No

**elasticGpuAssociationTime**

The time the Elastic Graphics accelerator was associated with the instance.

Type: String

Required: No

**elasticGpuId**

The ID of the Elastic Graphics accelerator.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ElasticGpuHealth

> **Note**
>
> Amazon Elastic Graphics reached end of life on January 8, 2024.

Describes the status of an Elastic Graphics accelerator.

## Contents

**status**

The health status.

Type: String

Valid Values: `OK | IMPAIRED`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ElasticGpus

> **Note**
>
> Amazon Elastic Graphics reached end of life on January 8, 2024.

Describes an Elastic Graphics accelerator.

## Contents

**availabilityZone**

The Availability Zone in the which the Elastic Graphics accelerator resides.

Type: String

Required: No

**elasticGpuHealth**

The status of the Elastic Graphics accelerator.

Type: ElasticGpuHealth object

Required: No

**elasticGpuId**

The ID of the Elastic Graphics accelerator.

Type: String

Required: No

**elasticGpuState**

The state of the Elastic Graphics accelerator.

Type: String

Valid Values: ATTACHED

Required: No

**elasticGpuType**

The type of Elastic Graphics accelerator.

Type: String

Required: No

**instanceId**

The ID of the instance to which the Elastic Graphics accelerator is attached.

Type: String

Required: No

**TagSet.N**

The tags assigned to the Elastic Graphics accelerator.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ElasticGpuSpecification

> **Note**
>
> Amazon Elastic Graphics reached end of life on January 8, 2024.

A specification for an Elastic Graphics accelerator.

## Contents

### Type

The type of Elastic Graphics accelerator.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ElasticGpuSpecificationResponse

Deprecated.

> **Note**
>
> Amazon Elastic Graphics reached end of life on January 8, 2024.

## Contents

**type**

Deprecated.

> **Note**
>
> Amazon Elastic Graphics reached end of life on January 8, 2024.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ElasticInferenceAccelerator

> **Note**
>
> Amazon Elastic Inference is no longer available.

Describes an elastic inference accelerator.

## Contents

**Type**

The type of elastic inference accelerator. The possible values are `eia1.medium`, `eia1.large`, `eia1.xlarge`, `eia2.medium`, `eia2.large`, and `eia2.xlarge`.

Type: String

Required: Yes

**Count**

The number of elastic inference accelerators to attach to the instance.

Default: 1

Type: Integer

Valid Range: Minimum value of 1.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ElasticInferenceAcceleratorAssociation

> **Note**
>
> Amazon Elastic Inference is no longer available.

Describes the association between an instance and an elastic inference accelerator.

## Contents

**elasticInferenceAcceleratorArn**

The Amazon Resource Name (ARN) of the elastic inference accelerator.

Type: String

Required: No

**elasticInferenceAcceleratorAssociationId**

The ID of the association.

Type: String

Required: No

**elasticInferenceAcceleratorAssociationState**

The state of the elastic inference accelerator.

Type: String

Required: No

**elasticInferenceAcceleratorAssociationTime**

The time at which the elastic inference accelerator is associated with an instance.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EnableFastSnapshotRestoreErrorItem

Contains information about the errors that occurred when enabling fast snapshot restores.

## Contents

**FastSnapshotRestoreStateErrorSet.N**

The errors.

Type: Array of EnableFastSnapshotRestoreStateErrorItem objects

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EnableFastSnapshotRestoreStateError

Describes an error that occurred when enabling fast snapshot restores.

## Contents

**code**

The error code.

Type: String

Required: No

**message**

The error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EnableFastSnapshotRestoreStateErrorItem

Contains information about an error that occurred when enabling fast snapshot restores.

## Contents

**availabilityZone**

The Availability Zone.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**error**

The error.

Type: EnableFastSnapshotRestoreStateError object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EnableFastSnapshotRestoreSuccessItem

Describes fast snapshot restores that were successfully enabled.

## Contents

**availabilityZone**

The Availability Zone.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**disabledTime**

The time at which fast snapshot restores entered the `disabled` state.

Type: Timestamp

Required: No

**disablingTime**

The time at which fast snapshot restores entered the `disabling` state.

Type: Timestamp

Required: No

**enabledTime**

The time at which fast snapshot restores entered the `enabled` state.

Type: Timestamp

Required: No

**enablingTime**

The time at which fast snapshot restores entered the `enabling` state.

Type: Timestamp

Required: No

**optimizingTime**

The time at which fast snapshot restores entered the `optimizing` state.

Type: Timestamp

Required: No

**ownerAlias**

The AWS owner alias that enabled fast snapshot restores on the snapshot. This is intended for future use.

Type: String

Required: No

**ownerId**

The ID of the AWS account that enabled fast snapshot restores on the snapshot.

Type: String

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

**state**

The state of fast snapshot restores.

Type: String

Valid Values: `enabling | optimizing | enabled | disabling | disabled`

Required: No

**stateTransitionReason**

The reason for the state transition. The possible values are as follows:

- `Client.UserInitiated` - The state successfully transitioned to `enabling` or `disabling`.
- `Client.UserInitiated - Lifecycle state transition` - The state successfully transitioned to `optimizing`, `enabled`, or `disabled`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EnaSrdSpecification

ENA Express uses AWS Scalable Reliable Datagram (SRD) technology to increase the maximum bandwidth used per stream and minimize tail latency of network traffic between EC2 instances. With ENA Express, you can communicate between two EC2 instances in the same subnet within the same account, or in different accounts. Both sending and receiving instances must have ENA Express enabled.

To improve the reliability of network packet delivery, ENA Express reorders network packets on the receiving end by default. However, some UDP-based applications are designed to handle network packets that are out of order to reduce the overhead for packet delivery at the network layer. When ENA Express is enabled, you can specify whether UDP network traffic uses it.

## Contents

**EnaSrdEnabled**

Indicates whether ENA Express is enabled for the network interface.

Type: Boolean

Required: No

**EnaSrdUdpSpecification**

Configures ENA Express for UDP network traffic.

Type: EnaSrdUdpSpecification object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EnaSrdSpecificationRequest

Launch instances with ENA Express settings configured from your launch template.

## Contents

**EnaSrdEnabled** (request), **EnaSrdEnabled** (response)

Specifies whether ENA Express is enabled for the network interface when you launch an instance.

Type: Boolean

Required: No

**EnaSrdUdpSpecification** (request), **EnaSrdUdpSpecification** (response)

Contains ENA Express settings for UDP network traffic for the network interface attached to the instance.

Type: EnaSrdUdpSpecificationRequest object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EnaSrdUdpSpecification

ENA Express is compatible with both TCP and UDP transport protocols. When it's enabled, TCP traffic automatically uses it. However, some UDP-based applications are designed to handle network packets that are out of order, without a need for retransmission, such as live video broadcasting or other near-real-time applications. For UDP traffic, you can specify whether to use ENA Express, based on your application environment needs.

## Contents

**EnaSrdUdpEnabled**

Indicates whether UDP traffic to and from the instance uses ENA Express. To specify this setting, you must first enable ENA Express.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EnaSrdUdpSpecificationRequest

Configures ENA Express for UDP network traffic from your launch template.

## Contents

**EnaSrdUdpEnabled** (request), **EnaSrdUdpEnabled** (response)

Indicates whether UDP traffic uses ENA Express for your instance. To ensure that UDP traffic can use ENA Express when you launch an instance, you must also set **EnaSrdEnabled** in the **EnaSrdSpecificationRequest** to `true`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EnclaveOptions

Indicates whether the instance is enabled for AWS Nitro Enclaves.

## Contents

**enabled**

If this parameter is set to `true`, the instance is enabled for AWS Nitro Enclaves; otherwise, it is not enabled for AWS Nitro Enclaves.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EnclaveOptionsRequest

Indicates whether the instance is enabled for AWS Nitro Enclaves. For more information, see What is AWS Nitro Enclaves? in the *AWS Nitro Enclaves User Guide*.

## Contents

### Enabled

To enable the instance for AWS Nitro Enclaves, set this parameter to `true`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EncryptionSupport

Describes the encryption support status for a transit gateway.

## Contents

**encryptionState**

The current encryption state of the resource.

Type: String

Valid Values: `enabling | enabled | disabling | disabled`

Required: No

**stateMessage**

A message describing the encryption state.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# EventInformation

Describes an EC2 Fleet or Spot Fleet event.

## Contents

**eventDescription**

The description of the event.

Type: String

Required: No

**eventSubType**

The event.

`error` events:

- `iamFleetRoleInvalid` - The EC2 Fleet or Spot Fleet does not have the required permissions either to launch or terminate an instance.
- `allLaunchSpecsTemporarilyBlacklisted` - None of the configurations are valid, and several attempts to launch instances have failed. For more information, see the description of the event.
- `spotInstanceCountLimitExceeded` - You've reached the limit on the number of Spot Instances that you can launch.
- `spotFleetRequestConfigurationInvalid` - The configuration is not valid. For more information, see the description of the event.

`fleetRequestChange` events:

- `active` - The EC2 Fleet or Spot Fleet request has been validated and Amazon EC2 is attempting to maintain the target number of running instances.
- `deleted` (EC2 Fleet) / `cancelled` (Spot Fleet) - The EC2 Fleet is deleted or the Spot Fleet request is canceled and has no running instances. The EC2 Fleet or Spot Fleet will be deleted two days after its instances are terminated.
- `deleted_running` (EC2 Fleet) / `cancelled_running` (Spot Fleet) - The EC2 Fleet is deleted or the Spot Fleet request is canceled and does not launch additional instances. Its existing instances continue to run until they are interrupted or terminated. The request remains in this state until all instances are interrupted or terminated.

- deleted_terminating (EC2 Fleet) / cancelled_terminating (Spot Fleet) - The EC2 Fleet is deleted or the Spot Fleet request is canceled and its instances are terminating. The request remains in this state until all instances are terminated.
- expired - The EC2 Fleet or Spot Fleet request has expired. If the request was created with TerminateInstancesWithExpiration set, a subsequent terminated event indicates that the instances are terminated.
- modify_in_progress - The EC2 Fleet or Spot Fleet request is being modified. The request remains in this state until the modification is fully processed.
- modify_succeeded - The EC2 Fleet or Spot Fleet request was modified.
- submitted - The EC2 Fleet or Spot Fleet request is being evaluated and Amazon EC2 is preparing to launch the target number of instances.
- progress - The EC2 Fleet or Spot Fleet request is in the process of being fulfilled.

instanceChange events:

- launched - A new instance was launched.
- terminated - An instance was terminated by the user.
- termination_notified - An instance termination notification was sent when a Spot Instance was terminated by Amazon EC2 during scale-down, when the target capacity of the fleet was modified down, for example, from a target capacity of 4 to a target capacity of 3.

Information events:

- fleetProgressHalted - The price in every launch specification is not valid because it is below the Spot price (all the launch specifications have produced launchSpecUnusable events). A launch specification might become valid if the Spot price changes.
- launchSpecTemporarilyBlacklisted - The configuration is not valid and several attempts to launch instances have failed. For more information, see the description of the event.
- launchSpecUnusable - The price specified in a launch specification is not valid because it is below the Spot price for the requested Spot pools.

  Note: Even if a fleet with the maintain request type is in the process of being canceled, it may still publish a launchSpecUnusable event. This does not mean that the canceled fleet is attempting to launch a new instance.
- registerWithLoadBalancersFailed - An attempt to register instances with load balancers failed. For more information, see the description of the event.

Type: String

Required: No

**instanceId**

The ID of the instance. This information is available only for `instanceChange` events.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Explanation

Describes an explanation code for an unreachable path. For more information, see Reachability Analyzer explanation codes.

## Contents

**acl**

The network ACL.

Type: AnalysisComponent object

Required: No

**aclRule**

The network ACL rule.

Type: AnalysisAclRule object

Required: No

**address**

The IPv4 address, in CIDR notation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**AddressSet.N**

The IPv4 addresses, in CIDR notation.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**attachedTo**

The resource to which the component is attached.

Type: AnalysisComponent object

Required: No

**AvailabilityZoneIdSet.N**

The IDs of the Availability Zones.

Type: Array of strings

Required: No

**AvailabilityZoneSet.N**

The Availability Zones.

Type: Array of strings

Required: No

**CidrSet.N**

The CIDR ranges.

Type: Array of strings

Required: No

**classicLoadBalancerListener**

The listener for a Classic Load Balancer.

Type: AnalysisLoadBalancerListener object

Required: No

**component**

The component.

Type: AnalysisComponent object

Required: No

**componentAccount**

The AWS account for the component.

Type: String

Pattern: `\d{12}`

Required: No

**componentRegion**

The Region for the component.

Type: String

Pattern: `[a-z]{2}-[a-z]+-[1-9]+`

Required: No

**customerGateway**

The customer gateway.

Type: AnalysisComponent object

Required: No

**destination**

The destination.

Type: AnalysisComponent object

Required: No

**destinationVpc**

The destination VPC.

Type: AnalysisComponent object

Required: No

**direction**

The direction. The following are the possible values:

- egress
- ingress

Type: String

Required: No

**elasticLoadBalancerListener**

The load balancer listener.

Type: AnalysisComponent object

Required: No

**explanationCode**

The explanation code.

Type: String

Required: No

**firewallStatefulRule**

The Network Firewall stateful rule.

Type: FirewallStatefulRule object

Required: No

**firewallStatelessRule**

The Network Firewall stateless rule.

Type: FirewallStatelessRule object

Required: No

**ingressRouteTable**

The route table.

Type: AnalysisComponent object

Required: No

**internetGateway**

The internet gateway.

Type: AnalysisComponent object

Required: No

**loadBalancerArn**

The Amazon Resource Name (ARN) of the load balancer.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**loadBalancerListenerPort**

The listener port of the load balancer.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 65535.

Required: No

**loadBalancerTarget**

The target.

Type: AnalysisLoadBalancerTarget object

Required: No

**loadBalancerTargetGroup**

The target group.

Type: AnalysisComponent object

Required: No

**LoadBalancerTargetGroupSet.N**

The target groups.

Type: Array of AnalysisComponent objects

Required: No

**loadBalancerTargetPort**

The target port.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 65535.

Required: No

**missingComponent**

The missing component.

Type: String

Required: No

**natGateway**

The NAT gateway.

Type: AnalysisComponent object

Required: No

**networkInterface**

The network interface.

Type: AnalysisComponent object

Required: No

**packetField**

The packet field.

Type: String

Required: No

**port**

The port.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 65535.

Required: No

**PortRangeSet.N**

The port ranges.

Type: Array of PortRange objects

Required: No

**prefixList**

The prefix list.

Type: AnalysisComponent object

Required: No

**ProtocolSet.N**

The protocols.

Type: Array of strings

Required: No

**routeTable**

The route table.

Type: AnalysisComponent object

Required: No

**routeTableRoute**

The route table route.

Type: AnalysisRouteTableRoute object

Required: No

**securityGroup**

The security group.

Type: AnalysisComponent object

Required: No

**securityGroupRule**

The security group rule.

Type: AnalysisSecurityGroupRule object

Required: No

**SecurityGroupSet.N**

The security groups.

Type: Array of AnalysisComponent objects

Required: No

**sourceVpc**

The source VPC.

Type: AnalysisComponent object

Required: No

**state**

The state.

Type: String

Required: No

**subnet**

The subnet.

Type: AnalysisComponent object

Required: No

**subnetRouteTable**

The route table for the subnet.

Type: AnalysisComponent object

Required: No

**transitGateway**

The transit gateway.

Type: AnalysisComponent object

Required: No

**transitGatewayAttachment**

The transit gateway attachment.

Type: AnalysisComponent object

Required: No

**transitGatewayRouteTable**

The transit gateway route table.

Type: AnalysisComponent object

Required: No

**transitGatewayRouteTableRoute**

The transit gateway route table route.

Type: TransitGatewayRouteTableRoute object

Required: No

**vpc**

The component VPC.

Type: AnalysisComponent object

Required: No

**vpcEndpoint**

The VPC endpoint.

Type: AnalysisComponent object

Required: No

**vpcPeeringConnection**

The VPC peering connection.

Type: AnalysisComponent object

Required: No

**vpnConnection**

The VPN connection.

Type: AnalysisComponent object

Required: No

**vpnGateway**

The VPN gateway.

Type: AnalysisComponent object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ExportImageTask

Describes an export image task.

## Contents

**description**

A description of the image being exported.

Type: String

Required: No

**exportImageTaskId**

The ID of the export image task.

Type: String

Required: No

**imageId**

The ID of the image.

Type: String

Required: No

**progress**

The percent complete of the export image task.

Type: String

Required: No

**s3ExportLocation**

Information about the destination Amazon S3 bucket.

Type: ExportTaskS3Location object

Required: No

**status**

The status of the export image task. The possible values are `active`, `completed`, `deleting`, and `deleted`.

Type: String

Required: No

**statusMessage**

The status message for the export image task.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the export image task.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ExportTask

Describes an export instance task.

## Contents

**description**

A description of the resource being exported.

Type: String

Required: No

**exportTaskId**

The ID of the export task.

Type: String

Required: No

**exportToS3**

Information about the export task.

Type: ExportToS3Task object

Required: No

**instanceExport**

Information about the instance to export.

Type: InstanceExportDetails object

Required: No

**state**

The state of the export task.

Type: String

Valid Values: `active | cancelling | cancelled | completed`

Required: No

**statusMessage**

The status message related to the export task.

Type: String

Required: No

**TagSet.N**

The tags for the export task.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ExportTaskS3Location

Describes the destination for an export image task.

## Contents

**s3Bucket**

The destination Amazon S3 bucket.

Type: String

Required: No

**s3Prefix**

The prefix (logical hierarchy) in the bucket.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ExportTaskS3LocationRequest

Describes the destination for an export image task.

## Contents

**S3Bucket**

The destination Amazon S3 bucket.

Type: String

Required: Yes

**S3Prefix**

The prefix (logical hierarchy) in the bucket.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ExportToS3Task

Describes the format and location for the export task.

## Contents

**containerFormat**

The container format used to combine disk images with metadata (such as OVF). If absent, only the disk image is exported.

Type: String

Valid Values: `ova`

Required: No

**diskImageFormat**

The format for the exported image.

Type: String

Valid Values: `VMDK | RAW | VHD`

Required: No

**s3Bucket**

The Amazon S3 bucket for the destination image. The destination bucket must exist and have an access control list (ACL) attached that specifies the Region-specific canonical account ID for the `Grantee`. For more information about the ACL to your S3 bucket, see Prerequisites in the VM Import/Export User Guide.

Type: String

Required: No

**s3Key**

The encryption key for your S3 bucket.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ExportToS3TaskSpecification

Describes an export instance task.

## Contents

**ContainerFormat**

The container format used to combine disk images with metadata (such as OVF). If absent, only the disk image is exported.

Type: String

Valid Values: `ova`

Required: No

**DiskImageFormat**

The format for the exported image.

Type: String

Valid Values: `VMDK | RAW | VHD`

Required: No

**S3Bucket**

The Amazon S3 bucket for the destination image. The destination bucket must exist and have an access control list (ACL) attached that specifies the Region-specific canonical account ID for the `Grantee`. For more information about the ACL to your S3 bucket, see Prerequisites in the VM Import/Export User Guide.

Type: String

Required: No

**S3Prefix**

The image is written to a single object in the Amazon S3 bucket at the S3 key s3prefix + exportTaskId + '.' + diskImageFormat.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ExternalAuthorityConfiguration

The configuration that links an Amazon VPC IPAM scope to an external authority system. It specifies the type of external system and the external resource identifier that identifies your account or instance in that system.

For more information, see Integrate VPC IPAM with Infoblox infrastructure in the *Amazon VPC IPAM User Guide*.

## Contents

**ExternalResourceIdentifier**

The identifier for the external resource managing this scope. For Infoblox integrations, this is the Infoblox resource identifier in the format `<version>.identity.account.<entity_realm>.<entity_id>`.

Type: String

Required: No

**Type**

The type of external authority.

Type: String

Valid Values: `infoblox`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FailedCapacityReservationFleetCancellationResult

Describes a Capacity Reservation Fleet that could not be cancelled.

## Contents

**cancelCapacityReservationFleetError**

Information about the Capacity Reservation Fleet cancellation error.

Type: CancelCapacityReservationFleetError object

Required: No

**capacityReservationFleetId**

The ID of the Capacity Reservation Fleet that could not be cancelled.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FailedQueuedPurchaseDeletion

Describes a Reserved Instance whose queued purchase was not deleted.

## Contents

**error**

The error.

Type: DeleteQueuedReservedInstancesError object

Required: No

**reservedInstancesId**

The ID of the Reserved Instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FastLaunchLaunchTemplateSpecificationRequest

Request to create a launch template for a Windows fast launch enabled AMI.

> **Note**
>
> Note - You can specify either the `LaunchTemplateName` or the `LaunchTemplateId`, but not both.

## Contents

**Version**

Specify the version of the launch template that the AMI should use for Windows fast launch.

Type: String

Required: Yes

**LaunchTemplateId**

Specify the ID of the launch template that the AMI should use for Windows fast launch.

Type: String

Required: No

**LaunchTemplateName**

Specify the name of the launch template that the AMI should use for Windows fast launch.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FastLaunchLaunchTemplateSpecificationResponse

Identifies the launch template that the AMI uses for Windows fast launch.

## Contents

**launchTemplateId**

The ID of the launch template that the AMI uses for Windows fast launch.

Type: String

Required: No

**launchTemplateName**

The name of the launch template that the AMI uses for Windows fast launch.

Type: String

Required: No

**version**

The version of the launch template that the AMI uses for Windows fast launch.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FastLaunchSnapshotConfigurationRequest

Configuration settings for creating and managing pre-provisioned snapshots for a Windows fast launch enabled AMI.

## Contents

**TargetResourceCount**

The number of pre-provisioned snapshots to keep on hand for a Windows fast launch enabled AMI.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FastLaunchSnapshotConfigurationResponse

Configuration settings for creating and managing pre-provisioned snapshots for a Windows fast launch enabled Windows AMI.

## Contents

**targetResourceCount**

The number of pre-provisioned snapshots requested to keep on hand for a Windows fast launch enabled AMI.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FederatedAuthentication

Describes the IAM SAML identity providers used for federated authentication.

## Contents

**samlProviderArn**

The Amazon Resource Name (ARN) of the IAM SAML identity provider.

Type: String

Required: No

**selfServiceSamlProviderArn**

The Amazon Resource Name (ARN) of the IAM SAML identity provider for the self-service portal.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FederatedAuthenticationRequest

The IAM SAML identity provider used for federated authentication.

## Contents

**SAMLProviderArn**

The Amazon Resource Name (ARN) of the IAM SAML identity provider.

Type: String

Required: No

**SelfServiceSAMLProviderArn**

The Amazon Resource Name (ARN) of the IAM SAML identity provider for the self-service portal.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Filter

A filter name and value pair that is used to return a more specific list of results from a describe operation. Filters can be used to match a set of resources by specific criteria, such as tags, attributes, or IDs.

If you specify multiple filters, the filters are joined with an `AND`, and the request returns only results that match all of the specified filters.

The filters supported by a describe operation are documented with the describe operation. For example:

- DescribeAvailabilityZones
- DescribeImages
- DescribeInstances
- DescribeKeyPairs
- DescribeSecurityGroups
- DescribeSnapshots
- DescribeSubnets
- DescribeTags
- DescribeVolumes
- DescribeVpcs

For more information, see List and filter using the CLI and API in the *Amazon EC2 User Guide*.

## Contents

**Name**

The name of the filter. Filter names are case-sensitive.

Type: String

Required: No

**Value.N**

The filter values. Filter values are case-sensitive. If you specify multiple values for a filter, the values are joined with an OR, and the request returns all results that match any of the specified values.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FilterPortRange

Describes a port range.

## Contents

**fromPort**

The first port in the range.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 65535.

Required: No

**toPort**

The last port in the range.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 65535.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FirewallStatefulRule

Describes a stateful rule.

## Contents

**DestinationPortSet.N**

The destination ports.

Type: Array of PortRange objects

Required: No

**DestinationSet.N**

The destination IP addresses, in CIDR notation.

Type: Array of strings

Required: No

**direction**

The direction. The possible values are `FORWARD` and `ANY`.

Type: String

Required: No

**protocol**

The protocol.

Type: String

Required: No

**ruleAction**

The rule action. The possible values are `pass`, `drop`, and `alert`.

Type: String

Required: No

**ruleGroupArn**

The ARN of the stateful rule group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**SourcePortSet.N**

The source ports.

Type: Array of PortRange objects

Required: No

**SourceSet.N**

The source IP addresses, in CIDR notation.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FirewallStatelessRule

Describes a stateless rule.

## Contents

**DestinationPortSet.N**

The destination ports.

Type: Array of PortRange objects

Required: No

**DestinationSet.N**

The destination IP addresses, in CIDR notation.

Type: Array of strings

Required: No

**priority**

The rule priority.

Type: Integer

Valid Range: Minimum value of -1. Maximum value of 65535.

Required: No

**ProtocolSet.N**

The protocols.

Type: Array of integers

Valid Range: Minimum value of 0. Maximum value of 255.

Required: No

**ruleAction**

The rule action. The possible values are `pass`, `drop`, and `forward_to_site`.

Type: String

Required: No

**ruleGroupArn**

The ARN of the stateless rule group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**SourcePortSet.N**

The source ports.

Type: Array of PortRange objects

Required: No

**SourceSet.N**

The source IP addresses, in CIDR notation.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetBlockDeviceMappingRequest

Describes a block device mapping, which defines the EBS volumes and instance store volumes to attach to an instance at launch.

To override a block device mapping specified in the launch template:

- Specify the exact same `DeviceName` here as specified in the launch template.
- Only specify the parameters you want to change.
- Any parameters you don't specify here will keep their original launch template values.

To add a new block device mapping:

- Specify a `DeviceName` that doesn't exist in the launch template.
- Specify all desired parameters here.

## Contents

**DeviceName**

The device name (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: No

**Ebs**

Parameters used to automatically set up EBS volumes when the instance is launched.

Type: FleetEbsBlockDeviceRequest object

Required: No

**NoDevice**

To omit the device from the block device mapping, specify an empty string. When this property is specified, the device is removed from the block device mapping regardless of the assigned value.

Type: String

Required: No

**VirtualName**

The virtual device name (`ephemeralN`). Instance store volumes are numbered starting from 0. An instance type with 2 available instance store volumes can specify mappings for `ephemeral0` and `ephemeral1`. The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.

NVMe instance store volumes are automatically enumerated and assigned a device name. Including them in your block device mapping has no effect.

Constraints: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetCapacityReservation

Information about a Capacity Reservation in a Capacity Reservation Fleet.

## Contents

**availabilityZone**

The Availability Zone in which the Capacity Reservation reserves capacity.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone in which the Capacity Reservation reserves capacity.

Type: String

Required: No

**capacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: No

**createDate**

The date and time at which the Capacity Reservation was created.

Type: Timestamp

Required: No

**ebsOptimized**

Indicates whether the Capacity Reservation reserves capacity for EBS-optimized instance types.

Type: Boolean

Required: No

**fulfilledCapacity**

The number of capacity units fulfilled by the Capacity Reservation. For more information, see Total target capacity in the *Amazon EC2 User Guide*.

Type: Double

Required: No

**instancePlatform**

The type of operating system for which the Capacity Reservation reserves capacity.

Type: String

Valid Values: `Linux/UNIX | Red Hat Enterprise Linux | SUSE Linux | Windows | Windows with SQL Server | Windows with SQL Server Enterprise | Windows with SQL Server Standard | Windows with SQL Server Web | Linux with SQL Server Standard | Linux with SQL Server Web | Linux with SQL Server Enterprise | RHEL with SQL Server Standard | RHEL with SQL Server Enterprise | RHEL with SQL Server Web | RHEL with HA | RHEL with HA and SQL Server Standard | RHEL with HA and SQL Server Enterprise | Ubuntu Pro`

Required: No

**instanceType**

The instance type for which the Capacity Reservation reserves capacity.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge |`

c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge

| m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge |

r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge

| c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge

| r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge

| c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge

Required: No

**priority**

The priority of the instance type in the Capacity Reservation Fleet. For more information, see Instance type priority in the *Amazon EC2 User Guide*.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

**totalInstanceCount**

The total number of instances for which the Capacity Reservation reserves capacity.

Type: Integer

Required: No

**weight**

The weight of the instance type in the Capacity Reservation Fleet. For more information, see Instance type weight in the *Amazon EC2 User Guide*.

Type: Double

Valid Range: Minimum value of 0.001. Maximum value of 99.999.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetData

Describes an EC2 Fleet.

## Contents

**activityStatus**

The progress of the EC2 Fleet.

For fleets of type `instant`, the status is `fulfilled` after all requests are placed, regardless of whether target capacity is met (this is the only possible status for `instant` fleets).

For fleets of type `request` or `maintain`, the status is `pending_fulfillment` after all requests are placed, `fulfilled` when the fleet size meets or exceeds target capacity, `pending_termination` while instances are terminating when fleet size is decreased, and `error` if there's an error.

Type: String

Valid Values: `error | pending_fulfillment | pending_termination | fulfilled`

Required: No

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring idempotency.

Constraints: Maximum 64 ASCII characters

Type: String

Required: No

**context**

Reserved.

Type: String

Required: No

**createTime**

The creation date and time of the EC2 Fleet.

Type: Timestamp

Required: No

**ErrorSet.N**

Information about the instances that could not be launched by the fleet. Valid only when **Type** is set to `instant`.

Type: Array of DescribeFleetError objects

Required: No

**excessCapacityTerminationPolicy**

Indicates whether running instances should be terminated if the target capacity of the EC2 Fleet is decreased below the current size of the EC2 Fleet.

Supported only for fleets of type `maintain`.

Type: String

Valid Values: `no-termination | termination`

Required: No

**fleetId**

The ID of the EC2 Fleet.

Type: String

Required: No

**FleetInstanceSet.N**

Information about the instances that were launched by the fleet. Valid only when **Type** is set to `instant`.

Type: Array of DescribeFleetsInstances objects

Required: No

**fleetState**

The state of the EC2 Fleet.

Type: String

Valid Values: `submitted | active | deleted | failed | deleted_running | deleted_terminating | modifying`

Required: No

**fulfilledCapacity**

The number of units fulfilled by this request compared to the set target capacity.

Type: Double

Required: No

**fulfilledOnDemandCapacity**

The number of units fulfilled by this request compared to the set target On-Demand capacity.

Type: Double

Required: No

**LaunchTemplateConfigs.N**

The launch template and overrides.

Type: Array of FleetLaunchTemplateConfig objects

Required: No

**onDemandOptions**

The allocation strategy of On-Demand Instances in an EC2 Fleet.

Type: OnDemandOptions object

Required: No

**replaceUnhealthyInstances**

Indicates whether EC2 Fleet should replace unhealthy Spot Instances. Supported only for fleets of type `maintain`. For more information, see EC2 Fleet health checks in the *Amazon EC2 User Guide*.

Type: Boolean

Required: No

**reservedCapacityOptions**

Defines EC2 Fleet preferences for utilizing reserved capacity when DefaultTargetCapacityType is set to `reserved-capacity`.

Type: ReservedCapacityOptions object

Required: No

**spotOptions**

The configuration of Spot Instances in an EC2 Fleet.

Type: SpotOptions object

Required: No

**TagSet.N**

The tags for an EC2 Fleet resource.

Type: Array of Tag objects

Required: No

**targetCapacitySpecification**

The number of units to request. You can choose to set the target capacity in terms of instances or a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O. If the request type is `maintain`, you can specify a target capacity of 0 and add capacity later.

Type: TargetCapacitySpecification object

Required: No

**terminateInstancesWithExpiration**

Indicates whether running instances should be terminated when the EC2 Fleet expires.

Type: Boolean

Required: No

**type**

The type of request. Indicates whether the EC2 Fleet only `requests` the target capacity, or also attempts to `maintain` it. If you request a certain target capacity, EC2 Fleet only places the required requests; it does not attempt to replenish instances if capacity is diminished, and it does not submit requests in alternative capacity pools if capacity is unavailable. To maintain a certain target capacity, EC2 Fleet places the required requests to meet this target capacity. It also automatically replenishes any interrupted Spot Instances. Default: `maintain`.

Type: String

Valid Values: `request | maintain | instant`

Required: No

**validFrom**

The start date and time of the request, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). The default is to start fulfilling the request immediately.

Type: Timestamp

Required: No

**validUntil**

The end date and time of the request, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). At this point, no new instance requests are placed or able to fulfill the request. The default end date is 7 days from the current date.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# FleetEbsBlockDeviceRequest

Describes a block device for an EBS volume.

## Contents

**DeleteOnTermination**

Indicates whether the EBS volume is deleted on instance termination. For more information, see Preserve data when an instance is terminated in the *Amazon EC2 User Guide*.

Type: Boolean

Required: No

**Encrypted**

Indicates whether the encryption state of an EBS volume is changed while being restored from a backing snapshot. The effect of setting the encryption state to `true` depends on the volume origin (new or from a snapshot), starting encryption state, ownership, and whether encryption by default is enabled. For more information, see Amazon EBS encryption in the *Amazon EBS User Guide*.

In no case can you remove encryption from an encrypted volume.

Encrypted volumes can only be attached to instances that support Amazon EBS encryption. For more information, see Supported instance types.

This parameter is not returned by DescribeImageAttribute.

For CreateImage and RegisterImage, whether you can include this parameter, and the allowed values differ depending on the type of block device mapping you are creating.

- If you are creating a block device mapping for a **new (empty) volume**, you can include this parameter, and specify either `true` for an encrypted volume, or `false` for an unencrypted volume. If you omit this parameter, it defaults to `false` (unencrypted).
- If you are creating a block device mapping from an **existing encrypted or unencrypted snapshot**, you must omit this parameter. If you include this parameter, the request will fail, regardless of the value that you specify.
- If you are creating a block device mapping from an **existing unencrypted volume**, you can include this parameter, but you must specify `false`. If you specify `true`, the request will fail. In this case, we recommend that you omit the parameter.

- If you are creating a block device mapping from an **existing encrypted volume**, you can include this parameter, and specify either `true` or `false`. However, if you specify `false`, the parameter is ignored and the block device mapping is always encrypted. In this case, we recommend that you omit the parameter.

Type: Boolean

Required: No

**Iops**

The number of I/O operations per second (IOPS). For `gp3`, `io1`, and `io2` volumes, this represents the number of IOPS that are provisioned for the volume. For `gp2` volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting.

The following are the supported values for each volume type:

- `gp3`: 3,000 - 80,000 IOPS
- `io1`: 100 - 64,000 IOPS
- `io2`: 100 - 256,000 IOPS

For `io2` volumes, you can achieve up to 256,000 IOPS on instances built on the Nitro System. On other instances, you can achieve performance up to 32,000 IOPS.

This parameter is required for `io1` and `io2` volumes. The default for `gp3` volumes is 3,000 IOPS.

Type: Integer

Required: No

**KmsKeyId**

Identifier (key ID, key alias, key ARN, or alias ARN) of the customer managed KMS key to use for EBS encryption.

This parameter is only supported on `BlockDeviceMapping` objects called by CreateFleet, RequestSpotInstances, and RunInstances.

Type: String

Required: No

**SnapshotId**

The ID of the snapshot.

Type: String

Required: No

**Throughput**

The throughput that the volume supports, in MiB/s.

This parameter is valid only for gp3 volumes.

Valid Range: Minimum value of 125. Maximum value of 2,000.

Type: Integer

Required: No

**VolumeSize**

The size of the volume, in GiBs. You must specify either a snapshot ID or a volume size. If you specify a snapshot, the default is the snapshot size. You can specify a volume size that is equal to or larger than the snapshot size.

The following are the supported sizes for each volume type:

- gp2: 1 - 16,384 GiB
- gp3: 1 - 65,536 GiB
- io1: 4 - 16,384 GiB
- io2: 4 - 65,536 GiB
- st1 and sc1: 125 - 16,384 GiB
- standard: 1 - 1024 GiB

Type: Integer

Required: No

**VolumeType**

The volume type. For more information, see Amazon EBS volume types in the *Amazon EBS User Guide*.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetLaunchTemplateConfig

Describes a launch template and overrides.

## Contents

**launchTemplateSpecification**

The launch template.

Type: FleetLaunchTemplateSpecification object

Required: No

**Overrides.N**

Any parameters that you specify override the same parameters in the launch template.

Type: Array of FleetLaunchTemplateOverrides objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetLaunchTemplateConfigRequest

Describes a launch template and overrides.

## Contents

**LaunchTemplateSpecification**

The launch template to use. You must specify either the launch template ID or launch template name in the request.

Type: FleetLaunchTemplateSpecificationRequest object

Required: No

**Overrides.N**

Any parameters that you specify override the same parameters in the launch template.

For fleets of type `request` and `maintain`, a maximum of 300 items is allowed across all launch templates.

Type: Array of FleetLaunchTemplateOverridesRequest objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetLaunchTemplateOverrides

Describes overrides for a launch template.

## Contents

**availabilityZone**

The Availability Zone in which to launch the instances. For example, `us-east-2a`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone in which to launch the instances. For example, `use2-az1`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: String

Required: No

**BlockDeviceMappingSet.N**

The block device mappings, which define the EBS volumes and instance store volumes to attach to the instance at launch.

Supported only for fleets of type `instant`.

For more information, see Block device mappings for volumes on Amazon EC2 instances in the *Amazon EC2 User Guide*.

Type: Array of BlockDeviceMappingResponse objects

Required: No

**imageId**

The ID of the AMI in the format `ami-17characters00000`.

Alternatively, you can specify a Systems Manager parameter, using one of the following formats. The Systems Manager parameter will resolve to an AMI ID on launch.

To reference a public parameter:

- `resolve:ssm:public-parameter`

To reference a parameter stored in the same account:

- `resolve:ssm:parameter-name`
- `resolve:ssm:parameter-name:version-number`
- `resolve:ssm:parameter-name:label`

To reference a parameter shared from another AWS account:

- `resolve:ssm:parameter-ARN`
- `resolve:ssm:parameter-ARN:version-number`
- `resolve:ssm:parameter-ARN:label`

For more information, see Use a Systems Manager parameter instead of an AMI ID in the *Amazon EC2 User Guide*.

> **Note**
>
> This parameter is only available for fleets of type `instant`. For fleets of type `maintain` and `request`, you must specify the AMI ID in the launch template.

Type: String

Required: No

**instanceRequirements**

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

> **Note**
>
> If you specify `InstanceRequirements`, you can't specify `InstanceType`.

Type: InstanceRequirements object

Required: No

**instanceType**

The instance type.

`mac1.metal` is not supported as a launch template override.

> **Note**
>
> If you specify `InstanceType`, you can't specify `InstanceRequirements`.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge`

| g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge

| m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge

| x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge

| r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge

| u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large |

`g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge`

Required: No

**maxPrice**

The maximum price per unit hour that you are willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your instances will be interrupted more frequently than if you do not specify this parameter.
> If you specify a maximum price, it must be more than USD $0.001. Specifying a value below USD $0.001 will result in an `InvalidParameterValue` error message.

Type: String

Required: No

**placement**

The location where the instance launched, if applicable.

Type: PlacementResponse object

Required: No

**priority**

The priority for the launch template override. The highest priority is launched first.

If the On-Demand `AllocationStrategy` is set to `prioritized`, EC2 Fleet uses priority to determine which launch template override to use first in fulfilling On-Demand capacity.

If the Spot `AllocationStrategy` is set to `capacity-optimized-prioritized`, EC2 Fleet uses priority on a best-effort basis to determine which launch template override to use in fulfilling Spot capacity, but optimizes for capacity first.

Valid values are whole numbers starting at `0`. The lower the number, the higher the priority. If no number is set, the override has the lowest priority. You can set the same priority for different launch template overrides.

Type: Double

Required: No

**subnetId**

The ID of the subnet in which to launch the instances.

Type: String

Required: No

**weightedCapacity**

The number of units provided by the specified instance type. These are the same units that you chose to set the target capacity in terms of instances, or a performance characteristic such as vCPUs, memory, or I/O.

If the target capacity divided by this value is not a whole number, Amazon EC2 rounds the number of instances to the next whole number. If this value is not specified, the default is 1.

> **Note**
>
> When specifying weights, the price used in the `lowest-price` and `price-capacity-optimized` allocation strategies is per *unit* hour (where the instance price is divided by the specified weight). However, if all the specified weights are above the requested `TargetCapacity`, resulting in only 1 instance being launched, the price used is per *instance* hour.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetLaunchTemplateOverridesRequest

Describes overrides for a launch template.

## Contents

**AvailabilityZone**

The Availability Zone in which to launch the instances. For example, `us-east-2a`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: String

Required: No

**AvailabilityZoneId**

The ID of the Availability Zone in which to launch the instances. For example, `use2-az1`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: String

Required: No

**BlockDeviceMapping.N**

The block device mappings, which define the EBS volumes and instance store volumes to attach to the instance at launch.

Supported only for fleets of type `instant`.

For more information, see Block device mappings for volumes on Amazon EC2 instances in the *Amazon EC2 User Guide*.

Type: Array of FleetBlockDeviceMappingRequest objects

Required: No

**ImageId**

The ID of the AMI in the format `ami-17characters00000`.

Alternatively, you can specify a Systems Manager parameter, using one of the following formats. The Systems Manager parameter will resolve to an AMI ID on launch.

To reference a public parameter:

- `resolve:ssm:public-parameter`

To reference a parameter stored in the same account:

- `resolve:ssm:parameter-name`
- `resolve:ssm:parameter-name:version-number`
- `resolve:ssm:parameter-name:label`

To reference a parameter shared from another AWS account:

- `resolve:ssm:parameter-ARN`
- `resolve:ssm:parameter-ARN:version-number`
- `resolve:ssm:parameter-ARN:label`

For more information, see Use a Systems Manager parameter instead of an AMI ID in the *Amazon EC2 User Guide*.

> **Note**
>
> This parameter is only available for fleets of type `instant`. For fleets of type `maintain` and `request`, you must specify the AMI ID in the launch template.

Type: String

Required: No

**InstanceRequirements**

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

> **Note**
>
> If you specify `InstanceRequirements`, you can't specify `InstanceType`.

Type: InstanceRequirementsRequest object

Required: No

**InstanceType**

The instance type.

`mac1.metal` is not supported as a launch template override.

> **Note**
>
> If you specify `InstanceType`, you can't specify `InstanceRequirements`.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge`

| g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge

| m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge

| x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge

| r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge

| u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large |

`g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge`

Required: No

**MaxPrice**

The maximum price per unit hour that you are willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your instances will be interrupted more frequently than if you do not specify this parameter.
> If you specify a maximum price, it must be more than USD $0.001. Specifying a value below USD $0.001 will result in an `InvalidParameterValue` error message.

Type: String

Required: No

**Placement**

The location where the instance launched, if applicable.

Type: Placement object

Required: No

**Priority**

The priority for the launch template override. The highest priority is launched first.

If the On-Demand `AllocationStrategy` is set to `prioritized`, EC2 Fleet uses priority to determine which launch template override to use first in fulfilling On-Demand capacity.

If the Spot `AllocationStrategy` is set to `capacity-optimized-prioritized`, EC2 Fleet uses priority on a best-effort basis to determine which launch template override to use in fulfilling Spot capacity, but optimizes for capacity first.

Valid values are whole numbers starting at `0`. The lower the number, the higher the priority. If no number is set, the launch template override has the lowest priority. You can set the same priority for different launch template overrides.

Type: Double

Required: No

**SubnetId**

The IDs of the subnets in which to launch the instances. Separate multiple subnet IDs using commas (for example, `subnet-1234abcdeexample1, subnet-0987cdef6example2`). A request of type `instant` can have only one subnet ID.

Type: String

Required: No

**WeightedCapacity**

The number of units provided by the specified instance type. These are the same units that you chose to set the target capacity in terms of instances, or a performance characteristic such as vCPUs, memory, or I/O.

If the target capacity divided by this value is not a whole number, Amazon EC2 rounds the number of instances to the next whole number. If this value is not specified, the default is 1.

> **Note**
>
> When specifying weights, the price used in the `lowest-price` and `price-capacity-optimized` allocation strategies is per *unit* hour (where the instance price is divided by the specified weight). However, if all the specified weights are above the requested `TargetCapacity`, resulting in only 1 instance being launched, the price used is per *instance* hour.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetLaunchTemplateSpecification

The Amazon EC2 launch template that can be used by a Spot Fleet to configure Amazon EC2 instances. You must specify either the ID or name of the launch template in the request, but not both.

For information about launch templates, see Launch an instance from a launch template in the *Amazon EC2 User Guide*.

## Contents

**LaunchTemplateId** (request), **launchTemplateId** (response)

The ID of the launch template.

You must specify the `LaunchTemplateId` or the `LaunchTemplateName`, but not both.

Type: String

Required: No

**LaunchTemplateName** (request), **launchTemplateName** (response)

The name of the launch template.

You must specify the `LaunchTemplateName` or the `LaunchTemplateId`, but not both.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: `[a-zA-Z0-9\(\)\.\-/_]+`

Required: No

**Version** (request), **version** (response)

The launch template version number, `$Latest`, or `$Default`. You must specify a value, otherwise the request fails.

If the value is `$Latest`, Amazon EC2 uses the latest version of the launch template.

If the value is `$Default`, Amazon EC2 uses the default version of the launch template.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetLaunchTemplateSpecificationRequest

The Amazon EC2 launch template that can be used by an EC2 Fleet to configure Amazon EC2 instances. You must specify either the ID or name of the launch template in the request, but not both.

For information about launch templates, see Launch an instance from a launch template in the *Amazon EC2 User Guide*.

## Contents

**LaunchTemplateId**

The ID of the launch template.

You must specify the `LaunchTemplateId` or the `LaunchTemplateName`, but not both.

Type: String

Required: No

**LaunchTemplateName**

The name of the launch template.

You must specify the `LaunchTemplateName` or the `LaunchTemplateId`, but not both.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: `[a-zA-Z0-9\(\)\.\-/_]+`

Required: No

**Version**

The launch template version number, `$Latest`, or `$Default`. You must specify a value, otherwise the request fails.

If the value is `$Latest`, Amazon EC2 uses the latest version of the launch template.

If the value is `$Default`, Amazon EC2 uses the default version of the launch template.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetSpotCapacityRebalance

The strategy to use when Amazon EC2 emits a signal that your Spot Instance is at an elevated risk of being interrupted.

## Contents

**replacementStrategy**

The replacement strategy to use. Only available for fleets of type `maintain`.

`launch` - EC2 Fleet launches a new replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet. EC2 Fleet does not terminate the instances that receive a rebalance notification. You can terminate the old instances, or you can leave them running. You are charged for all instances while they are running.

`launch-before-terminate` - EC2 Fleet launches a new replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet, and then, after a delay that you specify (in `TerminationDelay`), terminates the instances that received a rebalance notification.

Type: String

Valid Values: `launch | launch-before-terminate`

Required: No

**terminationDelay**

The amount of time (in seconds) that Amazon EC2 waits before terminating the old Spot Instance after launching a new replacement Spot Instance.

Required when `ReplacementStrategy` is set to `launch-before-terminate`.

Not valid when `ReplacementStrategy` is set to `launch`.

Valid values: Minimum value of `120` seconds. Maximum value of `7200` seconds.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetSpotCapacityRebalanceRequest

The Spot Instance replacement strategy to use when Amazon EC2 emits a rebalance notification signal that your Spot Instance is at an elevated risk of being interrupted. For more information, see Capacity rebalancing in the *Amazon EC2 User Guide*.

## Contents

**ReplacementStrategy**

The replacement strategy to use. Only available for fleets of type `maintain`.

`launch` - EC2 Fleet launches a replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet. EC2 Fleet does not terminate the instances that receive a rebalance notification. You can terminate the old instances, or you can leave them running. You are charged for all instances while they are running.

`launch-before-terminate` - EC2 Fleet launches a replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet, and then, after a delay that you specify (in `TerminationDelay`), terminates the instances that received a rebalance notification.

Type: String

Valid Values: `launch | launch-before-terminate`

Required: No

**TerminationDelay**

The amount of time (in seconds) that Amazon EC2 waits before terminating the old Spot Instance after launching a new replacement Spot Instance.

Required when `ReplacementStrategy` is set to `launch-before-terminate`.

Not valid when `ReplacementStrategy` is set to `launch`.

Valid values: Minimum value of `120` seconds. Maximum value of `7200` seconds.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetSpotMaintenanceStrategies

The strategies for managing your Spot Instances that are at an elevated risk of being interrupted.

## Contents

**capacityRebalance**

The strategy to use when Amazon EC2 emits a signal that your Spot Instance is at an elevated risk of being interrupted.

Type: FleetSpotCapacityRebalance object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FleetSpotMaintenanceStrategiesRequest

The strategies for managing your Spot Instances that are at an elevated risk of being interrupted.

## Contents

### CapacityRebalance

The strategy to use when Amazon EC2 emits a signal that your Spot Instance is at an elevated risk of being interrupted.

Type: FleetSpotCapacityRebalanceRequest object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FlowLog

Describes a flow log.

## Contents

**creationTime**

The date and time the flow log was created.

Type: Timestamp

Required: No

**deliverCrossAccountRole**

The ARN of the IAM role that allows the service to publish flow logs across accounts.

Type: String

Required: No

**deliverLogsErrorMessage**

Information about the error that occurred. `Rate limited` indicates that CloudWatch Logs throttling has been applied for one or more network interfaces, or that you've reached the limit on the number of log groups that you can create. `Access error` indicates that the IAM role associated with the flow log does not have sufficient permissions to publish to CloudWatch Logs. `Unknown error` indicates an internal error.

Type: String

Required: No

**deliverLogsPermissionArn**

The ARN of the IAM role allows the service to publish logs to CloudWatch Logs.

Type: String

Required: No

**deliverLogsStatus**

The status of the logs delivery (`SUCCESS` | `FAILED`).

Type: String

Required: No

**destinationOptions**

The destination options.

Type: DestinationOptionsResponse object

Required: No

**flowLogId**

The ID of the flow log.

Type: String

Required: No

**flowLogStatus**

The status of the flow log (`ACTIVE`).

Type: String

Required: No

**logDestination**

The Amazon Resource Name (ARN) of the destination for the flow log data.

Type: String

Required: No

**logDestinationType**

The type of destination for the flow log data.

Type: String

Valid Values: `cloud-watch-logs | s3 | kinesis-data-firehose`

Required: No

**logFormat**

The format of the flow log record.

Type: String

Required: No

**logGroupName**

The name of the flow log group.

Type: String

Required: No

**maxAggregationInterval**

The maximum interval of time, in seconds, during which a flow of packets is captured and aggregated into a flow log record.

When a network interface is attached to a Nitro-based instance, the aggregation interval is always 60 seconds (1 minute) or less, regardless of the specified value.

Valid Values: `60` | `600`

Type: Integer

Required: No

**resourceId**

The ID of the resource being monitored.

Type: String

Required: No

**TagFieldSpecificationSet.N**

The tag configuration associated with the Flow Logs Amazon EC2 Tags feature fields in your custom log format.

Type: Array of TagFieldSpecificationResponse objects

Array Members: Minimum number of 1 item. Maximum number of 3 items.

Required: No

**TagSet.N**

The tags for the flow log.

Type: Array of Tag objects

Required: No

**trafficType**

The type of traffic captured for the flow log.

Type: String

Valid Values: `ACCEPT | REJECT | ALL`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FpgaDeviceInfo

Describes the FPGA accelerator for the instance type.

## Contents

**count**

The count of FPGA accelerators for the instance type.

Type: Integer

Required: No

**manufacturer**

The manufacturer of the FPGA accelerator.

Type: String

Required: No

**memoryInfo**

Describes the memory for the FPGA accelerator for the instance type.

Type: FpgaDeviceMemoryInfo object

Required: No

**name**

The name of the FPGA accelerator.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FpgaDeviceMemoryInfo

Describes the memory for the FPGA accelerator for the instance type.

## Contents

**sizeInMiB**

The size of the memory available to the FPGA accelerator, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FpgaImage

Describes an Amazon FPGA image (AFI).

## Contents

**createTime**

The date and time the AFI was created.

Type: Timestamp

Required: No

**dataRetentionSupport**

Indicates whether data retention support is enabled for the AFI.

Type: Boolean

Required: No

**description**

The description of the AFI.

Type: String

Required: No

**fpgaImageGlobalId**

The global FPGA image identifier (AGFI ID).

Type: String

Required: No

**fpgaImageId**

The FPGA image identifier (AFI ID).

Type: String

Required: No

**InstanceTypes.N**

The instance types supported by the AFI.

Type: Array of strings

Required: No

**name**

The name of the AFI.

Type: String

Required: No

**ownerAlias**

The alias of the AFI owner. Possible values include `self`, `amazon`, and `aws-marketplace`.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the AFI.

Type: String

Required: No

**pciId**

Information about the PCI bus.

Type: PciId object

Required: No

**ProductCodes.N**

The product codes for the AFI.

Type: Array of ProductCode objects

Required: No

**public**

Indicates whether the AFI is public.

Type: Boolean

Required: No

**shellVersion**

The version of the AWS Shell that was used to create the bitstream.

Type: String

Required: No

**state**

Information about the state of the AFI.

Type: FpgaImageState object

Required: No

**Tags.N**

Any tags assigned to the AFI.

Type: Array of Tag objects

Required: No

**updateTime**

The time of the most recent update to the AFI.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FpgaImageAttribute

Describes an Amazon FPGA image (AFI) attribute.

## Contents

**description**

The description of the AFI.

Type: String

Required: No

**fpgaImageId**

The ID of the AFI.

Type: String

Required: No

**LoadPermissions.N**

The load permissions.

Type: Array of LoadPermission objects

Required: No

**name**

The name of the AFI.

Type: String

Required: No

**ProductCodes.N**

The product codes.

Type: Array of ProductCode objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FpgaImageState

Describes the state of the bitstream generation process for an Amazon FPGA image (AFI).

## Contents

**code**

The state. The following are the possible values:

- `pending` - AFI bitstream generation is in progress.
- `available` - The AFI is available for use.
- `failed` - AFI bitstream generation failed.
- `unavailable` - The AFI is no longer available for use.

Type: String

Valid Values: `pending | failed | available | unavailable`

Required: No

**message**

If the state is `failed`, this is the error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# FpgaInfo

Describes the FPGAs for the instance type.

## Contents

**Fpgas.N**

Describes the FPGAs for the instance type.

Type: Array of FpgaDeviceInfo objects

Required: No

**totalFpgaMemoryInMiB**

The total memory of all FPGA accelerators for the instance type.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# GpuDeviceInfo

Describes the GPU accelerators for the instance type.

## Contents

**count**

The number of GPUs for the instance type.

Type: Integer

Required: No

**gpuPartitionSize**

The size of each GPU as a fraction of a full GPU, between 0 (excluded) and 1 (included).

Type: Double

Required: No

**logicalGpuCount**

Total number of GPU devices of this type.

Type: Integer

Required: No

**manufacturer**

The manufacturer of the GPU accelerator.

Type: String

Required: No

**memoryInfo**

Describes the memory available to the GPU accelerator.

Type: GpuDeviceMemoryInfo object

Required: No

**name**

The name of the GPU accelerator.

Type: String

Required: No

**WorkloadSet.N**

A list of workload types this GPU supports.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# GpuDeviceMemoryInfo

Describes the memory available to the GPU accelerator.

## Contents

**sizeInMiB**

The size of the memory available to the GPU accelerator, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# GpuInfo

Describes the GPU accelerators for the instance type.

## Contents

**Gpus.N**

Describes the GPU accelerators for the instance type.

Type: Array of GpuDeviceInfo objects

Required: No

**totalGpuMemoryInMiB**

The total size of the memory for the GPU accelerators for the instance type, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# GroupIdentifier

Describes a security group.

## Contents

**GroupId** (request), **groupId** (response)

The ID of the security group.

Type: String

Required: No

**GroupName** (request), **groupName** (response)

The name of the security group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# HibernationOptions

Indicates whether your instance is configured for hibernation. This parameter is valid only if the instance meets the hibernation prerequisites. For more information, see Hibernate your Amazon EC2 instance in the *Amazon EC2 User Guide*.

## Contents

**configured**

If `true`, your instance is enabled for hibernation; otherwise, it is not enabled for hibernation.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# HibernationOptionsRequest

Indicates whether your instance is configured for hibernation. This parameter is valid only if the instance meets the hibernation prerequisites. For more information, see Hibernate your Amazon EC2 instance in the *Amazon EC2 User Guide*.

## Contents

**Configured**

Set to `true` to enable your instance for hibernation.

For Spot Instances, if you set `Configured` to `true`, either omit the `InstanceInterruptionBehavior` parameter (for `SpotMarketOptions`), or set it to `hibernate`. When `Configured` is true:

- If you omit `InstanceInterruptionBehavior`, it defaults to `hibernate`.
- If you set `InstanceInterruptionBehavior` to a value other than `hibernate`, you'll get an error.

Default: `false`

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# HistoryRecord

Describes an event in the history of the Spot Fleet request.

## Contents

**eventInformation**

Information about the event.

Type: EventInformation object

Required: No

**eventType**

The event type.

- `error` - An error with the Spot Fleet request.
- `fleetRequestChange` - A change in the status or configuration of the Spot Fleet request.
- `instanceChange` - An instance was launched or terminated.
- `Information` - An informational event.

Type: String

Valid Values: `instanceChange | fleetRequestChange | error | information`

Required: No

**timestamp**

The date and time of the event, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# HistoryRecordEntry

Describes an event in the history of an EC2 Fleet.

## Contents

**eventInformation**

Information about the event.

Type: EventInformation object

Required: No

**eventType**

The event type.

Type: String

Valid Values: `instance-change | fleet-change | service-error`

Required: No

**timestamp**

The date and time of the event, in UTC format (for example, *YYYY*-*MM*-*DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Host

Describes the properties of the Dedicated Host.

## Contents

**allocationTime**

The time that the Dedicated Host was allocated.

Type: Timestamp

Required: No

**allowsMultipleInstanceTypes**

Indicates whether the Dedicated Host supports multiple instance types of the same instance family. If the value is `on`, the Dedicated Host supports multiple instance types in the instance family. If the value is `off`, the Dedicated Host supports a single instance type only.

Type: String

Valid Values: `on | off`

Required: No

**assetId**

The ID of the Outpost hardware asset on which the Dedicated Host is allocated.

Type: String

Required: No

**autoPlacement**

Whether auto-placement is on or off.

Type: String

Valid Values: `on | off`

Required: No

**availabilityZone**

The Availability Zone of the Dedicated Host.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone in which the Dedicated Host is allocated.

Type: String

Required: No

**availableCapacity**

Information about the instances running on the Dedicated Host.

Type: AvailableCapacity object

Required: No

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see Ensuring Idempotency.

Type: String

Required: No

**hostId**

The ID of the Dedicated Host.

Type: String

Required: No

**hostMaintenance**

Indicates whether host maintenance is enabled or disabled for the Dedicated Host.

Type: String

Valid Values: `on` | `off`

Required: No

**hostProperties**

The hardware specifications of the Dedicated Host.

Type: HostProperties object

Required: No

**hostRecovery**

Indicates whether host recovery is enabled or disabled for the Dedicated Host.

Type: String

Valid Values: `on` | `off`

Required: No

**hostReservationId**

The reservation ID of the Dedicated Host. This returns a `null` response if the Dedicated Host doesn't have an associated reservation.

Type: String

Required: No

**Instances.N**

The IDs and instance type that are currently running on the Dedicated Host.

Type: Array of HostInstance objects

Required: No

**memberOfServiceLinkedResourceGroup**

Indicates whether the Dedicated Host is in a host resource group. If **memberOfServiceLinkedResourceGroup** is `true`, the host is in a host resource group; otherwise, it is not.

Type: Boolean

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the AWS Outpost on which the Dedicated Host is allocated.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the Dedicated Host.

Type: String

Required: No

**releaseTime**

The time that the Dedicated Host was released.

Type: Timestamp

Required: No

**state**

The Dedicated Host's state.

Type: String

Valid Values: `available | under-assessment | permanent-failure | released | released-permanent-failure | pending`

Required: No

**TagSet.N**

Any tags assigned to the Dedicated Host.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# HostInstance

Describes an instance running on a Dedicated Host.

## Contents

**instanceId**

The ID of instance that is running on the Dedicated Host.

Type: String

Required: No

**instanceType**

The instance type (for example, `m3.medium`) of the running instance.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# HostOffering

Details about the Dedicated Host Reservation offering.

## Contents

**currencyCode**

The currency of the offering.

Type: String

Valid Values: USD

Required: No

**duration**

The duration of the offering (in seconds).

Type: Integer

Required: No

**hourlyPrice**

The hourly price of the offering.

Type: String

Required: No

**instanceFamily**

The instance family of the offering.

Type: String

Required: No

**offeringId**

The ID of the offering.

Type: String

Required: No

**paymentOption**

The available payment option.

Type: String

Valid Values: `AllUpfront | PartialUpfront | NoUpfront`

Required: No

**upfrontPrice**

The upfront price of the offering. Does not apply to No Upfront offerings.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# HostProperties

Describes the properties of a Dedicated Host.

## Contents

**cores**

The number of cores on the Dedicated Host.

Type: Integer

Required: No

**instanceFamily**

The instance family supported by the Dedicated Host. For example, `m5`.

Type: String

Required: No

**instanceType**

The instance type supported by the Dedicated Host. For example, `m5.large`. If the host supports multiple instance types, no **instanceType** is returned.

Type: String

Required: No

**sockets**

The number of sockets on the Dedicated Host.

Type: Integer

Required: No

**totalVCpus**

The total number of vCPUs on the Dedicated Host.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# HostReservation

Details about the Dedicated Host Reservation and associated Dedicated Hosts.

## Contents

**count**

The number of Dedicated Hosts the reservation is associated with.

Type: Integer

Required: No

**currencyCode**

The currency in which the `upfrontPrice` and `hourlyPrice` amounts are specified. At this time, the only supported currency is `USD`.

Type: String

Valid Values: `USD`

Required: No

**duration**

The length of the reservation's term, specified in seconds. Can be `31536000 (1 year)` | `94608000 (3 years)`.

Type: Integer

Required: No

**end**

The date and time that the reservation ends.

Type: Timestamp

Required: No

**HostIdSet.N**

The IDs of the Dedicated Hosts associated with the reservation.

Type: Array of strings

Required: No

**hostReservationId**

The ID of the reservation that specifies the associated Dedicated Hosts.

Type: String

Required: No

**hourlyPrice**

The hourly price of the reservation.

Type: String

Required: No

**instanceFamily**

The instance family of the Dedicated Host Reservation. The instance family on the Dedicated Host must be the same in order for it to benefit from the reservation.

Type: String

Required: No

**offeringId**

The ID of the reservation. This remains the same regardless of which Dedicated Hosts are associated with it.

Type: String

Required: No

**paymentOption**

The payment option selected for this reservation.

Type: String

Valid Values: `AllUpfront | PartialUpfront | NoUpfront`

Required: No

**start**

The date and time that the reservation started.

Type: Timestamp

Required: No

**state**

The state of the reservation.

Type: String

Valid Values: `active | expired | cancelled | scheduled | pending | failed | delayed | unsupported | payment-pending | payment-failed | retired`

Required: No

**TagSet.N**

Any tags assigned to the Dedicated Host Reservation.

Type: Array of Tag objects

Required: No

**upfrontPrice**

The upfront price of the reservation.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IamInstanceProfile

Describes an IAM instance profile.

## Contents

**arn**

The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

**id**

The ID of the instance profile.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IamInstanceProfileAssociation

Describes an association between an IAM instance profile and an instance.

## Contents

**associationId**

The ID of the association.

Type: String

Required: No

**iamInstanceProfile**

The IAM instance profile.

Type: IamInstanceProfile object

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

**state**

The state of the association.

Type: String

Valid Values: `associating | associated | disassociating | disassociated`

Required: No

**timestamp**

The time the IAM instance profile was associated with the instance.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IamInstanceProfileSpecification

Describes an IAM instance profile.

## Contents

**Arn** (request), **arn** (response)

The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

**Name** (request), **name** (response)

The name of the instance profile.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IcmpTypeCode

Describes the ICMP type and code.

## Contents

**Code** (request), **code** (response)

The ICMP code. A value of -1 means all codes for the specified ICMP type.

Type: Integer

Required: No

**Type** (request), **type** (response)

The ICMP type. A value of -1 means all types.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IdFormat

Describes the ID format for a resource.

## Contents

**deadline**

The date in UTC at which you are permanently switched over to using longer IDs. If a deadline is not yet available for this resource type, this field is not returned.

Type: Timestamp

Required: No

**resource**

The type of resource.

Type: String

Required: No

**useLongIds**

Indicates whether longer IDs (17-character IDs) are enabled for the resource.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IKEVersionsListValue

The internet key exchange (IKE) version permitted for the VPN tunnel.

## Contents

**value**

The IKE version.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IKEVersionsRequestListValue

The IKE version that is permitted for the VPN tunnel.

## Contents

### Value

The IKE version.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Image

Describes an image.

## Contents

**architecture**

The architecture of the image.

Type: String

Valid Values: `i386 | x86_64 | arm64 | x86_64_mac | arm64_mac`

Required: No

**BlockDeviceMapping.N**

Any block device mapping entries.

Type: Array of BlockDeviceMapping objects

Required: No

**bootMode**

The boot mode of the image. For more information, see Instance launch behavior with Amazon EC2 boot modes in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `legacy-bios | uefi | uefi-preferred`

Required: No

**creationDate**

The date and time the image was created.

Type: String

Required: No

**deprecationTime**

The date and time to deprecate the AMI, in UTC, in the following format: *YYYY-MM-DD*T*HH*:*MM*:*SS*Z. If you specified a value for seconds, Amazon EC2 rounds the seconds to the nearest minute.

Type: String

Required: No

**deregistrationProtection**

Indicates whether deregistration protection is enabled for the AMI.

Type: String

Required: No

**description**

The description of the AMI that was provided during image creation.

Type: String

Required: No

**enaSupport**

Specifies whether enhanced networking with ENA is enabled.

Type: Boolean

Required: No

**freeTierEligible**

Indicates whether the image is eligible for AWS Free Tier.

- If `true`, the AMI is eligible for Free Tier and can be used to launch instances under the Free Tier limits.
- If `false`, the AMI is not eligible for Free Tier.

Type: Boolean

Required: No

**hypervisor**

The hypervisor type of the image. Only `xen` is supported. `ovm` is not supported.

Type: String

Valid Values: `ovm | xen`

Required: No

**imageAllowed**

If `true`, the AMI satisfies the criteria for Allowed AMIs and can be discovered and used in the account. If `false` and Allowed AMIs is set to `enabled`, the AMI can't be discovered or used in the account. If `false` and Allowed AMIs is set to `audit-mode`, the AMI can be discovered and used in the account.

For more information, see Control the discovery and use of AMIs in Amazon EC2 with Allowed AMIs in *Amazon EC2 User Guide*.

Type: Boolean

Required: No

**imageId**

The ID of the AMI.

Type: String

Required: No

**imageLocation**

The location of the AMI.

Type: String

Required: No

**imageOwnerAlias**

The owner alias (`amazon | aws-backup-vault | aws-marketplace`).

Type: String

Required: No

**imageOwnerId**

The ID of the AWS account that owns the image.

Type: String

Required: No

**imageState**

The current state of the AMI. If the state is `available`, the image is successfully registered and can be used to launch an instance.

Type: String

Valid Values: `pending | available | invalid | deregistered | transient | failed | error | disabled`

Required: No

**imageType**

The type of image.

Type: String

Valid Values: `machine | kernel | ramdisk`

Required: No

**ImageWatermarkSet.N**

The watermarks attached to the AMI.

Type: Array of ImageWatermark objects

Required: No

**imdsSupport**

If `v2.0`, it indicates that IMDSv2 is specified in the AMI. Instances launched from this AMI will have `HttpTokens` automatically set to `required` so that, by default, the instance requires that IMDSv2 is used when requesting instance metadata. In addition, `HttpPutResponseHopLimit` is set to 2. For more information, see Configure the AMI in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `v2.0`

Required: No

**isPublic**

Indicates whether the image has public launch permissions. The value is `true` if this image has public launch permissions or `false` if it has only implicit and explicit launch permissions.

Type: Boolean

Required: No

**kernelId**

The kernel associated with the image, if any. Only applicable for machine images.

Type: String

Required: No

**lastLaunchedTime**

The date and time, in ISO 8601 date-time format, when the AMI was last used to launch an EC2 instance. When the AMI is used to launch an instance, there is a 24-hour delay before that usage is reported.

> **Note**
>
> `lastLaunchedTime` data is available starting April 2017.

Type: String

Required: No

**name**

The name of the AMI that was provided during image creation.

Type: String

Required: No

**platform**

This value is set to `windows` for Windows AMIs; otherwise, it is blank.

Type: String

Valid Values: `Windows`

Required: No

**platformDetails**

The platform details associated with the billing code of the AMI. For more information, see Understand AMI billing information in the *Amazon EC2 User Guide*.

Type: String

Required: No

**ProductCodes.N**

Any product codes associated with the AMI.

Type: Array of ProductCode objects

Required: No

**ramdiskId**

The RAM disk associated with the image, if any. Only applicable for machine images.

Type: String

Required: No

**rootDeviceName**

The device name of the root device volume (for example, `/dev/sda1`).

Type: String

Required: No

**rootDeviceType**

The type of root device used by the AMI. The AMI can use an Amazon EBS volume or an instance store volume.

Type: String

Valid Values: `ebs | instance-store`

Required: No

**sourceImageId**

The ID of the source AMI from which the AMI was created.

The ID only appears if the AMI was created using CreateImage, CopyImage, or CreateRestoreImageTask. The ID does not appear if the AMI was created using any other API. For some older AMIs, the ID might not be available. For more information, see Identify the source AMI used to create a new Amazon EC2 AMI in the *Amazon EC2 User Guide*.

Type: String

Required: No

**sourceImageRegion**

The Region of the source AMI.

The Region only appears if the AMI was created using CreateImage, CopyImage, or CreateRestoreImageTask. The Region does not appear if the AMI was created using any other API. For some older AMIs, the Region might not be available. For more information, see Identify the source AMI used to create a new Amazon EC2 AMI in the *Amazon EC2 User Guide*.

Type: String

Required: No

**sourceInstanceId**

The ID of the instance that the AMI was created from if the AMI was created using CreateImage. This field only appears if the AMI was created using CreateImage.

Type: String

Required: No

**sriovNetSupport**

Specifies whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.

Type: String

Required: No

**stateReason**

The reason for the state change.

Type: StateReason object

Required: No

**TagSet.N**

Any tags assigned to the image.

Type: Array of Tag objects

Required: No

**tpmSupport**

If the image is configured for NitroTPM support, the value is `v2.0`. For more information, see NitroTPM in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `v2.0`

Required: No

**usageOperation**

The operation of the Amazon EC2 instance and the billing code that is associated with the AMI. `usageOperation` corresponds to the lineitem/Operation column on your AWS Cost and Usage Report and in the AWS Price List API. You can view these fields on the **Instances** or **AMIs** pages in the Amazon EC2 console, or in the responses that are returned by the DescribeImages command in the Amazon EC2 API, or the describe-images command in the AWS CLI.

Type: String

Required: No

**virtualizationType**

The type of virtualization of the AMI.

Type: String

Valid Values: `hvm | paravirtual`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageAncestryEntry

Information about a single AMI in the ancestry chain and its source (parent) AMI.

## Contents

**creationDate**

The date and time when this AMI was created.

Type: Timestamp

Required: No

**imageId**

The ID of this AMI.

Type: String

Required: No

**imageOwnerAlias**

The owner alias (`amazon` | `aws-backup-vault` | `aws-marketplace` ) of this AMI, if one is assigned. Otherwise, the value is `null`.

Type: String

Required: No

**sourceImageId**

The ID of the parent AMI.

Type: String

Required: No

**sourceImageRegion**

The AWS Region of the parent AMI.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageCriterion

The criteria that are evaluated to determine which AMIs are discoverable and usable in your account for the specified AWS Region.

For more information, see How Allowed AMIs works in the *Amazon EC2 User Guide*.

## Contents

**creationDateCondition**

The maximum age for allowed images.

Type: CreationDateCondition object

Required: No

**deprecationTimeCondition**

The maximum period since deprecation for allowed images.

Type: DeprecationTimeCondition object

Required: No

**ImageNameSet.N**

The names of allowed images. Names can include wildcards (? and *).

Length: 1–128 characters. With ?, the minimum is 3 characters.

Valid characters:

- Letters: `A-Z, a-z`
- Numbers: `0-9`
- Special characters: `( ) [ ] . / - ' @ _ * ?`
- Spaces

Maximum: 50 values

Type: Array of strings

Required: No

**ImageProviderSet.N**

The image providers whose images are allowed.

Possible values:

- `amazon`: Allow AMIs created by Amazon or verified providers.
- `aws-marketplace`: Allow AMIs created by verified providers in the AWS Marketplace.
- `aws-backup-vault`: Allow AMIs created by AWS Backup.
- 12-digit account ID: Allow AMIs created by this account. One or more account IDs can be specified.
- none: Allow AMIs created by your own account only.

Maximum: 200 values

Type: Array of strings

Required: No

**MarketplaceProductCodeSet.N**

The AWS Marketplace product codes for allowed images.

Length: 1-25 characters

Valid characters: Letters (`A-Z, a-z`) and numbers (`0-9`)

Maximum: 50 values

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageCriterionRequest

The criteria that are evaluated to determine which AMIs are discoverable and usable in your account for the specified AWS Region.

The `ImageCriteria` can include up to:

- 10 `ImageCriterion`

Each `ImageCriterion` can include up to:

- 200 values for `ImageProviders`
- 50 values for `ImageNames`
- 50 values for `MarketplaceProductCodes`

For more information, see How Allowed AMIs works in the *Amazon EC2 User Guide*.

## Contents

**CreationDateCondition**

The maximum age for allowed images.

Type: CreationDateConditionRequest object

Required: No

**DeprecationTimeCondition**

The maximum period since deprecation for allowed images.

Type: DeprecationTimeConditionRequest object

Required: No

**ImageName.N**

The names of allowed images. Names can include wildcards (? and *).

Length: 1–128 characters. With ?, the minimum is 3 characters.

Valid characters:

- Letters: A–Z, a–z
- Numbers: 0–9
- Special characters: ( ) [ ] . / - ' @ _ * ?
- Spaces

Maximum: 50 values

Type: Array of strings

Required: No

**ImageProvider.N**

The image providers whose images are allowed.

Possible values:

- amazon: Allow AMIs created by Amazon or verified providers.
- aws-marketplace: Allow AMIs created by verified providers in the AWS Marketplace.
- aws-backup-vault: Allow AMIs created by AWS Backup.
- 12-digit account ID: Allow AMIs created by the specified accounts. One or more account IDs can be specified.
- none: Allow AMIs created by your own account only. When none is specified, no other values can be specified.

Maximum: 200 values

Type: Array of strings

Required: No

**MarketplaceProductCode.N**

The AWS Marketplace product codes for allowed images.

Length: 1-25 characters

Valid characters: Letters (A–Z, a–z) and numbers (0–9)

Maximum: 50 values

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageDiskContainer

Describes the disk container object for an import image task.

## Contents

**Description**

The description of the disk image.

Type: String

Required: No

**DeviceName**

The block device mapping for the disk.

Type: String

Required: No

**Format**

The format of the disk image being imported.

Valid values: `OVA` | `VHD` | `VHDX` | `VMDK` | `RAW`

Type: String

Required: No

**SnapshotId**

The ID of the EBS snapshot to be used for importing the snapshot.

Type: String

Required: No

**Url**

The URL to the Amazon S3-based disk image being imported. The URL can either be a https URL (https://..) or an Amazon S3 URL (s3://..)

Type: String

Required: No

**UserBucket**

The S3 bucket for the disk image.

Type: UserBucket object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageMetadata

Information about the AMI.

## Contents

**creationDate**

The date and time the AMI was created.

Type: String

Required: No

**deprecationTime**

The deprecation date and time of the AMI, in UTC, in the following format: *YYYY-MM-DD*T*HH*:*MM*:*SS*Z.

Type: String

Required: No

**imageAllowed**

If `true`, the AMI satisfies the criteria for Allowed AMIs and can be discovered and used in the account. If `false`, the AMI can't be discovered or used in the account.

For more information, see Control the discovery and use of AMIs in Amazon EC2 with Allowed AMIs in *Amazon EC2 User Guide*.

Type: Boolean

Required: No

**imageId**

The ID of the AMI.

Type: String

Required: No

**imageOwnerAlias**

The alias of the AMI owner.

Valid values: `amazon` | `aws-backup-vault` | `aws-marketplace`

Type: String

Required: No

**imageOwnerId**

The ID of the AWS account that owns the AMI.

Type: String

Required: No

**imageState**

The current state of the AMI. If the state is `available`, the AMI is successfully registered and can be used to launch an instance.

Type: String

Valid Values: `pending | available | invalid | deregistered | transient | failed | error | disabled`

Required: No

**ImageWatermarkSet.N**

The watermarks attached to the AMI.

Type: Array of ImageWatermark objects

Required: No

**isPublic**

Indicates whether the AMI has public launch permissions. A value of `true` means this AMI has public launch permissions, while `false` means it has only implicit (AMI owner) or explicit (shared with your account) launch permissions.

Type: Boolean

Required: No

**name**

The name of the AMI.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageRecycleBinInfo

Information about an AMI that is currently in the Recycle Bin.

## Contents

**description**

The description of the AMI.

Type: String

Required: No

**imageId**

The ID of the AMI.

Type: String

Required: No

**name**

The name of the AMI.

Type: String

Required: No

**recycleBinEnterTime**

The date and time when the AMI entered the Recycle Bin.

Type: Timestamp

Required: No

**recycleBinExitTime**

The date and time when the AMI is to be permanently deleted from the Recycle Bin.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageReference

A resource that is referencing an image.

## Contents

**arn**

The Amazon Resource Name (ARN) of the resource referencing the image.

Type: String

Required: No

**imageId**

The ID of the referenced image.

Type: String

Required: No

**resourceType**

The type of resource referencing the image.

Type: String

Valid Values: `ec2:Instance | ec2:LaunchTemplate | ssm:Parameter | imagebuilder:ImageRecipe | imagebuilder:ContainerRecipe`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageUsageReport

The configuration and status of an image usage report.

## Contents

**AccountIdSet.N**

The IDs of the AWS accounts that were specified when the report was created.

Type: Array of strings

Required: No

**creationTime**

The date and time when the report was created.

Type: Timestamp

Required: No

**expirationTime**

The date and time when Amazon EC2 will delete the report (30 days after the report was created).

Type: Timestamp

Required: No

**imageId**

The ID of the image that was specified when the report was created.

Type: String

Required: No

**reportId**

The ID of the report.

Type: String

Required: No

**ResourceTypeSet.N**

The resource types that were specified when the report was created.

Type: Array of ImageUsageResourceType objects

Required: No

**state**

The current state of the report. Possible values:

- `available` - The report is available to view.
- `pending` - The report is being created and not available to view.
- `error` - The report could not be created.

Type: String

Required: No

**stateReason**

Provides additional details when the report is in an `error` state.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the report.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# ImageUsageReportEntry

A single entry in an image usage report, detailing how an image is being used by a specific AWS account and resource type.

## Contents

**accountId**

The ID of the account that uses the image.

Type: String

Required: No

**imageId**

The ID of the image.

Type: String

Required: No

**reportCreationTime**

The date and time the report creation was initiated.

Type: Timestamp

Required: No

**reportId**

The ID of the report.

Type: String

Required: No

**resourceType**

The type of resource (`ec2:Instance` or `ec2:LaunchTemplate`).

Type: String

Required: No

**usageCount**

The number of times resources of this type reference this image in the account.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageUsageResourceType

A resource type to include in the report. Associated options can also be specified if the resource type is a launch template.

## Contents

**resourceType**

The resource type.

Valid values: `ec2:Instance` | `ec2:LaunchTemplate`

Type: String

Required: No

**ResourceTypeOptionSet.N**

The options that affect the scope of the report. Valid only when `ResourceType` is `ec2:LaunchTemplate`.

Type: Array of ImageUsageResourceTypeOption objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageUsageResourceTypeOption

The options that affect the scope of the report.

## Contents

**optionName**

The name of the option.

Type: String

Required: No

**OptionValueSet.N**

The number of launch template versions to check.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageUsageResourceTypeOptionRequest

The options that affect the scope of the report.

## Contents

**OptionName**

The name of the option.

Valid value: `version-depth` - The number of launch template versions to check.

Type: String

Required: No

**OptionValue.N**

A value for the specified option.

Valid values: Integers between 1 and `10000`

Default: `20`

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageUsageResourceTypeRequest

A resource type to include in the report. Associated options can also be specified if the resource type is a launch template.

## Contents

**ResourceType**

The resource type.

Valid values: `ec2:Instance` | `ec2:LaunchTemplate`

Type: String

Required: No

**ResourceTypeOption.N**

The options that affect the scope of the report. Valid only when `ResourceType` is `ec2:LaunchTemplate`.

Type: Array of ImageUsageResourceTypeOptionRequest objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImageWatermark

Describes a watermark attached to an AMI.

## Contents

**sourceImageCreationTime**

The creation date of the source AMI, in the following format: *YYYY-MM-DD*T*HH*:*MM*:*SS*.*ssssss*+*HH*:*MM*.

Type: Timestamp

Required: No

**sourceImageId**

The ID of the AMI to which the watermark was originally attached.

Type: String

Required: No

**sourceImageRegion**

The Region where the watermark was originally attached.

Type: String

Required: No

**watermarkCreationTime**

The date and time the watermark was attached to the AMI, in the following format: *YYYY-MM-DD*T*HH*:*MM*:*SS*.*ssssss*+*HH*:*MM*.

Type: Timestamp

Required: No

**watermarkKey**

The watermark identifier, in `accountId:watermarkName` format (for example, `123456789012:approvedAmi`). The `accountId` portion is the AWS account ID of the watermark creator. The `watermarkName` portion is customer-provided.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImportImageLicenseConfigurationRequest

The request information of license configurations.

## Contents

**LicenseConfigurationArn**

The ARN of a license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImportImageLicenseConfigurationResponse

The response information for license configurations.

## Contents

**licenseConfigurationArn**

The ARN of a license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImportImageTask

Describes an import image task.

## Contents

**architecture**

The architecture of the virtual machine.

Valid values: `i386` | `x86_64` | `arm64`

Type: String

Required: No

**bootMode**

The boot mode of the virtual machine.

Type: String

Valid Values: `legacy-bios | uefi | uefi-preferred`

Required: No

**description**

A description of the import task.

Type: String

Required: No

**encrypted**

Indicates whether the image is encrypted.

Type: Boolean

Required: No

**hypervisor**

The target hypervisor for the import task.

Valid values: xen

Type: String

Required: No

**imageId**

The ID of the Amazon Machine Image (AMI) of the imported virtual machine.

Type: String

Required: No

**importTaskId**

The ID of the import image task.

Type: String

Required: No

**kmsKeyId**

The identifier for the KMS key that was used to create the encrypted image.

Type: String

Required: No

**LicenseSpecifications.N**

The ARNs of the license configurations that are associated with the import image task.

Type: Array of ImportImageLicenseConfigurationResponse objects

Required: No

**licenseType**

The license type of the virtual machine.

Type: String

Required: No

**platform**

The description string for the import image task.

Type: String

Required: No

**progress**

The percentage of progress of the import image task.

Type: String

Required: No

**SnapshotDetailSet.N**

Information about the snapshots.

Type: Array of SnapshotDetail objects

Required: No

**status**

A brief status for the import image task.

Type: String

Required: No

**statusMessage**

A descriptive status message for the import image task.

Type: String

Required: No

**TagSet.N**

The tags for the import image task.

Type: Array of Tag objects

Required: No

**usageOperation**

The usage operation value.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImportInstanceLaunchSpecification

Describes the launch specification for VM import.

## Contents

**AdditionalInfo**

Reserved.

Type: String

Required: No

**Architecture**

The architecture of the instance.

Type: String

Valid Values: `i386 | x86_64 | arm64 | x86_64_mac | arm64_mac`

Required: No

**GroupId.N**

The security group IDs.

Type: Array of strings

Required: No

**GroupName.N**

The security group names.

Type: Array of strings

Required: No

**InstanceInitiatedShutdownBehavior**

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: String

Valid Values: `stop | terminate`

Required: No

**InstanceType**

The instance type. For more information about the instance types that you can import, see Instance Types in the VM Import/Export User Guide.

Type: String

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge |

g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large

| r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge

| c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge

| c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge |

g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-

`flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge`

Required: No

**Monitoring**

Indicates whether monitoring is enabled.

Type: Boolean

Required: No

**Placement**

The placement information for the instance.

Type: Placement object

Required: No

**PrivateIpAddress**

[EC2-VPC] An available IP address from the IP address range of the subnet.

Type: String

Required: No

**SubnetId**

[EC2-VPC] The ID of the subnet in which to launch the instance.

Type: String

Required: No

**UserData**

The Base64-encoded user data to make available to the instance.

Type: UserData object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImportInstanceTaskDetails

Describes an import instance task.

## Contents

**description**

A description of the task.

Type: String

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

**platform**

The instance operating system.

Type: String

Valid Values: `Windows`

Required: No

**Volumes.N**

The volumes.

Type: Array of ImportInstanceVolumeDetailItem objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImportInstanceVolumeDetailItem

Describes an import volume task.

## Contents

**availabilityZone**

The Availability Zone where the resulting instance will reside.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone where the resulting instance will reside.

Type: String

Required: No

**bytesConverted**

The number of bytes converted so far.

Type: Long

Required: No

**description**

A description of the task.

Type: String

Required: No

**image**

The image.

Type: DiskImageDescription object

Required: No

**status**

The status of the import of this particular disk image.

Type: String

Required: No

**statusMessage**

The status information or errors related to the disk image.

Type: String

Required: No

**volume**

The volume.

Type: DiskImageVolumeDescription object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImportSnapshotTask

Describes an import snapshot task.

## Contents

**description**

A description of the import snapshot task.

Type: String

Required: No

**importTaskId**

The ID of the import snapshot task.

Type: String

Required: No

**snapshotTaskDetail**

Describes an import snapshot task.

Type: SnapshotTaskDetail object

Required: No

**TagSet.N**

The tags for the import snapshot task.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ImportVolumeTaskDetails

Describes an import volume task.

## Contents

**availabilityZone**

The Availability Zone where the resulting volume will reside.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone where the resulting volume will reside.

Type: String

Required: No

**bytesConverted**

The number of bytes converted so far.

Type: Long

Required: No

**description**

The description you provided when starting the import volume task.

Type: String

Required: No

**image**

The image.

Type: DiskImageDescription object

Required: No

**volume**

The volume.

Type: DiskImageVolumeDescription object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InferenceAcceleratorInfo

> **Note**
>
> Amazon Elastic Inference is no longer available.

Describes the Inference accelerators for the instance type.

## Contents

**Accelerators.N**

Describes the Inference accelerators for the instance type.

Type: Array of InferenceDeviceInfo objects

Required: No

**totalInferenceMemoryInMiB**

The total size of the memory for the inference accelerators for the instance type, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InferenceDeviceInfo

> **Note**
>
> Amazon Elastic Inference is no longer available.

Describes the Inference accelerators for the instance type.

## Contents

**count**

The number of Inference accelerators for the instance type.

Type: Integer

Required: No

**manufacturer**

The manufacturer of the Inference accelerator.

Type: String

Required: No

**memoryInfo**

Describes the memory available to the inference accelerator.

Type: InferenceDeviceMemoryInfo object

Required: No

**name**

The name of the Inference accelerator.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InferenceDeviceMemoryInfo

> **Note**
>
> Amazon Elastic Inference is no longer available.

Describes the memory available to the inference accelerator.

## Contents

**sizeInMiB**

The size of the memory available to the inference accelerator, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InitializationStatusDetails

Information about the volume initialization. For more information, see Initialize Amazon EBS volumes.

## Contents

**estimatedTimeToCompleteInSeconds**

The estimated remaining time, in seconds, for volume initialization to complete. Returns `0` when volume initialization has completed.

Only available for volumes created with Amazon EBS Provisioned Rate for Volume Initialization.

Type: Long

Required: No

**initializationType**

The method used for volume initialization. Possible values include:

- `default` - Volume initialized using the default volume initialization rate or fast snapshot restore.
- `provisioned-rate` - Volume initialized using an Amazon EBS Provisioned Rate for Volume Initialization.
- `volume-copy` - Volume copy initialized at the rate for volume copies.

Type: String

Valid Values: `default | provisioned-rate | volume-copy`

Required: No

**progress**

The current volume initialization progress as a percentage (0-100). Returns `100` when volume initialization has completed.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Instance

Describes an instance.

## Contents

**amiLaunchIndex**

The AMI launch index, which can be used to find this instance in the launch group.

Type: Integer

Required: No

**architecture**

The architecture of the image.

Type: String

Valid Values: `i386 | x86_64 | arm64 | x86_64_mac | arm64_mac`

Required: No

**BlockDeviceMapping.N**

Any block device mapping entries for the instance.

Type: Array of InstanceBlockDeviceMapping objects

Required: No

**bootMode**

The boot mode that was specified by the AMI. If the value is `uefi-preferred`, the AMI supports both UEFI and Legacy BIOS. The `currentInstanceBootMode` parameter is the boot mode that is used to boot the instance at launch or start.

> **Note**
>
> The operating system contained in the AMI must be configured to support the specified boot mode.

For more information, see Boot modes in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `legacy-bios | uefi | uefi-preferred`

Required: No

**capacityBlockId**

The ID of the Capacity Block.

> **Note**
>
> For P5 instances, a Capacity Block ID refers to a group of instances. For Trn2u instances, a capacity block ID refers to an EC2 UltraServer.

Type: String

Required: No

**capacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: No

**capacityReservationSpecification**

Information about the Capacity Reservation targeting option.

Type: CapacityReservationSpecificationResponse object

Required: No

**clientToken**

The idempotency token you provided when you launched the instance, if applicable.

Type: String

Required: No

**cpuOptions**

The CPU options for the instance.

Type: CpuOptions object

Required: No

**currentInstanceBootMode**

The boot mode that is used to boot the instance at launch or start. For more information, see Boot modes in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `legacy-bios | uefi`

Required: No

**dnsName**

The public DNS name assigned to the instance. This name is not available until the instance enters the `running` state. This name is only available if you've enabled DNS hostnames for your VPC. The format of this name depends on the public hostname type.

Type: String

Required: No

**ebsOptimized**

Indicates whether the instance is optimized for Amazon EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Required: No

**ElasticGpuAssociationSet.N**

Deprecated.

> **Note**
>
> Amazon Elastic Graphics reached end of life on January 8, 2024.

Type: Array of ElasticGpuAssociation objects

Required: No

**ElasticInferenceAcceleratorAssociationSet.N**

Deprecated

> **Note**
>
> Amazon Elastic Inference is no longer available.

Type: Array of ElasticInferenceAcceleratorAssociation objects

Required: No

**enaSupport**

Specifies whether enhanced networking with ENA is enabled.

Type: Boolean

Required: No

**enclaveOptions**

Indicates whether the instance is enabled for AWS Nitro Enclaves.

Type: EnclaveOptions object

Required: No

**GroupSet.N**

The security groups for the instance.

Type: Array of GroupIdentifier objects

Required: No

**hibernationOptions**

Indicates whether the instance is enabled for hibernation.

Type: HibernationOptions object

Required: No

**hypervisor**

The hypervisor type of the instance. The value `xen` is used for both Xen and Nitro hypervisors.

Type: String

Valid Values: `ovm | xen`

Required: No

**iamInstanceProfile**

The IAM instance profile associated with the instance, if applicable.

Type: IamInstanceProfile object

Required: No

**imageId**

The ID of the AMI used to launch the instance.

Type: String

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

**instanceLifecycle**

Indicates whether this is a Spot Instance or a Scheduled Instance.

Type: String

Valid Values: `spot | scheduled | capacity-block | interruptible-capacity-reservation`

Required: No

**instanceState**

The current state of the instance.

Type: InstanceState object

Required: No

**instanceType**

The instance type.

Type: String

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge |

g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large

| r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge

| c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge

| c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge |

g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-

flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge

Required: No

**ipAddress**

The public IPv4 address, or the Carrier IP address assigned to the instance, if applicable.

A Carrier IP address only applies to an instance launched in a subnet associated with a Wavelength Zone.

Type: String

Required: No

**ipv6Address**

The IPv6 address assigned to the instance.

Type: String

Required: No

**kernelId**

The kernel associated with this instance, if applicable.

Type: String

Required: No

**keyName**

The name of the key pair, if this instance was launched with an associated key pair.

Type: String

Required: No

**launchTime**

The time that the instance was last launched. To determine the time that instance was first launched, see the attachment time for the primary network interface.

Type: Timestamp

Required: No

**LicenseSet.N**

The license configurations for the instance.

Type: Array of LicenseConfiguration objects

Required: No

**maintenanceOptions**

Provides information on the recovery and maintenance options of your instance.

Type: InstanceMaintenanceOptions object

Required: No

**metadataOptions**

The metadata options for the instance.

Type: InstanceMetadataOptionsResponse object

Required: No

**monitoring**

The monitoring for the instance.

Type: Monitoring object

Required: No

**NetworkInterfaceSet.N**

The network interfaces for the instance.

Type: Array of InstanceNetworkInterface objects

Required: No

**networkPerformanceOptions**

Contains settings for the network performance options for your instance.

Type: InstanceNetworkPerformanceOptions object

Required: No

**operator**

The service provider that manages the instance.

Type: OperatorResponse object

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**placement**

The location where the instance launched, if applicable.

Type: Placement object

Required: No

**platform**

The platform. This value is `windows` for Windows instances; otherwise, it is empty.

Type: String

Valid Values: `windows`

Required: No

**platformDetails**

The platform details value for the instance. For more information, see AMI billing information fields in the *Amazon EC2 User Guide*.

Type: String

Required: No

**privateDnsName**

[IPv4 only] The private DNS hostname name assigned to the instance. This DNS hostname can only be used inside the Amazon EC2 network. This name is not available until the instance enters the `running` state.

The Amazon-provided DNS server resolves Amazon-provided private DNS hostnames if you've enabled DNS resolution and DNS hostnames in your VPC. If you are not using the Amazon-provided DNS server in your VPC, your custom domain name servers must resolve the hostname as appropriate.

Type: String

Required: No

**privateDnsNameOptions**

The options for the instance hostname.

Type: PrivateDnsNameOptionsResponse object

Required: No

**privateIpAddress**

The private IPv4 address assigned to the instance.

Type: String

Required: No

**ProductCodes.N**

The product codes attached to this instance, if applicable.

Type: Array of ProductCode objects

Required: No

**ramdiskId**

The RAM disk associated with this instance, if applicable.

Type: String

Required: No

**reason**

The reason for the most recent state transition. This might be an empty string.

Type: String

Required: No

**rootDeviceName**

The device name of the root device volume (for example, `/dev/sda1`).

Type: String

Required: No

**rootDeviceType**

The root device type used by the AMI. The AMI can use an EBS volume or an instance store volume.

Type: String

Valid Values: `ebs | instance-store`

Required: No

**SecondaryInterfaceSet.N**

The secondary interfaces for the instance.

Type: Array of InstanceSecondaryInterface objects

Required: No

**sourceDestCheck**

Indicates whether source/destination checking is enabled.

Type: Boolean

Required: No

**spotInstanceRequestId**

If the request is a Spot Instance request, the ID of the request.

Type: String

Required: No

**sriovNetSupport**

Specifies whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.

Type: String

Required: No

**stateReason**

The reason for the most recent state transition.

Type: StateReason object

Required: No

**subnetId**

The ID of the subnet in which the instance is running.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the instance.

Type: Array of Tag objects

Required: No

**tpmSupport**

If the instance is configured for NitroTPM support, the value is `v2.0`. For more information, see NitroTPM in the *Amazon EC2 User Guide*.

Type: String

Required: No

**usageOperation**

The usage operation value for the instance. For more information, see AMI billing information fields in the *Amazon EC2 User Guide*.

Type: String

Required: No

**usageOperationUpdateTime**

The time that the usage operation was last updated.

Type: Timestamp

Required: No

**virtualizationType**

The virtualization type of the instance.

Type: String

Valid Values: `hvm | paravirtual`

Required: No

**vpcId**

The ID of the VPC in which the instance is running.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceAttachmentEnaSrdSpecification

ENA Express uses AWS Scalable Reliable Datagram (SRD) technology to increase the maximum bandwidth used per stream and minimize tail latency of network traffic between EC2 instances. With ENA Express, you can communicate between two EC2 instances in the same subnet within the same account, or in different accounts. Both sending and receiving instances must have ENA Express enabled.

To improve the reliability of network packet delivery, ENA Express reorders network packets on the receiving end by default. However, some UDP-based applications are designed to handle network packets that are out of order to reduce the overhead for packet delivery at the network layer. When ENA Express is enabled, you can specify whether UDP network traffic uses it.

## Contents

**enaSrdEnabled**

Indicates whether ENA Express is enabled for the network interface.

Type: Boolean

Required: No

**enaSrdUdpSpecification**

Configures ENA Express for UDP network traffic.

Type: InstanceAttachmentEnaSrdUdpSpecification object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceAttachmentEnaSrdUdpSpecification

ENA Express is compatible with both TCP and UDP transport protocols. When it's enabled, TCP traffic automatically uses it. However, some UDP-based applications are designed to handle network packets that are out of order, without a need for retransmission, such as live video broadcasting or other near-real-time applications. For UDP traffic, you can specify whether to use ENA Express, based on your application environment needs.

## Contents

**enaSrdUdpEnabled**

Indicates whether UDP traffic to and from the instance uses ENA Express. To specify this setting, you must first enable ENA Express.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceBlockDeviceMapping

Describes a block device mapping.

## Contents

**deviceName**

The device name.

Type: String

Required: No

**ebs**

Parameters used to automatically set up EBS volumes when the instance is launched.

Type: EbsInstanceBlockDevice object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceBlockDeviceMappingSpecification

Describes a block device mapping entry.

## Contents

**DeviceName**

The device name. For available device names, see Device names for volumes.

Type: String

Required: No

**Ebs**

Parameters used to automatically set up EBS volumes when the instance is launched.

Type: EbsInstanceBlockDeviceSpecification object

Required: No

**NoDevice**

Suppresses the specified device included in the block device mapping.

Type: String

Required: No

**VirtualName**

The virtual device name.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceCapacity

Information about the number of instances that can be launched onto the Dedicated Host.

## Contents

**availableCapacity**

The number of instances that can be launched onto the Dedicated Host based on the host's available capacity.

Type: Integer

Required: No

**instanceType**

The instance type supported by the Dedicated Host.

Type: String

Required: No

**totalCapacity**

The total number of instances that can be launched onto the Dedicated Host if there are no instances running on it.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceConnectEndpointDnsNames

The DNS names of the endpoint.

## Contents

**dnsName**

The DNS name of the EC2 Instance Connect Endpoint.

Type: String

Required: No

**fipsDnsName**

The Federal Information Processing Standards (FIPS) compliant DNS name of the EC2 Instance Connect Endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceConnectEndpointPublicDnsNames

The public DNS names of the endpoint, including IPv4-only and dualstack DNS names.

## Contents

**dualstack**

The dualstack DNS name of the EC2 Instance Connect Endpoint. A dualstack DNS name supports connections from both IPv4 and IPv6 clients.

Type: InstanceConnectEndpointDnsNames object

Required: No

**ipv4**

The IPv4-only DNS name of the EC2 Instance Connect Endpoint.

Type: InstanceConnectEndpointDnsNames object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceCount

Describes a Reserved Instance listing state.

## Contents

**instanceCount**

The number of listed Reserved Instances in the state specified by the `state`.

Type: Integer

Required: No

**state**

The states of the listed Reserved Instances.

Type: String

Valid Values: `available | sold | cancelled | pending`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceCreditSpecification

Describes the credit option for CPU usage of a burstable performance instance.

## Contents

**cpuCredits**

The credit option for CPU usage of the instance.

Valid values: `standard` | `unlimited`

Type: String

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceCreditSpecificationRequest

Describes the credit option for CPU usage of a burstable performance instance.

## Contents

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**CpuCredits**

The credit option for CPU usage of the instance.

Valid values: `standard` | `unlimited`

T3 instances with `host` tenancy do not support the `unlimited` CPU credit option.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceEventWindow

The event window.

## Contents

**associationTarget**

One or more targets associated with the event window.

Type: InstanceEventWindowAssociationTarget object

Required: No

**cronExpression**

The cron expression defined for the event window.

Type: String

Required: No

**instanceEventWindowId**

The ID of the event window.

Type: String

Required: No

**name**

The name of the event window.

Type: String

Required: No

**state**

The current state of the event window.

Type: String

Valid Values: `creating | deleting | active | deleted`

Required: No

**TagSet.N**

The instance tags associated with the event window.

Type: Array of Tag objects

Required: No

**TimeRangeSet.N**

One or more time ranges defined for the event window.

Type: Array of InstanceEventWindowTimeRange objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceEventWindowAssociationRequest

One or more targets associated with the specified event window. Only one *type* of target (instance ID, instance tag, or Dedicated Host ID) can be associated with an event window.

## Contents

**DedicatedHostId.N**

The IDs of the Dedicated Hosts to associate with the event window.

Type: Array of strings

Required: No

**InstanceId.N**

The IDs of the instances to associate with the event window. If the instance is on a Dedicated Host, you can't specify the Instance ID parameter; you must use the Dedicated Host ID parameter.

Type: Array of strings

Required: No

**InstanceTag.N**

The instance tags to associate with the event window. Any instances associated with the tags will be associated with the event window.

Note that while you can't create tag keys beginning with `aws:`, you can specify existing AWS managed tag keys (with the `aws:` prefix) when specifying them as targets to associate with the event window.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceEventWindowAssociationTarget

One or more targets associated with the event window.

## Contents

**DedicatedHostIdSet.N**

The IDs of the Dedicated Hosts associated with the event window.

Type: Array of strings

Required: No

**InstanceIdSet.N**

The IDs of the instances associated with the event window.

Type: Array of strings

Required: No

**TagSet.N**

The instance tags associated with the event window. Any instances associated with the tags will be associated with the event window.

Note that while you can't create tag keys beginning with `aws:`, you can specify existing AWS managed tag keys (with the `aws:` prefix) when specifying them as targets to associate with the event window.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# InstanceEventWindowDisassociationRequest

The targets to disassociate from the specified event window.

## Contents

**DedicatedHostId.N**

The IDs of the Dedicated Hosts to disassociate from the event window.

Type: Array of strings

Required: No

**InstanceId.N**

The IDs of the instances to disassociate from the event window.

Type: Array of strings

Required: No

**InstanceTag.N**

The instance tags to disassociate from the event window. Any instances associated with the tags will be disassociated from the event window.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceEventWindowStateChange

The state of the event window.

## Contents

**instanceEventWindowId**

The ID of the event window.

Type: String

Required: No

**state**

The current state of the event window.

Type: String

Valid Values: `creating | deleting | active | deleted`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceEventWindowTimeRange

The start day and time and the end day and time of the time range, in UTC.

## Contents

**endHour**

The hour when the time range ends.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 23.

Required: No

**endWeekDay**

The day on which the time range ends.

Type: String

Valid Values: `sunday | monday | tuesday | wednesday | thursday | friday | saturday`

Required: No

**startHour**

The hour when the time range begins.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 23.

Required: No

**startWeekDay**

The day on which the time range begins.

Type: String

Valid Values: `sunday | monday | tuesday | wednesday | thursday | friday | saturday`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceEventWindowTimeRangeRequest

The start day and time and the end day and time of the time range, in UTC.

## Contents

**EndHour**

The hour when the time range ends.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 23.

Required: No

**EndWeekDay**

The day on which the time range ends.

Type: String

Valid Values: `sunday | monday | tuesday | wednesday | thursday | friday | saturday`

Required: No

**StartHour**

The hour when the time range begins.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 23.

Required: No

**StartWeekDay**

The day on which the time range begins.

Type: String

Valid Values: `sunday | monday | tuesday | wednesday | thursday | friday | saturday`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceExportDetails

Describes an instance to export.

## Contents

**instanceId**

The ID of the resource being exported.

Type: String

Required: No

**targetEnvironment**

The target virtualization environment.

Type: String

Valid Values: `citrix | vmware | microsoft`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceFamilyCreditSpecification

Describes the default credit option for CPU usage of a burstable performance instance family.

## Contents

**cpuCredits**

The default credit option for CPU usage of the instance family. Valid values are `standard` and `unlimited`.

Type: String

Required: No

**instanceFamily**

The instance family.

Type: String

Valid Values: `t2 | t3 | t3a | t4g`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceImageMetadata

Information about the instance and the AMI used to launch the instance.

## Contents

**availabilityZone**

The Availability Zone or Local Zone of the instance.

Type: String

Required: No

**imageMetadata**

Information about the AMI used to launch the instance.

Type: ImageMetadata object

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

**instanceOwnerId**

The ID of the AWS account that owns the instance.

Type: String

Required: No

**instanceState**

The current state of the instance.

Type: InstanceState object

Required: No

**instanceType**

The instance type.

Type: String

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge |

g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge

| r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge |

c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge |

p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge

| g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge

Required: No

**launchTime**

The time the instance was launched.

Type: Timestamp

Required: No

**operator**

The entity that manages the instance.

Type: OperatorResponse object

Required: No

**TagSet.N**

Any tags assigned to the instance.

Type: Array of Tag objects

Required: No

**zoneId**

The ID of the Availability Zone or Local Zone of the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceIpv4Prefix

Information about an IPv4 prefix.

## Contents

**ipv4Prefix**

One or more IPv4 prefixes assigned to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceIpv6Address

Describes an IPv6 address.

## Contents

**Ipv6Address** (request), **ipv6Address** (response)

The IPv6 address.

Type: String

Required: No

**IsPrimaryIpv6** (request), **isPrimaryIpv6** (response)

Determines if an IPv6 address associated with a network interface is the primary IPv6 address. When you enable an IPv6 GUA address to be a primary IPv6, the first IPv6 GUA will be made the primary IPv6 address until the instance is terminated or the network interface is detached. For more information, see RunInstances.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceIpv6AddressRequest

Describes an IPv6 address.

## Contents

### Ipv6Address

The IPv6 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceIpv6Prefix

Information about an IPv6 prefix.

## Contents

### ipv6Prefix

One or more IPv6 prefixes assigned to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceMaintenanceOptions

The maintenance options for the instance.

## Contents

**autoRecovery**

Provides information on the current automatic recovery behavior of your instance.

Type: String

Valid Values: `disabled | default`

Required: No

**rebootMigration**

Specifies whether to attempt reboot migration during a user-initiated reboot of an instance that has a scheduled `system-reboot` event:

- `default` - Amazon EC2 attempts to migrate the instance to new hardware (reboot migration). If successful, the `system-reboot` event is cleared. If unsuccessful, an in-place reboot occurs and the event remains scheduled.
- `disabled` - Amazon EC2 keeps the instance on the same hardware (in-place reboot). The `system-reboot` event remains scheduled.

This setting only applies to supported instances that have a scheduled reboot event. For more information, see Enable or disable reboot migration in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `disabled | default`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceMaintenanceOptionsRequest

The maintenance options for the instance.

## Contents

**AutoRecovery**

Disables the automatic recovery behavior of your instance or sets it to default. For more information, see Simplified automatic recovery.

Type: String

Valid Values: `disabled | default`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceMarketOptionsRequest

Describes the market (purchasing) option for the instances.

## Contents

**MarketType**

The market type.

Type: String

Valid Values: `spot | capacity-block | interruptible-capacity-reservation`

Required: No

**SpotOptions**

The options for Spot Instances.

Type: SpotMarketOptions object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceMetadataDefaultsResponse

The default instance metadata service (IMDS) settings that were set at the account level in the specified AWS
Region.

## Contents

**httpEndpoint**

Indicates whether the IMDS endpoint for an instance is enabled or disabled. When disabled, the instance metadata can't be accessed.

Type: String

Valid Values: `disabled | enabled`

Required: No

**httpPutResponseHopLimit**

The maximum number of hops that the metadata token can travel.

Type: Integer

Required: No

**httpTokens**

Indicates whether IMDSv2 is required.

- `optional` – IMDSv2 is optional, which means that you can use either IMDSv2 or IMDSv1.
- `required` – IMDSv2 is required, which means that IMDSv1 is disabled, and you must use IMDSv2.

Type: String

Valid Values: `optional | required`

Required: No

**httpTokensEnforced**

Indicates whether to enforce the requirement of IMDSv2 on an instance at the time of launch. When enforcement is enabled, the instance can't launch unless IMDSv2 (`HttpTokens`) is set to `required`.

Type: String

Valid Values: `disabled | enabled`

Required: No

**instanceMetadataTags**

Indicates whether access to instance tags from the instance metadata is enabled or disabled. For more information, see View tags for your EC2 instances using instance metadata in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `disabled | enabled`

Required: No

**managedBy**

The entity that manages the IMDS default settings. Possible values include:

- `account` - The IMDS default settings are managed by the account.
- `declarative-policy` - The IMDS default settings are managed by a declarative policy and can't be modified by the account.

Type: String

Valid Values: `account | declarative-policy`

Required: No

**managedExceptionMessage**

The customized exception message that is specified in the declarative policy.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceMetadataOptionsRequest

The metadata options for the instance.

## Contents

**HttpEndpoint**

Enables or disables the HTTP metadata endpoint on your instances.

If you specify a value of `disabled`, you cannot access your instance metadata.

Default: `enabled`

Type: String

Valid Values: `disabled | enabled`

Required: No

**HttpProtocolIpv6**

Enables or disables the IPv6 endpoint for the instance metadata service.

Default: `disabled`

Type: String

Valid Values: `disabled | enabled`

Required: No

**HttpPutResponseHopLimit**

The maximum number of hops that the metadata token can travel.

Possible values: Integers from 1 to 64

Type: Integer

Required: No

**HttpTokens**

Indicates whether IMDSv2 is required.

- `optional` - IMDSv2 is optional, which means that you can use either IMDSv2 or IMDSv1.
- `required` - IMDSv2 is required, which means that IMDSv1 is disabled, and you must use IMDSv2.

Default:

- If the value of `ImdsSupport` for the Amazon Machine Image (AMI) for your instance is `v2.0` and the account level default is set to `no-preference`, the default is `required`.
- If the value of `ImdsSupport` for the Amazon Machine Image (AMI) for your instance is `v2.0`, but the account level default is set to `V1 or V2`, the default is `optional`.

The default value can also be affected by other combinations of parameters. For more information, see Order of precedence for instance metadata options in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `optional | required`

Required: No

**InstanceMetadataTags**

Set to `enabled` to allow access to instance tags from the instance metadata. Set to `disabled` to turn off access to instance tags from the instance metadata. For more information, see View tags for your EC2 instances using instance metadata.

Default: `disabled`

Type: String

Valid Values: `disabled | enabled`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceMetadataOptionsResponse

The metadata options for the instance.

## Contents

**httpEndpoint**

Indicates whether the HTTP metadata endpoint on your instances is enabled or disabled.

If the value is `disabled`, you cannot access your instance metadata.

Type: String

Valid Values: `disabled | enabled`

Required: No

**httpProtocolIpv6**

Indicates whether the IPv6 endpoint for the instance metadata service is enabled or disabled.

Default: `disabled`

Type: String

Valid Values: `disabled | enabled`

Required: No

**httpPutResponseHopLimit**

The maximum number of hops that the metadata token can travel.

Possible values: Integers from 1 to 64

Type: Integer

Required: No

**httpTokens**

Indicates whether IMDSv2 is required.

- `optional` - IMDSv2 is optional, which means that you can use either IMDSv2 or IMDSv1.

- `required` - IMDSv2 is required, which means that IMDSv1 is disabled, and you must use IMDSv2.

Type: String

Valid Values: `optional | required`

Required: No

**instanceMetadataTags**

Indicates whether access to instance tags from the instance metadata is enabled or disabled. For more information, see View tags for your EC2 instances using instance metadata.

Type: String

Valid Values: `disabled | enabled`

Required: No

**state**

The state of the metadata option changes.

`pending` - The metadata options are being updated and the instance is not ready to process metadata traffic with the new selection.

`applied` - The metadata options have been successfully applied on the instance.

Type: String

Valid Values: `pending | applied`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# InstanceMonitoring

Describes the monitoring of an instance.

## Contents

**instanceId**

The ID of the instance.

Type: String

Required: No

**monitoring**

The monitoring for the instance.

Type: Monitoring object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceNetworkInterface

Describes a network interface.

## Contents

**association**

The association information for an Elastic IPv4 associated with the network interface.

Type: InstanceNetworkInterfaceAssociation object

Required: No

**attachment**

The network interface attachment.

Type: InstanceNetworkInterfaceAttachment object

Required: No

**connectionTrackingConfiguration**

A security group connection tracking configuration that enables you to set the timeout for connection tracking on an Elastic network interface. For more information, see Connection tracking timeouts in the *Amazon EC2 User Guide*.

Type: ConnectionTrackingSpecificationResponse object

Required: No

**description**

The description.

Type: String

Required: No

**GroupSet.N**

The security groups.

Type: Array of GroupIdentifier objects

Required: No

**interfaceType**

The type of network interface.

Valid values: `interface` | `efa` | `efa-only` | `evs` | `trunk`

Type: String

Required: No

**Ipv4PrefixSet.N**

The IPv4 delegated prefixes that are assigned to the network interface.

Type: Array of InstanceIpv4Prefix objects

Required: No

**Ipv6AddressesSet.N**

The IPv6 addresses associated with the network interface.

Type: Array of InstanceIpv6Address objects

Required: No

**Ipv6PrefixSet.N**

The IPv6 delegated prefixes that are assigned to the network interface.

Type: Array of InstanceIpv6Prefix objects

Required: No

**macAddress**

The MAC address.

Type: String

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**operator**

The service provider that manages the network interface.

Type: OperatorResponse object

Required: No

**ownerId**

The ID of the AWS account that created the network interface.

Type: String

Required: No

**privateDnsName**

The private DNS name.

Type: String

Required: No

**privateIpAddress**

The IPv4 address of the network interface within the subnet.

Type: String

Required: No

**PrivateIpAddressesSet.N**

The private IPv4 addresses associated with the network interface.

Type: Array of InstancePrivateIpAddress objects

Required: No

**sourceDestCheck**

Indicates whether source/destination checking is enabled.

Type: Boolean

Required: No

**status**

The status of the network interface.

Type: String

Valid Values: `available | associated | attaching | in-use | detaching`

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceNetworkInterfaceAssociation

Describes association information for an Elastic IP address (IPv4).

## Contents

**carrierIp**

The carrier IP address associated with the network interface.

Type: String

Required: No

**customerOwnedIp**

The customer-owned IP address associated with the network interface.

Type: String

Required: No

**ipOwnerId**

The ID of the owner of the Elastic IP address.

Type: String

Required: No

**publicDnsName**

The public DNS name.

Type: String

Required: No

**publicIp**

The public IP address or Elastic IP address bound to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceNetworkInterfaceAttachment

Describes a network interface attachment.

## Contents

**attachmentId**

The ID of the network interface attachment.

Type: String

Required: No

**attachTime**

The time stamp when the attachment initiated.

Type: Timestamp

Required: No

**deleteOnTermination**

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

**deviceIndex**

The index of the device on the instance for the network interface attachment.

Type: Integer

Required: No

**enaQueueCount**

The number of ENA queues created with the instance.

Type: Integer

Required: No

**enaSrdSpecification**

Contains the ENA Express settings for the network interface that's attached to the instance.

Type: InstanceAttachmentEnaSrdSpecification object

Required: No

**networkCardIndex**

The index of the network card.

Type: Integer

Required: No

**status**

The attachment state.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceNetworkInterfaceSpecification

Describes a network interface.

## Contents

**AssociateCarrierIpAddress** (request), **AssociateCarrierIpAddress** (response)

Indicates whether to assign a carrier IP address to the network interface.

You can only assign a carrier IP address to a network interface that is in a subnet in a Wavelength Zone. For more information about carrier IP addresses, see Carrier IP address in the *AWS Wavelength Developer Guide*.

Type: Boolean

Required: No

**AssociatePublicIpAddress** (request), **associatePublicIpAddress** (response)

Indicates whether to assign a public IPv4 address to an instance you launch in a VPC. The public IP address can only be assigned to a network interface for eth0, and can only be assigned to a new network interface, not an existing one. You cannot specify more than one network interface in the request. If launching into a default subnet, the default value is `true`.

AWS charges for all public IPv4 addresses, including public IPv4 addresses associated with running instances and Elastic IP addresses. For more information, see the *Public IPv4 Address* tab on the Amazon VPC pricing page.

Type: Boolean

Required: No

**ConnectionTrackingSpecification** (request), **ConnectionTrackingSpecification** (response)

A security group connection tracking specification that enables you to set the timeout for connection tracking on an Elastic network interface. For more information, see Connection tracking timeouts in the *Amazon EC2 User Guide*.

Type: ConnectionTrackingSpecificationRequest object

Required: No

**DeleteOnTermination** (request), **deleteOnTermination** (response)

If set to `true`, the interface is deleted when the instance is terminated. You can specify `true` only if creating a new network interface when launching an instance.

Type: Boolean

Required: No

**Description** (request), **description** (response)

The description of the network interface. Applies only if creating a network interface when launching an instance.

Type: String

Required: No

**DeviceIndex** (request), **deviceIndex** (response)

The position of the network interface in the attachment order. A primary network interface has a device index of 0.

If you specify a network interface when launching an instance, you must specify the device index.

Type: Integer

Required: No

**EnaQueueCount** (request), **EnaQueueCount** (response)

The number of ENA queues to be created with the instance.

Type: Integer

Required: No

**EnaSrdSpecification** (request), **EnaSrdSpecification** (response)

Specifies the ENA Express settings for the network interface that's attached to the instance.

Type: EnaSrdSpecificationRequest object

Required: No

**InterfaceType** (request), **InterfaceType** (response)

The type of network interface.

If you specify `efa-only`, do not assign any IP addresses to the network interface. EFA-only network interfaces do not support IP addresses.

Valid values: `interface` | `efa` | `efa-only`

Type: String

Required: No

**Ipv4Prefix.N**

The IPv4 delegated prefixes to be assigned to the network interface. You cannot use this option if you use the `Ipv4PrefixCount` option.

Type: Array of Ipv4PrefixSpecificationRequest objects

Required: No

**Ipv4PrefixCount** (request), **Ipv4PrefixCount** (response)

The number of IPv4 delegated prefixes to be automatically assigned to the network interface. You cannot use this option if you use the `Ipv4Prefix` option.

Type: Integer

Required: No

**Ipv6AddressCount** (request), **ipv6AddressCount** (response)

A number of IPv6 addresses to assign to the network interface. Amazon EC2 chooses the IPv6 addresses from the range of the subnet. You cannot specify this option and the option to assign specific IPv6 addresses in the same request. You can specify this option if you've specified a minimum number of instances to launch.

Type: Integer

Required: No

**Ipv6Addresses.N**

The IPv6 addresses to assign to the network interface. You cannot specify this option and the option to assign a number of IPv6 addresses in the same request. You cannot specify this option if you've specified a minimum number of instances to launch.

Type: Array of InstanceIpv6Address objects

Required: No

**Ipv6Prefix.N**

The IPv6 delegated prefixes to be assigned to the network interface. You cannot use this option if you use the `Ipv6PrefixCount` option.

Type: Array of Ipv6PrefixSpecificationRequest objects

Required: No

**Ipv6PrefixCount** (request), **Ipv6PrefixCount** (response)

The number of IPv6 delegated prefixes to be automatically assigned to the network interface. You cannot use this option if you use the `Ipv6Prefix` option.

Type: Integer

Required: No

**NetworkCardIndex** (request), **NetworkCardIndex** (response)

The index of the network card. Some instance types support multiple network cards. The primary network interface must be assigned to network card index 0. The default is network card index 0.

If you are using RequestSpotInstances to create Spot Instances, omit this parameter because you can’t specify the network card index when using this API. To specify the network card index, use RunInstances.

Type: Integer

Required: No

**NetworkInterfaceId** (request), **networkInterfaceId** (response)

The ID of the network interface.

If you are creating a Spot Fleet, omit this parameter because you can't specify a network interface ID in a launch specification.

Type: String

Required: No

**PrimaryIpv6** (request), **PrimaryIpv6** (response)

The primary IPv6 address of the network interface. When you enable an IPv6 GUA address to be a primary IPv6, the first IPv6 GUA will be made the primary IPv6 address until the instance is terminated or the network interface is detached. For more information about primary IPv6 addresses, see RunInstances.

Type: Boolean

Required: No

**PrivateIpAddress** (request), **privateIpAddress** (response)

The private IPv4 address of the network interface. Applies only if creating a network interface when launching an instance. You cannot specify this option if you're launching more than one instance in a RunInstances request.

Type: String

Required: No

**PrivateIpAddresses.N**

The private IPv4 addresses to assign to the network interface. Only one private IPv4 address can be designated as primary. You cannot specify this option if you're launching more than one instance in a RunInstances request.

Type: Array of PrivateIpAddressSpecification objects

Required: No

**SecondaryPrivateIpAddressCount** (request), **secondaryPrivateIpAddressCount** (response)

The number of secondary private IPv4 addresses. You can't specify this parameter and also specify a secondary private IP address using the `PrivateIpAddress` parameter.

Type: Integer

Required: No

**SecurityGroupId.N**

The IDs of the security groups for the network interface. Applies only if creating a network interface when launching an instance.

Type: Array of strings

Required: No

**SubnetId** (request), **subnetId** (response)

The ID of the subnet associated with the network interface. Applies only if creating a network interface when launching an instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceNetworkPerformanceOptions

With network performance options, you can adjust your bandwidth preferences to meet the needs of the workload that runs on your instance.

## Contents

**bandwidthWeighting**

When you configure network bandwidth weighting, you can boost your baseline bandwidth for either networking or EBS by up to 25%. The total available baseline bandwidth for your instance remains the same. The default option uses the standard bandwidth configuration for your instance type.

Type: String

Valid Values: `default | vpc-1 | ebs-1`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceNetworkPerformanceOptionsRequest

Configure network performance options for your instance that are geared towards performance improvements based on the workload that it runs.

## Contents

**BandwidthWeighting**

Specify the bandwidth weighting option to boost the associated type of baseline bandwidth, as follows:

default

This option uses the standard bandwidth configuration for your instance type.

vpc-1

This option boosts your networking baseline bandwidth and reduces your EBS baseline bandwidth.

ebs-1

This option boosts your EBS baseline bandwidth and reduces your networking baseline bandwidth.

Type: String

Valid Values: `default | vpc-1 | ebs-1`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstancePrivateIpAddress

Describes a private IPv4 address.

## Contents

**association**

The association information for an Elastic IP address for the network interface.

Type: InstanceNetworkInterfaceAssociation object

Required: No

**primary**

Indicates whether this IPv4 address is the primary private IP address of the network interface.

Type: Boolean

Required: No

**privateDnsName**

The private IPv4 DNS name.

Type: String

Required: No

**privateIpAddress**

The private IPv4 address of the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceRequirements

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with these attributes.

You must specify `VCpuCount` and `MemoryMiB`. All other attributes are optional. Any unspecified optional attribute is set to its default.

When you specify multiple attributes, you get instance types that satisfy all of the specified attributes. If you specify multiple values for an attribute, you get instance types that satisfy any of the specified values.

To limit the list of instance types from which Amazon EC2 can identify matching instance types, you can use one of the following parameters, but not both in the same request:

- `AllowedInstanceTypes` - The instance types to include in the list. All other instance types are ignored, even if they match your specified attributes.
- `ExcludedInstanceTypes` - The instance types to exclude from the list, even if they match your specified attributes.

> **Note**
>
> If you specify `InstanceRequirements`, you can't specify `InstanceType`. Attribute-based instance type selection is only supported when using Auto Scaling groups, EC2 Fleet, and Spot Fleet to launch instances. If you plan to use the launch template in the launch instance wizard or with the RunInstances API, you can't specify `InstanceRequirements`.

For more information, see Create mixed instances group using attribute-based instance type selection in the *Amazon EC2 Auto Scaling User Guide*, and also Specify attributes for instance type selection for EC2 Fleet or Spot Fleet and Spot placement score in the *Amazon EC2 User Guide*.

## Contents

**AcceleratorCount** (request), **acceleratorCount** (response)

The minimum and maximum number of accelerators (GPUs, FPGAs, or AWS Inferentia chips) on an instance.

To exclude accelerator-enabled instance types, set `Max` to `0`.

Default: No minimum or maximum limits

Type: AcceleratorCount object

Required: No

**AcceleratorManufacturerSet.N**

Indicates whether instance types must have accelerators by specific manufacturers.

- For instance types with AWS devices, specify `amazon-web-services`.
- For instance types with AMD devices, specify `amd`.
- For instance types with Habana devices, specify `habana`.
- For instance types with NVIDIA devices, specify `nvidia`.
- For instance types with Xilinx devices, specify `xilinx`.

Default: Any manufacturer

Type: Array of strings

Valid Values: `amazon-web-services | amd | nvidia | xilinx | habana`

Required: No

**AcceleratorNameSet.N**

The accelerators that must be on the instance type.

- For instance types with NVIDIA A10G GPUs, specify `a10g`.
- For instance types with NVIDIA A100 GPUs, specify `a100`.
- For instance types with NVIDIA H100 GPUs, specify `h100`.
- For instance types with AWS Inferentia chips, specify `inferentia`.
- For instance types with AWS Inferentia2 chips, specify `inferentia2`.
- For instance types with Habana Gaudi HL-205 GPUs, specify `gaudi-hl-205`.
- For instance types with NVIDIA GRID K520 GPUs, specify `k520`.
- For instance types with NVIDIA K80 GPUs, specify `k80`.
- For instance types with NVIDIA L4 GPUs, specify `l4`.
- For instance types with NVIDIA L40S GPUs, specify `l40s`.

- For instance types with NVIDIA M60 GPUs, specify `m60`.
- For instance types with AMD Radeon Pro V520 GPUs, specify `radeon-pro-v520`.
- For instance types with AWS Trainium chips, specify `trainium`.
- For instance types with AWS Trainium2 chips, specify `trainium2`.
- For instance types with NVIDIA T4 GPUs, specify `t4`.
- For instance types with NVIDIA T4G GPUs, specify `t4g`.
- For instance types with Xilinx U30 cards, specify `u30`.
- For instance types with Xilinx VU9P FPGAs, specify `vu9p`.
- For instance types with NVIDIA V100 GPUs, specify `v100`.

Default: Any accelerator

Type: Array of strings

Valid Values: `a100 | inferentia | k520 | k80 | m60 | radeon-pro-v520 | t4 | vu9p | v100 | a10g | h100 | t4g | l40s | l4 | gaudi-hl-205 | inferentia2 | trainium | trainium2 | u30`

Required: No

**AcceleratorTotalMemoryMiB** (request), **acceleratorTotalMemoryMiB** (response)

The minimum and maximum amount of total accelerator memory, in MiB.

Default: No minimum or maximum limits

Type: AcceleratorTotalMemoryMiB object

Required: No

**AcceleratorTypeSet.N**

The accelerator types that must be on the instance type.

- For instance types with FPGA accelerators, specify `fpga`.
- For instance types with GPU accelerators, specify gpu.
- For instance types with Inference accelerators, specify `inference`.
- For instance types with Media accelerators, specify `media`.

Default: Any accelerator type

Type: Array of strings

Valid Values: `gpu | fpga | inference | media`

Required: No

**AllowedInstanceTypeSet.N**

The instance types to apply your specified attributes against. All other instance types are ignored, even if they match your specified attributes.

You can use strings with one or more wild cards, represented by an asterisk (*), to allow an instance type, size, or generation. The following are examples: `m5.8xlarge`, `c5*.*`, `m5a.*`, `r*`, `*3*`.

For example, if you specify `c5*`,Amazon EC2 will allow the entire C5 instance family, which includes all C5a and C5n instance types. If you specify `m5a.*`, Amazon EC2 will allow all the M5a instance types, but not the M5n instance types.

> **Note**
>
> If you specify `AllowedInstanceTypes`, you can't specify `ExcludedInstanceTypes`.

Default: All instance types

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 400 items.

Length Constraints: Minimum length of 1. Maximum length of 30.

Pattern: `[a-zA-Z0-9\.\*\-]+`

Required: No

**BareMetal** (request), **bareMetal** (response)

Indicates whether bare metal instance types must be included, excluded, or required.

- To include bare metal instance types, specify `included`.
- To require only bare metal instance types, specify `required`.

- To exclude bare metal instance types, specify `excluded`.

Default: `excluded`

Type: String

Valid Values: `included | required | excluded`

Required: No

**BaselineEbsBandwidthMbps** (request), **baselineEbsBandwidthMbps** (response)

The minimum and maximum baseline bandwidth to Amazon EBS, in Mbps. For more information, see Amazon EBS–optimized instances in the *Amazon EC2 User Guide*.

Default: No minimum or maximum limits

Type: BaselineEbsBandwidthMbps object

Required: No

**BaselinePerformanceFactors** (request), **baselinePerformanceFactors** (response)

The baseline performance to consider, using an instance family as a baseline reference. The instance family establishes the lowest acceptable level of performance. Amazon EC2 uses this baseline to guide instance type selection, but there is no guarantee that the selected instance types will always exceed the baseline for every application. Currently, this parameter only supports CPU performance as a baseline performance factor. For more information, see Performance protection in the *Amazon EC2 User Guide*.

Type: BaselinePerformanceFactors object

Required: No

**BurstablePerformance** (request), **burstablePerformance** (response)

Indicates whether burstable performance T instance types are included, excluded, or required. For more information, see Burstable performance instances.

- To include burstable performance instance types, specify `included`.
- To require only burstable performance instance types, specify `required`.
- To exclude burstable performance instance types, specify `excluded`.

Default: `excluded`

Type: String

Valid Values: `included | required | excluded`

Required: No

**CpuManufacturerSet.N**

The CPU manufacturers to include.

- For instance types with Intel CPUs, specify `intel`.
- For instance types with AMD CPUs, specify `amd`.
- For instance types with AWS CPUs, specify `amazon-web-services`.
- For instance types with Apple CPUs, specify `apple`.

> **Note**
>
> Don't confuse the CPU manufacturer with the CPU architecture. Instances will be launched with a compatible CPU architecture based on the Amazon Machine Image (AMI) that you specify in your launch template.

Default: Any manufacturer

Type: Array of strings

Valid Values: `intel | amd | amazon-web-services | apple`

Required: No

**ExcludedInstanceTypeSet.N**

The instance types to exclude.

You can use strings with one or more wild cards, represented by an asterisk (`*`), to exclude an instance type, size, or generation. The following are examples: `m5.8xlarge`, `c5*.*`, `m5a.*`, `r*`, `*3*`.

For example, if you specify `c5*`,Amazon EC2 will exclude the entire C5 instance family, which includes all C5a and C5n instance types. If you specify `m5a.*`, Amazon EC2 will exclude all the M5a instance types, but not the M5n instance types.

> **Note**
>
> If you specify `ExcludedInstanceTypes`, you can't specify `AllowedInstanceTypes`.

Default: No excluded instance types

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 400 items.

Length Constraints: Minimum length of 1. Maximum length of 30.

Pattern: `[a-zA-Z0-9\.\*\-]+`

Required: No

**InstanceGenerationSet.N**

Indicates whether current or previous generation instance types are included. The current generation instance types are recommended for use. Current generation instance types are typically the latest two to three generations in each instance family. For more information, see Instance types in the *Amazon EC2 User Guide*.

For current generation instance types, specify `current`.

For previous generation instance types, specify `previous`.

Default: Current and previous generation instance types

Type: Array of strings

Valid Values: `current | previous`

Required: No

**LocalStorage** (request), **localStorage** (response)

Indicates whether instance types with instance store volumes are included, excluded, or required. For more information, Amazon EC2 instance store in the *Amazon EC2 User Guide*.

- To include instance types with instance store volumes, specify `included`.
- To require only instance types with instance store volumes, specify `required`.
- To exclude instance types with instance store volumes, specify `excluded`.

Default: `included`

Type: String

Valid Values: `included | required | excluded`

Required: No

**LocalStorageTypeSet.N**

The type of local storage that is required.

- For instance types with hard disk drive (HDD) storage, specify hdd.
- For instance types with solid state drive (SSD) storage, specify `ssd`.

Default: hdd and `ssd`

Type: Array of strings

Valid Values: hdd | `ssd`

Required: No

**MaxSpotPriceAsPercentageOfOptimalOnDemandPrice** (request), **maxSpotPriceAsPercentageOfOptimalOnDemandPrice** (response)

[Price protection] The price protection threshold for Spot Instances, as a percentage of an identified On-Demand price. The identified On-Demand price is the price of the lowest priced current generation C, M, or R instance type with your specified attributes. If no current generation C, M, or R instance type matches your attributes, then the identified price is from the lowest priced current generation instance types, and failing that, from the lowest priced previous generation instance types that match your attributes. When Amazon EC2 selects instance types with your attributes, it will exclude instance types whose price exceeds your specified threshold.

The parameter accepts an integer, which Amazon EC2 interprets as a percentage.

If you set `TargetCapacityUnitType` to `vcpu` or `memory-mib`, the price protection threshold is based on the per vCPU or per memory price instead of the per instance price.

> **Note**
>
> Only one of `SpotMaxPricePercentageOverLowestPrice` or `MaxSpotPriceAsPercentageOfOptimalOnDemandPrice` can be specified. If you

don't specify either, Amazon EC2 will automatically apply optimal price protection to consistently select from a wide range of instance types. To indicate no price protection threshold for Spot Instances, meaning you want to consider all instance types that match your attributes, include one of these parameters and specify a high value, such as 999999.

Type: Integer

Required: No

**MemoryGiBPerVCpu** (request), **memoryGiBPerVCpu** (response)

The minimum and maximum amount of memory per vCPU, in GiB.

Default: No minimum or maximum limits

Type: MemoryGiBPerVCpu object

Required: No

**MemoryMiB** (request), **memoryMiB** (response)

The minimum and maximum amount of memory, in MiB.

Type: MemoryMiB object

Required: No

**NetworkBandwidthGbps** (request), **networkBandwidthGbps** (response)

The minimum and maximum amount of network bandwidth, in gigabits per second (Gbps).

Default: No minimum or maximum limits

Type: NetworkBandwidthGbps object

Required: No

**NetworkInterfaceCount** (request), **networkInterfaceCount** (response)

The minimum and maximum number of network interfaces.

Default: No minimum or maximum limits

Type: NetworkInterfaceCount object

Required: No

**OnDemandMaxPricePercentageOverLowestPrice** (request), **onDemandMaxPricePercentageOverLowestPrice** (response)

[Price protection] The price protection threshold for On-Demand Instances, as a percentage higher than an identified On-Demand price. The identified On-Demand price is the price of the lowest priced current generation C, M, or R instance type with your specified attributes. When Amazon EC2 selects instance types with your attributes, it will exclude instance types whose price exceeds your specified threshold.

The parameter accepts an integer, which Amazon EC2 interprets as a percentage.

To turn off price protection, specify a high value, such as 999999.

This parameter is not supported for GetSpotPlacementScores and GetInstanceTypesFromInstanceRequirements.

> **Note**
>
> If you set `TargetCapacityUnitType` to `vcpu` or `memory-mib`, the price protection threshold is applied based on the per-vCPU or per-memory price instead of the per-instance price.

Default: `20`

Type: Integer

Required: No

**RequireEncryptionInTransit** (request), **requireEncryptionInTransit** (response)

Specifies whether instance types must support encrypting in-transit traffic between instances. For more information, including the supported instance types, see Encryption in transit in the *Amazon EC2 User Guide*.

Default: `false`

Type: Boolean

Required: No

**RequireHibernateSupport** (request), **requireHibernateSupport** (response)

Indicates whether instance types must support hibernation for On-Demand Instances.

This parameter is not supported for GetSpotPlacementScores.

Default: `false`

Type: Boolean

Required: No

**SpotMaxPricePercentageOverLowestPrice** (request), **spotMaxPricePercentageOverLowestPrice** (response)

[Price protection] The price protection threshold for Spot Instances, as a percentage higher than an identified Spot price. The identified Spot price is the Spot price of the lowest priced current generation C, M, or R instance type with your specified attributes. If no current generation C, M, or R instance type matches your attributes, then the identified Spot price is from the lowest priced current generation instance types, and failing that, from the lowest priced previous generation instance types that match your attributes. When Amazon EC2 selects instance types with your attributes, it will exclude instance types whose Spot price exceeds your specified threshold.

The parameter accepts an integer, which Amazon EC2 interprets as a percentage.

If you set `TargetCapacityUnitType` to `vcpu` or `memory-mib`, the price protection threshold is applied based on the per-vCPU or per-memory price instead of the per-instance price.

This parameter is not supported for GetSpotPlacementScores and GetInstanceTypesFromInstanceRequirements.

> **Note**
>
> Only one of `SpotMaxPricePercentageOverLowestPrice` or `MaxSpotPriceAsPercentageOfOptimalOnDemandPrice` can be specified. If you don't specify either, Amazon EC2 will automatically apply optimal price protection to consistently select from a wide range of instance types. To indicate no price protection threshold for Spot Instances, meaning you want to consider all instance types that match your attributes, include one of these parameters and specify a high value, such as `999999`.

Default: 100

Type: Integer

Required: No

**TotalLocalStorageGB** (request), **totalLocalStorageGB** (response)

The minimum and maximum amount of total local storage, in GB.

Default: No minimum or maximum limits

Type: TotalLocalStorageGB object

Required: No

**VCpuCount** (request), **vCpuCount** (response)

The minimum and maximum number of vCPUs.

Type: VCpuCountRange object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceRequirementsRequest

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with these attributes.

You must specify `VCpuCount` and `MemoryMiB`. All other attributes are optional. Any unspecified optional attribute is set to its default.

When you specify multiple attributes, you get instance types that satisfy all of the specified attributes. If you specify multiple values for an attribute, you get instance types that satisfy any of the specified values.

To limit the list of instance types from which Amazon EC2 can identify matching instance types, you can use one of the following parameters, but not both in the same request:

- `AllowedInstanceTypes` - The instance types to include in the list. All other instance types are ignored, even if they match your specified attributes.
- `ExcludedInstanceTypes` - The instance types to exclude from the list, even if they match your specified attributes.

> **Note**
>
> If you specify `InstanceRequirements`, you can't specify `InstanceType`. Attribute-based instance type selection is only supported when using Auto Scaling groups, EC2 Fleet, and Spot Fleet to launch instances. If you plan to use the launch template in the launch instance wizard, or with the RunInstances API or AWS::EC2::Instance AWS CloudFormation resource, you can't specify `InstanceRequirements`.

For more information, see Specify attributes for instance type selection for EC2 Fleet or Spot Fleet and Spot placement score in the *Amazon EC2 User Guide*.

## Contents

### MemoryMiB

The minimum and maximum amount of memory, in MiB.

Type: MemoryMiBRequest object

Required: Yes

**VCpuCount**

The minimum and maximum number of vCPUs.

Type: VCpuCountRangeRequest object

Required: Yes

**AcceleratorCount**

The minimum and maximum number of accelerators (GPUs, FPGAs, or AWS Inferentia chips) on an instance.

To exclude accelerator-enabled instance types, set `Max` to `0`.

Default: No minimum or maximum limits

Type: AcceleratorCountRequest object

Required: No

**AcceleratorManufacturer.N**

Indicates whether instance types must have accelerators by specific manufacturers.

- For instance types with AWS devices, specify `amazon-web-services`.
- For instance types with AMD devices, specify `amd`.
- For instance types with Habana devices, specify `habana`.
- For instance types with NVIDIA devices, specify `nvidia`.
- For instance types with Xilinx devices, specify `xilinx`.

Default: Any manufacturer

Type: Array of strings

Valid Values: `amazon-web-services | amd | nvidia | xilinx | habana`

Required: No

**AcceleratorName.N**

The accelerators that must be on the instance type.

- For instance types with NVIDIA A10G GPUs, specify `a10g`.
- For instance types with NVIDIA A100 GPUs, specify `a100`.
- For instance types with NVIDIA H100 GPUs, specify `h100`.
- For instance types with AWS Inferentia chips, specify `inferentia`.
- For instance types with AWS Inferentia2 chips, specify `inferentia2`.
- For instance types with Habana Gaudi HL-205 GPUs, specify `gaudi-hl-205`.
- For instance types with NVIDIA GRID K520 GPUs, specify `k520`.
- For instance types with NVIDIA K80 GPUs, specify `k80`.
- For instance types with NVIDIA L4 GPUs, specify `l4`.
- For instance types with NVIDIA L40S GPUs, specify `l40s`.
- For instance types with NVIDIA M60 GPUs, specify `m60`.
- For instance types with AMD Radeon Pro V520 GPUs, specify `radeon-pro-v520`.
- For instance types with AWS Trainium chips, specify `trainium`.
- For instance types with AWS Trainium2 chips, specify `trainium2`.
- For instance types with NVIDIA T4 GPUs, specify `t4`.
- For instance types with NVIDIA T4G GPUs, specify `t4g`.
- For instance types with Xilinx U30 cards, specify `u30`.
- For instance types with Xilinx VU9P FPGAs, specify `vu9p`.
- For instance types with NVIDIA V100 GPUs, specify `v100`.

Default: Any accelerator

Type: Array of strings

Valid Values: `a100 | inferentia | k520 | k80 | m60 | radeon-pro-v520 | t4 | vu9p | v100 | a10g | h100 | t4g | l40s | l4 | gaudi-hl-205 | inferentia2 | trainium | trainium2 | u30`

Required: No

**AcceleratorTotalMemoryMiB**

The minimum and maximum amount of total accelerator memory, in MiB.

Default: No minimum or maximum limits

Type: AcceleratorTotalMemoryMiBRequest object

Required: No

**AcceleratorType.N**

The accelerator types that must be on the instance type.

- For instance types with FPGA accelerators, specify `fpga`.
- For instance types with GPU accelerators, specify `gpu`.
- For instance types with Inference accelerators, specify `inference`.
- For instance types with Media accelerators, specify `media`.

Default: Any accelerator type

Type: Array of strings

Valid Values: `gpu | fpga | inference | media`

Required: No

**AllowedInstanceType.N**

The instance types to apply your specified attributes against. All other instance types are ignored, even if they match your specified attributes.

You can use strings with one or more wild cards, represented by an asterisk (`*`), to allow an instance type, size, or generation. The following are examples: `m5.8xlarge`, `c5*.*`, `m5a.*`, `r*`, `*3*`.

For example, if you specify `c5*`,Amazon EC2 will allow the entire C5 instance family, which includes all C5a and C5n instance types. If you specify `m5a.*`, Amazon EC2 will allow all the M5a instance types, but not the M5n instance types.

> **Note**
>
> If you specify `AllowedInstanceTypes`, you can't specify `ExcludedInstanceTypes`.

Default: All instance types

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 400 items.

Length Constraints: Minimum length of 1. Maximum length of 30.

Pattern: `[a-zA-Z0-9\.\*\-]+`

Required: No

**BareMetal**

Indicates whether bare metal instance types must be included, excluded, or required.

- To include bare metal instance types, specify `included`.
- To require only bare metal instance types, specify `required`.
- To exclude bare metal instance types, specify `excluded`.

Default: `excluded`

Type: String

Valid Values: `included | required | excluded`

Required: No

**BaselineEbsBandwidthMbps**

The minimum and maximum baseline bandwidth to Amazon EBS, in Mbps. For more information, see Amazon EBS–optimized instances in the *Amazon EC2 User Guide*.

Default: No minimum or maximum limits

Type: BaselineEbsBandwidthMbpsRequest object

Required: No

**BaselinePerformanceFactors**

The baseline performance to consider, using an instance family as a baseline reference. The instance family establishes the lowest acceptable level of performance. Amazon EC2 uses this baseline to guide instance type selection, but there is no guarantee that the selected instance types will always exceed the baseline for every application. Currently, this parameter only supports CPU performance as a baseline performance factor. For more information, see Performance protection in the *Amazon EC2 User Guide*.

Type: BaselinePerformanceFactorsRequest object

Required: No

**BurstablePerformance**

Indicates whether burstable performance T instance types are included, excluded, or required. For more information, see Burstable performance instances.

- To include burstable performance instance types, specify `included`.
- To require only burstable performance instance types, specify `required`.
- To exclude burstable performance instance types, specify `excluded`.

Default: `excluded`

Type: String

Valid Values: `included | required | excluded`

Required: No

**CpuManufacturer.N**

The CPU manufacturers to include.

- For instance types with Intel CPUs, specify `intel`.
- For instance types with AMD CPUs, specify `amd`.
- For instance types with AWS CPUs, specify `amazon-web-services`.
- For instance types with Apple CPUs, specify `apple`.

> **Note**
>
> Don't confuse the CPU manufacturer with the CPU architecture. Instances will be launched with a compatible CPU architecture based on the Amazon Machine Image (AMI) that you specify in your launch template.

Default: Any manufacturer

Type: Array of strings

Valid Values: `intel | amd | amazon-web-services | apple`

Required: No

**ExcludedInstanceType.N**

The instance types to exclude.

You can use strings with one or more wild cards, represented by an asterisk (*), to exclude an instance family, type, size, or generation. The following are examples: `m5.8xlarge`, `c5*.*`, `m5a.*`, `r*`, `*3*`.

For example, if you specify `c5*`,Amazon EC2 will exclude the entire C5 instance family, which includes all C5a and C5n instance types. If you specify `m5a.*`, Amazon EC2 will exclude all the M5a instance types, but not the M5n instance types.

> **Note**
>
> If you specify `ExcludedInstanceTypes`, you can't specify `AllowedInstanceTypes`.

Default: No excluded instance types

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 400 items.

Length Constraints: Minimum length of 1. Maximum length of 30.

Pattern: `[a-zA-Z0-9\.\*\-]+`

Required: No

**InstanceGeneration.N**

Indicates whether current or previous generation instance types are included. The current generation instance types are recommended for use. Current generation instance types are typically the latest two to three generations in each instance family. For more information, see Instance types in the *Amazon EC2 User Guide*.

For current generation instance types, specify `current`.

For previous generation instance types, specify `previous`.

Default: Current and previous generation instance types

Type: Array of strings

Valid Values: `current | previous`

Required: No

**LocalStorage**

Indicates whether instance types with instance store volumes are included, excluded, or required. For more information, Amazon EC2 instance store in the *Amazon EC2 User Guide*.

- To include instance types with instance store volumes, specify `included`.
- To require only instance types with instance store volumes, specify `required`.
- To exclude instance types with instance store volumes, specify `excluded`.

Default: `included`

Type: String

Valid Values: `included | required | excluded`

Required: No

**LocalStorageType.N**

The type of local storage that is required.

- For instance types with hard disk drive (HDD) storage, specify hdd.
- For instance types with solid state drive (SSD) storage, specify `ssd`.

Default: hdd and `ssd`

Type: Array of strings

Valid Values: hdd | `ssd`

Required: No

**MaxSpotPriceAsPercentageOfOptimalOnDemandPrice**

[Price protection] The price protection threshold for Spot Instances, as a percentage of an identified On-Demand price. The identified On-Demand price is the price of the lowest priced current generation C, M, or R instance type with your specified attributes. If no current

generation C, M, or R instance type matches your attributes, then the identified price is from the lowest priced current generation instance types, and failing that, from the lowest priced previous generation instance types that match your attributes. When Amazon EC2 selects instance types with your attributes, it will exclude instance types whose price exceeds your specified threshold.

The parameter accepts an integer, which Amazon EC2 interprets as a percentage.

If you set `TargetCapacityUnitType` to `vcpu` or `memory-mib`, the price protection threshold is based on the per vCPU or per memory price instead of the per instance price.

> **Note**
>
> Only one of `SpotMaxPricePercentageOverLowestPrice` or `MaxSpotPriceAsPercentageOfOptimalOnDemandPrice` can be specified. If you don't specify either, Amazon EC2 will automatically apply optimal price protection to consistently select from a wide range of instance types. To indicate no price protection threshold for Spot Instances, meaning you want to consider all instance types that match your attributes, include one of these parameters and specify a high value, such as `999999`.

Type: Integer

Required: No

**MemoryGiBPerVCpu**

The minimum and maximum amount of memory per vCPU, in GiB.

Default: No minimum or maximum limits

Type: MemoryGiBPerVCpuRequest object

Required: No

**NetworkBandwidthGbps**

The minimum and maximum amount of baseline network bandwidth, in gigabits per second (Gbps). For more information, see Amazon EC2 instance network bandwidth in the *Amazon EC2 User Guide*.

Default: No minimum or maximum limits

Type: NetworkBandwidthGbpsRequest object

Required: No

**NetworkInterfaceCount**

The minimum and maximum number of network interfaces.

Default: No minimum or maximum limits

Type: NetworkInterfaceCountRequest object

Required: No

**OnDemandMaxPricePercentageOverLowestPrice**

[Price protection] The price protection threshold for On-Demand Instances, as a percentage higher than an identified On-Demand price. The identified On-Demand price is the price of the lowest priced current generation C, M, or R instance type with your specified attributes. When Amazon EC2 selects instance types with your attributes, it will exclude instance types whose price exceeds your specified threshold.

The parameter accepts an integer, which Amazon EC2 interprets as a percentage.

To indicate no price protection threshold, specify a high value, such as 999999.

This parameter is not supported for GetSpotPlacementScores and GetInstanceTypesFromInstanceRequirements.

> **Note**
>
> If you set `TargetCapacityUnitType` to `vcpu` or `memory-mib`, the price protection threshold is applied based on the per-vCPU or per-memory price instead of the per-instance price.

Default: `20`

Type: Integer

Required: No

**RequireEncryptionInTransit**

Specifies whether instance types must support encrypting in-transit traffic between instances. For more information, including the supported instance types, see Encryption in transit in the *Amazon EC2 User Guide*.

Default: `false`

Type: Boolean

Required: No

**RequireHibernateSupport**

Indicates whether instance types must support hibernation for On-Demand Instances.

This parameter is not supported for GetSpotPlacementScores.

Default: `false`

Type: Boolean

Required: No

**SpotMaxPricePercentageOverLowestPrice**

[Price protection] The price protection threshold for Spot Instances, as a percentage higher than an identified Spot price. The identified Spot price is the Spot price of the lowest priced current generation C, M, or R instance type with your specified attributes. If no current generation C, M, or R instance type matches your attributes, then the identified Spot price is from the lowest priced current generation instance types, and failing that, from the lowest priced previous generation instance types that match your attributes. When Amazon EC2 selects instance types with your attributes, it will exclude instance types whose Spot price exceeds your specified threshold.

The parameter accepts an integer, which Amazon EC2 interprets as a percentage.

If you set `TargetCapacityUnitType` to `vcpu` or `memory-mib`, the price protection threshold is applied based on the per-vCPU or per-memory price instead of the per-instance price.

This parameter is not supported for GetSpotPlacementScores and GetInstanceTypesFromInstanceRequirements.

> **Note**
>
> Only one of `SpotMaxPricePercentageOverLowestPrice` or `MaxSpotPriceAsPercentageOfOptimalOnDemandPrice` can be specified. If you don't specify either, Amazon EC2 will automatically apply optimal price protection to consistently select from a wide range of instance types. To indicate no price protection threshold for Spot Instances, meaning you want to consider all instance types that match your attributes, include one of these parameters and specify a high value, such as `999999`.

Default: `100`

Type: Integer

Required: No

**TotalLocalStorageGB**

The minimum and maximum amount of total local storage, in GB.

Default: No minimum or maximum limits

Type: TotalLocalStorageGBRequest object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceRequirementsWithMetadataRequest

The architecture type, virtualization type, and other attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

If you specify `InstanceRequirementsWithMetadataRequest`, you can't specify `InstanceTypes`.

## Contents

**ArchitectureType.N**

The architecture type.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 3 items.

Valid Values: `i386 | x86_64 | arm64 | x86_64_mac | arm64_mac`

Required: No

**InstanceRequirements**

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

Type: InstanceRequirementsRequest object

Required: No

**VirtualizationType.N**

The virtualization type.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 2 items.

Valid Values: `hvm | paravirtual`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceSecondaryInterface

Describes a secondary interface attached to an instance.

## Contents

**attachment**

The attachment information for the secondary interface.

Type: InstanceSecondaryInterfaceAttachment object

Required: No

**interfaceType**

The type of secondary interface.

Type: String

Valid Values: `secondary`

Required: No

**macAddress**

The MAC address of the secondary interface.

Type: String

Required: No

**ownerId**

The AWS account ID of the owner of the secondary interface.

Type: String

Required: No

**PrivateIpAddressSet.N**

The private IPv4 addresses associated with the secondary interface.

Type: Array of InstanceSecondaryInterfacePrivateIpAddress objects

Required: No

**secondaryInterfaceId**

The ID of the secondary interface.

Type: String

Required: No

**secondaryNetworkId**

The ID of the secondary network.

Type: String

Required: No

**secondarySubnetId**

The ID of the secondary subnet.

Type: String

Required: No

**sourceDestCheck**

Indicates whether source/destination checking is enabled.

Type: Boolean

Required: No

**status**

The status of the secondary interface.

Type: String

Valid Values: `available | in-use`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceSecondaryInterfaceAttachment

Describes the attachment of a secondary interface to an instance.

## Contents

**attachmentId**

The ID of the attachment.

Type: String

Required: No

**attachTime**

The timestamp when the attachment was created.

Type: Timestamp

Required: No

**deleteOnTermination**

Indicates whether the secondary interface is deleted when the instance is terminated.

The only supported value for this field is `true`.

Type: Boolean

Required: No

**deviceIndex**

The device index of the secondary interface.

Type: Integer

Required: No

**networkCardIndex**

The index of the network card.

Type: Integer

Required: No

**status**

The attachment state.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceSecondaryInterfacePrivateIpAddress

Describes a private IPv4 address for a secondary interface.

## Contents

**privateIpAddress**

The private IPv4 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceSecondaryInterfacePrivateIpAddressRequest

Describes a private IPv4 address for a secondary interface request.

## Contents

**PrivateIpAddress**

The private IPv4 address.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceSecondaryInterfaceSpecificationRequest

Describes a secondary interface specification for launching an instance.

## Contents

**DeleteOnTermination**

Indicates whether the secondary interface is deleted when the instance is terminated.

The only supported value for this field is `true`.

Type: Boolean

Required: No

**DeviceIndex**

The device index for the secondary interface attachment.

Type: Integer

Required: No

**InterfaceType**

The type of secondary interface.

Type: String

Valid Values: `secondary`

Required: No

**NetworkCardIndex**

The index of the network card. The network card must support secondary interfaces.

Type: Integer

Required: No

**PrivateIpAddress.N**

The private IPv4 addresses to assign to the secondary interface.

Type: Array of InstanceSecondaryInterfacePrivateIpAddressRequest objects

Required: No

**PrivateIpAddressCount**

The number of private IPv4 addresses to assign to the secondary interface.

Type: Integer

Required: No

**SecondarySubnetId**

The ID of the secondary subnet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceSpecification

The instance details to specify which volumes should be snapshotted.

## Contents

**InstanceId**

The instance to specify which volumes should be snapshotted.

Type: String

Required: Yes

**ExcludeBootVolume**

Excludes the root volume from being snapshotted.

Type: Boolean

Required: No

**ExcludeDataVolumeId.N**

The IDs of the data (non-root) volumes to exclude from the multi-volume snapshot set. If you specify the ID of the root volume, the request fails. To exclude the root volume, use **ExcludeBootVolume**.

You can specify up to 40 volume IDs per request.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceState

Describes the current state of an instance.

## Contents

**code**

The state of the instance as a 16-bit unsigned integer.

The high byte is all of the bits between 2^8 and (2^16)-1, which equals decimal values between 256 and 65,535. These numerical values are used for internal purposes and should be ignored.

The low byte is all of the bits between 2^0 and (2^8)-1, which equals decimal values between 0 and 255.

The valid values for instance-state-code will all be in the range of the low byte and they are:

- `0` : `pending`
- `16` : `running`
- `32` : `shutting-down`
- `48` : `terminated`
- `64` : `stopping`
- `80` : `stopped`

You can ignore the high byte value by zeroing out all of the bits above 2^8 or 256 in decimal.

Type: Integer

Required: No

**name**

The current state of the instance.

Type: String

Valid Values: `pending | running | shutting-down | terminated | stopping | stopped`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceStateChange

Describes an instance state change.

## Contents

**currentState**

The current state of the instance.

Type: InstanceState object

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

**previousState**

The previous state of the instance.

Type: InstanceState object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceStatus

Describes the status of an instance.

## Contents

**attachedEbsStatus**

Reports impaired functionality that stems from an attached Amazon EBS volume that is unreachable and unable to complete I/O operations.

Type: EbsStatusSummary object

Required: No

**availabilityZone**

The Availability Zone of the instance.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone of the instance.

Type: String

Required: No

**EventsSet.N**

Any scheduled events associated with the instance.

Type: Array of InstanceStatusEvent objects

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

**instanceState**

The intended state of the instance. DescribeInstanceStatus requires that an instance be in the `running` state.

Type: InstanceState object

Required: No

**instanceStatus**

Reports impaired functionality that stems from issues internal to the instance, such as impaired reachability.

Type: InstanceStatusSummary object

Required: No

**operator**

The service provider that manages the instance.

Type: OperatorResponse object

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**systemStatus**

Reports impaired functionality that stems from issues related to the systems that support an instance, such as hardware failures and network connectivity problems.

Type: InstanceStatusSummary object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceStatusDetails

Describes the instance status.

## Contents

**impairedSince**

The time when a status check failed. For an instance that was launched and impaired, this is the time when the instance was launched.

Type: Timestamp

Required: No

**name**

The type of instance status.

Type: String

Valid Values: `reachability`

Required: No

**status**

The status.

Type: String

Valid Values: `passed | failed | insufficient-data | initializing`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# InstanceStatusEvent

Describes a scheduled event for an instance.

## Contents

**code**

The event code.

Type: String

Valid Values: `instance-reboot | system-reboot | system-maintenance | instance-retirement | instance-stop`

Required: No

**description**

A description of the event.

After a scheduled event is completed, it can still be described for up to a week. If the event has been completed, this description starts with the following text: [Completed].

Type: String

Required: No

**instanceEventId**

The ID of the event.

Type: String

Required: No

**notAfter**

The latest scheduled end time for the event.

Type: Timestamp

Required: No

**notBefore**

The earliest scheduled start time for the event.

Type: Timestamp

Required: No

**notBeforeDeadline**

The deadline for starting the event.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceStatusSummary

Describes the status of an instance.

## Contents

**Details.N**

The system instance health or application instance health.

Type: Array of InstanceStatusDetails objects

Required: No

**status**

The status.

Type: String

Valid Values: `ok | impaired | insufficient-data | not-applicable | initializing`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceStorageInfo

Describes the instance store features that are supported by the instance type.

## Contents

**Disks.N**

Describes the disks that are available for the instance type.

Type: Array of DiskInfo objects

Required: No

**encryptionSupport**

Indicates whether data is encrypted at rest.

Type: String

Valid Values: `unsupported | required`

Required: No

**nvmeSupport**

Indicates whether non-volatile memory express (NVMe) is supported.

Type: String

Valid Values: `unsupported | supported | required`

Required: No

**totalSizeInGB**

The total size of the disks, in GB.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceTagNotificationAttribute

Describes the registered tag keys for the current Region.

## Contents

**includeAllTagsOfInstance**

Indicates wheter all tag keys in the current Region are registered to appear in scheduled event notifications. `true` indicates that all tag keys in the current Region are registered.

Type: Boolean

Required: No

**InstanceTagKeySet.N**

The registered tag keys.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceTopology

Information about the instance topology.

## Contents

**availabilityZone**

The name of the Availability Zone or Local Zone that the instance is in.

Type: String

Required: No

**capacityBlockId**

The ID of the Capacity Block. This parameter is only supported for UltraServer instances and identifies instances within the UltraServer domain.

Type: String

Required: No

**groupName**

The name of the placement group that the instance is in.

Type: String

Required: No

**instanceId**

The instance ID.

Type: String

Required: No

**instanceType**

The instance type.

Type: String

Required: No

**NetworkNodeSet.N**

The network nodes. The nodes are hashed based on your account. Instances from different accounts running under the same server will return a different hashed list of strings.

The value is `null` or empty if:

- The instance type is not supported.
- The instance is in a state other than `running`.

Type: Array of strings

Required: No

**zoneId**

The ID of the Availability Zone or Local Zone that the instance is in.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceTypeInfo

Describes the instance type.

## Contents

**autoRecoverySupported**

Indicates whether Amazon CloudWatch action based recovery is supported.

Type: Boolean

Required: No

**bareMetal**

Indicates whether the instance is a bare metal instance type.

Type: Boolean

Required: No

**burstablePerformanceSupported**

Indicates whether the instance type is a burstable performance T instance type. For more information, see Burstable performance instances.

Type: Boolean

Required: No

**currentGeneration**

Indicates whether the instance type is current generation.

Type: Boolean

Required: No

**dedicatedHostsSupported**

Indicates whether Dedicated Hosts are supported on the instance type.

Type: Boolean

Required: No

**ebsInfo**

Describes the Amazon EBS settings for the instance type.

Type: EbsInfo object

Required: No

**fpgaInfo**

Describes the FPGA accelerator settings for the instance type.

Type: FpgaInfo object

Required: No

**freeTierEligible**

Indicates whether the instance type is eligible for the free tier.

Type: Boolean

Required: No

**gpuInfo**

Describes the GPU accelerator settings for the instance type.

Type: GpuInfo object

Required: No

**hibernationSupported**

Indicates whether On-Demand hibernation is supported.

Type: Boolean

Required: No

**hypervisor**

The hypervisor for the instance type.

Type: String

Valid Values: `nitro | xen`

Required: No

**inferenceAcceleratorInfo**

Describes the Inference accelerator settings for the instance type.

Type: InferenceAcceleratorInfo object

Required: No

**instanceStorageInfo**

Describes the instance storage for the instance type.

Type: InstanceStorageInfo object

Required: No

**instanceStorageSupported**

Indicates whether instance storage is supported.

Type: Boolean

Required: No

**instanceType**

The instance type. For more information, see Instance types in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge`

| c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge

| m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small |

t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge

| m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge

| c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge

```
| i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge |
m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge
| m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge |
m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium |
r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge
| r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge
| r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large |
c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge
| c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl
| c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large |
g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge
| r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge |
r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge
| r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-
flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge |
r8i-flex.12xlarge | r8i-flex.16xlarge
```

Required: No

**mediaAcceleratorInfo**

Describes the media accelerator settings for the instance type.

Type: MediaAcceleratorInfo object

Required: No

**memoryInfo**

Describes the memory for the instance type.

Type: MemoryInfo object

Required: No

**networkInfo**

Describes the network settings for the instance type.

Type: NetworkInfo object

Required: No

**neuronInfo**

Describes the Neuron accelerator settings for the instance type.

Type: NeuronInfo object

Required: No

**nitroEnclavesSupport**

Indicates whether Nitro Enclaves is supported.

Type: String

Valid Values: `unsupported | supported`

Required: No

**nitroTpmInfo**

Describes the supported NitroTPM versions for the instance type.

Type: NitroTpmInfo object

Required: No

**nitroTpmSupport**

Indicates whether NitroTPM is supported.

Type: String

Valid Values: `unsupported | supported`

Required: No

**phcSupport**

Indicates whether a local Precision Time Protocol (PTP) hardware clock (PHC) is supported.

Type: String

Valid Values: `unsupported | supported`

Required: No

**placementGroupInfo**

Describes the placement group settings for the instance type.

Type: PlacementGroupInfo object

Required: No

**processorInfo**

Describes the processor.

Type: ProcessorInfo object

Required: No

**rebootMigrationSupport**

Indicates whether reboot migration during a user-initiated reboot is supported for instances that have a scheduled `system-reboot` event. For more information, see Enable or disable reboot migration in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `unsupported | supported`

Required: No

**SupportedBootModes.N**

The supported boot modes. For more information, see Boot modes in the *Amazon EC2 User Guide*.

Type: Array of strings

Valid Values: `legacy-bios | uefi`

Required: No

**supportedInRegion**

Indicates whether the instance type is supported in the current Region.

Type: Boolean

Required: No

**SupportedRootDeviceTypes.N**

The supported root device types.

Type: Array of strings

Valid Values: `ebs | instance-store`

Required: No

**SupportedUsageClasses.N**

Indicates whether the instance type is offered for spot, On-Demand, or Capacity Blocks.

Type: Array of strings

Valid Values: `spot | on-demand | capacity-block`

Required: No

**SupportedVirtualizationTypes.N**

The supported virtualization types.

Type: Array of strings

Valid Values: `hvm | paravirtual`

Required: No

**vCpuInfo**

Describes the vCPU configurations for the instance type.

Type: VCpuInfo object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceTypeInfoFromInstanceRequirements

The list of instance types with the specified instance attributes.

## Contents

**instanceType**

The matching instance type.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceTypeOffering

The instance types offered.

## Contents

### instanceType

The instance type. For more information, see Instance types in the *Amazon EC2 User Guide*.

Type: String

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge

| g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge

| m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge |

z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge

| trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large |

r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge |

`r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge`

Required: No

**location**

The identifier for the location. This depends on the location type. For example, if the location type is `region`, the location is the Region code (for example, `us-east-2`.)

Type: String

Required: No

**locationType**

The location type.

Type: String

Valid Values: `region | availability-zone | availability-zone-id | outpost`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InstanceUsage

Information about the Capacity Reservation usage.

## Contents

**accountId**

The ID of the AWS account that is making use of the Capacity Reservation.

Type: String

Required: No

**usedInstanceCount**

The number of instances the AWS account currently has in the Capacity Reservation.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IntegrateServices

Describes service integrations with VPC Flow logs.

## Contents

**AthenaIntegration.N**

Information about the integration with Amazon Athena.

Type: Array of AthenaIntegration objects

Array Members: Minimum number of 1 item. Maximum number of 10 items.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InternetGateway

Describes an internet gateway.

## Contents

**AttachmentSet.N**

Any VPCs attached to the internet gateway.

Type: Array of InternetGatewayAttachment objects

Required: No

**internetGatewayId**

The ID of the internet gateway.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the internet gateway.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the internet gateway.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InternetGatewayAttachment

Describes the attachment of a VPC to an internet gateway or an egress-only internet gateway.

## Contents

**state**

The current state of the attachment. For an internet gateway, the state is `available` when attached to a VPC; otherwise, this value is not returned.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InterruptibleCapacityAllocation

Represents the allocation of capacity from a source reservation to an interruptible reservation, tracking current and target instance counts for allocation management.

## Contents

**instanceCount**

The current number of instances allocated to the interruptible reservation.

Type: Integer

Required: No

**interruptibleCapacityReservationId**

The ID of the interruptible Capacity Reservation created from the allocation.

Type: String

Required: No

**interruptionType**

The type of interruption policy applied to the interruptible reservation.

Type: String

Valid Values: adhoc

Required: No

**status**

The current status of the allocation (updating during reclamation, active when complete).

Type: String

Valid Values: `pending | active | updating | canceling | canceled | failed`

Required: No

**targetInstanceCount**

After your modify request, the requested number of instances allocated to interruptible reservation.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# InterruptionInfo

Contains information about how and when instances in an interruptible reservation can be terminated when capacity is reclaimed.

## Contents

**interruptionType**

The interruption type that determines how instances are terminated when capacity is reclaimed.

Type: String

Valid Values: adhoc

Required: No

**sourceCapacityReservationId**

The ID of the source Capacity Reservation from which the interruptible reservation was created.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ipam

IPAM is a VPC feature that you can use to automate your IP address management workflows including assigning, tracking, troubleshooting, and auditing IP addresses across AWS Regions and accounts throughout your AWS Organization. For more information, see What is IPAM? in the *Amazon VPC IPAM User Guide*.

## Contents

**defaultResourceDiscoveryAssociationId**

The IPAM's default resource discovery association ID.

Type: String

Required: No

**defaultResourceDiscoveryId**

The IPAM's default resource discovery ID.

Type: String

Required: No

**description**

The description for the IPAM.

Type: String

Required: No

**enablePrivateGua**

Enable this option to use your own GUA ranges as private IPv6 addresses. This option is disabled by default.

Type: Boolean

Required: No

**ipamArn**

The Amazon Resource Name (ARN) of the IPAM.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamId**

The ID of the IPAM.

Type: String

Required: No

**ipamRegion**

The AWS Region of the IPAM.

Type: String

Required: No

**meteredAccount**

A metered account is an AWS account that is charged for active IP addresses managed in IPAM. For more information, see Enable cost distribution in the *Amazon VPC IPAM User Guide*.

Possible values:

- `ipam-owner` (default): The AWS account which owns the IPAM is charged for all active IP addresses managed in IPAM.
- `resource-owner`: The AWS account that owns the IP address is charged for the active IP address.

Type: String

Valid Values: `ipam-owner | resource-owner`

Required: No

**OperatingRegionSet.N**

The operating Regions for an IPAM. Operating Regions are AWS Regions where the IPAM is allowed to manage IP address CIDRs. IPAM only discovers and monitors resources in the AWS Regions you select as operating Regions.

For more information about operating Regions, see Create an IPAM in the *Amazon VPC IPAM User Guide*.

Type: Array of IpamOperatingRegion objects

Required: No

**ownerId**

The AWS account ID of the owner of the IPAM.

Type: String

Required: No

**privateDefaultScopeId**

The ID of the IPAM's default private scope.

Type: String

Required: No

**publicDefaultScopeId**

The ID of the IPAM's default public scope.

Type: String

Required: No

**resourceDiscoveryAssociationCount**

The IPAM's resource discovery association count.

Type: Integer

Required: No

**scopeCount**

The number of scopes in the IPAM. The scope quota is 5. For more information on quotas, see Quotas in IPAM in the *Amazon VPC IPAM User Guide*.

Type: Integer

Required: No

**state**

The state of the IPAM.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | modify-in-progress | modify-complete | modify-failed | delete-in-progress | delete-complete | delete-failed | isolate-in-progress | isolate-complete | restore-in-progress`

Required: No

**stateMessage**

The state message.

Type: String

Required: No

**TagSet.N**

The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of Tag objects

Required: No

**tier**

IPAM is offered in a Free Tier and an Advanced Tier. For more information about the features available in each tier and the costs associated with the tiers, see Amazon VPC pricing > IPAM tab.

Type: String

Valid Values: `free | advanced`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamAddressHistoryRecord

The historical record of a CIDR within an IPAM scope. For more information, see View the history of IP addresses in the *Amazon VPC IPAM User Guide*.

## Contents

**resourceCidr**

The CIDR of the resource.

Type: String

Required: No

**resourceComplianceStatus**

The compliance status of a resource. For more information on compliance statuses, see Monitor CIDR usage by resource in the *Amazon VPC IPAM User Guide*.

Type: String

Valid Values: `compliant | noncompliant | unmanaged | ignored`

Required: No

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceName**

The name of the resource.

Type: String

Required: No

**resourceOverlapStatus**

The overlap status of an IPAM resource. The overlap status tells you if the CIDR for a resource overlaps with another CIDR in the scope. For more information on overlap statuses, see Monitor CIDR usage by resource in the *Amazon VPC IPAM User Guide*.

Type: String

Valid Values: `overlapping | nonoverlapping | ignored`

Required: No

**resourceOwnerId**

The ID of the resource owner.

Type: String

Required: No

**resourceRegion**

The AWS Region of the resource.

Type: String

Required: No

**resourceType**

The type of the resource.

Type: String

Valid Values: `eip | vpc | subnet | network-interface | instance`

Required: No

**sampledEndTime**

Sampled end time of the resource-to-CIDR association within the IPAM scope. Changes are picked up in periodic snapshots, so the end time may have occurred before this specific time.

Type: Timestamp

Required: No

**sampledStartTime**

Sampled start time of the resource-to-CIDR association within the IPAM scope. Changes are picked up in periodic snapshots, so the start time may have occurred before this specific time.

Type: Timestamp

Required: No

**vpcId**

The VPC ID of the resource.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamCidrAuthorizationContext

A signed document that proves that you are authorized to bring the specified IP address range to Amazon using BYOIP.

## Contents

**Message**

The plain-text authorization message for the prefix and account.

Type: String

Required: No

**Signature**

The signed authorization message for the prefix and account.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamDiscoveredAccount

An IPAM discovered account. A discovered account is an AWS account that is monitored under a resource discovery. If you have integrated IPAM with AWS Organizations, all accounts in the organization are discovered accounts.

## Contents

**accountId**

The account ID.

Type: String

Required: No

**discoveryRegion**

The AWS Region that the account information is returned from. An account can be discovered in multiple regions and will have a separate discovered account for each Region.

Type: String

Required: No

**failureReason**

The resource discovery failure reason.

Type: IpamDiscoveryFailureReason object

Required: No

**lastAttemptedDiscoveryTime**

The last attempted resource discovery time.

Type: Timestamp

Required: No

**lastSuccessfulDiscoveryTime**

The last successful resource discovery time.

Type: Timestamp

Required: No

**organizationalUnitId**

The ID of an Organizational Unit in AWS Organizations.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamDiscoveredPublicAddress

A public IP Address discovered by IPAM.

## Contents

**address**

The IP address.

Type: String

Required: No

**addressAllocationId**

The allocation ID of the resource the IP address is assigned to.

Type: String

Required: No

**addressOwnerId**

The ID of the owner of the resource the IP address is assigned to.

Type: String

Required: No

**addressRegion**

The Region of the resource the IP address is assigned to.

Type: String

Required: No

**addressType**

The IP address type.

Type: String

Valid Values: `service-managed-ip | service-managed-byoip | amazon-owned-eip | amazon-owned-contig | byoip | ec2-public-ip | anycast-ip-list-ip`

Required: No

**associationStatus**

The association status.

Type: String

Valid Values: `associated | disassociated`

Required: No

**instanceId**

The instance ID of the instance the assigned IP address is assigned to.

Type: String

Required: No

**ipamResourceDiscoveryId**

The resource discovery ID.

Type: String

Required: No

**networkBorderGroup**

The Availability Zone (AZ) or Local Zone (LZ) network border group that the resource that the IP address is assigned to is in. Defaults to an AZ network border group. For more information on available Local Zones, see Local Zone availability in the *Amazon EC2 User Guide*.

Type: String

Required: No

**networkInterfaceDescription**

The description of the network interface that IP address is assigned to.

Type: String

Required: No

**networkInterfaceId**

The network interface ID of the resource with the assigned IP address.

Type: String

Required: No

**publicIpv4PoolId**

The ID of the public IPv4 pool that the resource with the assigned IP address is from.

Type: String

Required: No

**sampleTime**

The last successful resource discovery time.

Type: Timestamp

Required: No

**SecurityGroupSet.N**

Security groups associated with the resource that the IP address is assigned to.

Type: Array of IpamPublicAddressSecurityGroup objects

Required: No

**service**

The AWS service associated with the IP address.

Type: String

Valid Values: `nat-gateway | database-migration-service | redshift | elastic-container-service | relational-database-service | site-to-site-vpn | load-balancer | global-accelerator | cloudfront | other`

Required: No

**serviceResource**

The resource ARN or ID.

Type: String

Required: No

**subnetId**

The ID of the subnet that the resource with the assigned IP address is in.

Type: String

Required: No

**tags**

Tags associated with the IP address.

Type: IpamPublicAddressTags object

Required: No

**vpcId**

The ID of the VPC that the resource with the assigned IP address is in.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamDiscoveredResourceCidr

An IPAM discovered resource CIDR. A discovered resource is a resource CIDR monitored under a resource discovery. The following resources can be discovered: VPCs, Public IPv4 pools, VPC subnets, and Elastic IP addresses. The discovered resource CIDR is the IP address range in CIDR notation that is associated with the resource.

## Contents

**availabilityZoneId**

The Availability Zone ID.

Type: String

Required: No

**ipamResourceDiscoveryId**

The resource discovery ID.

Type: String

Required: No

**ipSource**

The source that allocated the IP address space. `byoip` or `amazon` indicates public IP address space allocated by Amazon or space that you have allocated with Bring your own IP (BYOIP). `none` indicates private space.

Type: String

Valid Values: `amazon | byoip | none`

Required: No

**ipUsage**

The percentage of IP address space in use. To convert the decimal to a percentage, multiply the decimal by 100. Note the following:

- For resources that are VPCs, this is the percentage of IP address space in the VPC that's taken up by subnet CIDRs.

- For resources that are subnets, if the subnet has an IPv4 CIDR provisioned to it, this is the percentage of IPv4 address space in the subnet that's in use. If the subnet has an IPv6 CIDR provisioned to it, the percentage of IPv6 address space in use is not represented. The percentage of IPv6 address space in use cannot currently be calculated.
- For resources that are public IPv4 pools, this is the percentage of IP address space in the pool that's been allocated to Elastic IP addresses (EIPs).

Type: Double

Required: No

**networkInterfaceAttachmentStatus**

For elastic network interfaces, this is the status of whether or not the elastic network interface is attached.

Type: String

Valid Values: `available | in-use`

Required: No

**resourceCidr**

The resource CIDR.

Type: String

Required: No

**resourceId**

The resource ID.

Type: String

Required: No

**resourceOwnerId**

The resource owner ID.

Type: String

Required: No

**resourceRegion**

The resource Region.

Type: String

Required: No

**ResourceTagSet.N**

The resource tags.

Type: Array of IpamResourceTag objects

Required: No

**resourceType**

The resource type.

Type: String

Valid Values: `vpc | subnet | eip | public-ipv4-pool | ipv6-pool | eni | anycast-ip-list`

Required: No

**sampleTime**

The last successful resource discovery time.

Type: Timestamp

Required: No

**subnetId**

The subnet ID.

Type: String

Required: No

**vpcId**

The VPC ID.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamDiscoveryFailureReason

The discovery failure reason.

## Contents

**code**

The discovery failure code.

- `assume-role-failure` - IPAM could not assume the AWS IAM service-linked role. This could be because of any of the following:
  - SLR has not been created yet and IPAM is still creating it.
  - You have opted-out of the IPAM home Region.
  - Account you are using as your IPAM account has been suspended.
- `throttling-failure` - IPAM account is already using the allotted transactions per second and IPAM is receiving a throttling error when assuming the AWS IAM SLR.
- `unauthorized-failure` - AWS account making the request is not authorized. For more information, see AuthFailure in the *Amazon Elastic Compute Cloud API Reference*.

Type: String

Valid Values: `assume-role-failure | throttling-failure | unauthorized-failure`

Required: No

**message**

The discovery failure message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamExternalResourceVerificationToken

A verification token is an AWS-generated random value that you can use to prove ownership of an external resource. For example, you can use a verification token to validate that you control a public IP address range when you bring an IP address range to AWS (BYOIP).

## Contents

**ipamArn**

ARN of the IPAM that created the token.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamExternalResourceVerificationTokenArn**

Token ARN.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamExternalResourceVerificationTokenId**

The ID of the token.

Type: String

Required: No

**ipamId**

The ID of the IPAM that created the token.

Type: String

Required: No

**ipamRegion**

Region of the IPAM that created the token.

Type: String

Required: No

**notAfter**

Token expiration.

Type: Timestamp

Required: No

**state**

Token state.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | delete-in-progress | delete-complete | delete-failed`

Required: No

**status**

Token status.

Type: String

Valid Values: `valid | expired`

Required: No

**TagSet.N**

Token tags.

Type: Array of Tag objects

Required: No

**tokenName**

Token name.

Type: String

Required: No

**tokenValue**

Token value.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamOperatingRegion

The operating Regions for an IPAM. Operating Regions are AWS Regions where the IPAM is allowed to manage IP address CIDRs. IPAM only discovers and monitors resources in the AWS Regions you select as operating Regions.

For more information about operating Regions, see Create an IPAM in the *Amazon VPC IPAM User Guide*.

## Contents

**regionName**

The name of the operating Region.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamOrganizationalUnitExclusion

If your IPAM is integrated with AWS Organizations and you add an organizational unit (OU) exclusion, IPAM will not manage the IP addresses in accounts in that OU exclusion.

## Contents

**organizationsEntityPath**

An AWS Organizations entity path. For more information on the entity path, see Understand the AWS Organizations entity path in the *AWS Identity and Access Management User Guide*.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPolicy

Information about an IPAM policy.

An IPAM policy is a set of rules that define how public IPv4 addresses from IPAM pools are allocated to AWS resources. Each rule maps an AWS service to IPAM pools that the service will use to get IP addresses. A single policy can have multiple rules and be applied to multiple AWS Regions. If the IPAM pool run out of addresses then the services fallback to Amazon-provided IP addresses. A policy can be applied to an individual AWS account or an entity within AWS Organizations.

## Contents

**ipamId**

The ID of the IPAM this policy belongs to.

Type: String

Required: No

**ipamPolicyArn**

The Amazon Resource Name (ARN) of the IPAM policy.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamPolicyId**

The ID of the IPAM policy.

Type: String

Required: No

**ipamPolicyRegion**

The Region of the IPAM policy.

Type: String

Required: No

**ownerId**

The account ID that owns the IPAM policy.

Type: String

Required: No

**state**

The state of the IPAM policy.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | modify-in-progress | modify-complete | modify-failed | delete-in-progress | delete-complete | delete-failed | isolate-in-progress | isolate-complete | restore-in-progress`

Required: No

**stateMessage**

A message about the state of the IPAM policy.

Type: String

Required: No

**TagSet.N**

The tags assigned to the IPAM policy.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPolicyAllocationRule

Information about an IPAM policy allocation rule.

Allocation rules are optional configurations within an IPAM policy that map AWS resource types to specific IPAM pools. If no rules are defined, the resource types default to using Amazon-provided IP addresses.

## Contents

**sourceIpamPoolId**

The ID of the source IPAM pool for the allocation rule.

An IPAM pool is a collection of IP addresses in IPAM that can be allocated to AWS resources.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPolicyAllocationRuleRequest

Information about a requested IPAM policy allocation rule.

Allocation rules are optional configurations within an IPAM policy that map AWS resource types to specific IPAM pools. If no rules are defined, the resource types default to using Amazon-provided IP addresses.

## Contents

**SourceIpamPoolId**

The ID of the source IPAM pool for the requested allocation rule.

An IPAM pool is a collection of IP addresses in IPAM that can be allocated to AWS resources.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPolicyDocument

Information about an IPAM policy.

## Contents

**AllocationRuleSet.N**

The allocation rules in the IPAM policy document.

Allocation rules are optional configurations within an IPAM policy that map AWS resource types to specific IPAM pools. If no rules are defined, the resource types default to using Amazon-provided IP addresses.

Type: Array of IpamPolicyAllocationRule objects

Required: No

**ipamPolicyId**

The ID of the IPAM policy.

Type: String

Required: No

**locale**

The locale of the IPAM policy document.

Type: String

Required: No

**resourceType**

The resource type of the IPAM policy document.

The AWS service or resource type that can use IP addresses through IPAM policies. Supported services and resource types include:

- Elastic IP addresses

Type: String

Valid Values: `alb | eip | rds | rnat`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPolicyOrganizationTarget

The AWS Organizations target for an IPAM policy.

## Contents

**organizationTargetId**

The ID of the AWS Organizations target.

A target can be an individual AWS account or an entity within an AWS Organization to which an IPAM policy can be applied.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPool

In IPAM, a pool is a collection of contiguous IP addresses CIDRs. Pools enable you to organize your IP addresses according to your routing and security needs. For example, if you have separate routing and security needs for development and production applications, you can create a pool for each.

## Contents

**addressFamily**

The address family of the pool.

Type: String

Valid Values: `ipv4 | ipv6`

Required: No

**allocationDefaultNetmaskLength**

The default netmask length for allocations added to this pool. If, for example, the CIDR assigned to this pool is 10.0.0.0/8 and you enter 16 here, new allocations will default to 10.0.0.0/16.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 128.

Required: No

**allocationMaxNetmaskLength**

The maximum netmask length possible for CIDR allocations in this IPAM pool to be compliant. The maximum netmask length must be greater than the minimum netmask length. Possible netmask lengths for IPv4 addresses are 0 - 32. Possible netmask lengths for IPv6 addresses are 0 - 128.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 128.

Required: No

**allocationMinNetmaskLength**

The minimum netmask length required for CIDR allocations in this IPAM pool to be compliant. The minimum netmask length must be less than the maximum netmask length. Possible netmask lengths for IPv4 addresses are 0 - 32. Possible netmask lengths for IPv6 addresses are 0 - 128.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 128.

Required: No

**AllocationResourceTagSet.N**

Tags that are required for resources that use CIDRs from this IPAM pool. Resources that do not have these tags will not be allowed to allocate space from the pool. If the resources have their tags changed after they have allocated space or if the allocation tagging requirements are changed on the pool, the resource may be marked as noncompliant.

Type: Array of IpamResourceTag objects

Required: No

**autoImport**

If selected, IPAM will continuously look for resources within the CIDR range of this pool and automatically import them as allocations into your IPAM. The CIDRs that will be allocated for these resources must not already be allocated to other resources in order for the import to succeed. IPAM will import a CIDR regardless of its compliance with the pool's allocation rules, so a resource might be imported and subsequently marked as noncompliant. If IPAM discovers multiple CIDRs that overlap, IPAM will import the largest CIDR only. If IPAM discovers multiple CIDRs with matching CIDRs, IPAM will randomly import one of them only.

A locale must be set on the pool for this feature to work.

Type: Boolean

Required: No

**awsService**

Limits which service in AWS that the pool can be used in. "ec2", for example, allows users to use space for Elastic IP addresses and VPCs.

Type: String

Valid Values: `ec2 | global-services`

Required: No

**description**

The description of the IPAM pool.

Type: String

Required: No

**ipamArn**

The ARN of the IPAM.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamPoolArn**

The Amazon Resource Name (ARN) of the IPAM pool.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamPoolId**

The ID of the IPAM pool.

Type: String

Required: No

**ipamRegion**

The AWS Region of the IPAM pool.

Type: String

Required: No

**ipamScopeArn**

The ARN of the scope of the IPAM pool.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamScopeType**

In IPAM, a scope is the highest-level container within IPAM. An IPAM contains two default scopes. Each scope represents the IP space for a single network. The private scope is intended for all private IP address space. The public scope is intended for all public IP address space. Scopes enable you to reuse IP addresses across multiple unconnected networks without causing IP address overlap or conflict.

Type: String

Valid Values: `public | private`

Required: No

**locale**

The locale of the IPAM pool.

The locale for the pool should be one of the following:

- An AWS Region where you want this IPAM pool to be available for allocations.
- The network border group for an AWS Local Zone where you want this IPAM pool to be available for allocations (supported Local Zones). This option is only available for IPAM IPv4 pools in the public scope.

If you choose an AWS Region for locale that has not been configured as an operating Region for the IPAM, you'll get an error.

Type: String

Required: No

**ownerId**

The AWS account ID of the owner of the IPAM pool.

Type: String

Required: No

**poolDepth**

The depth of pools in your IPAM pool. The pool depth quota is 10. For more information, see Quotas in IPAM in the *Amazon VPC IPAM User Guide*.

Type: Integer

Required: No

**publicIpSource**

The IP address source for pools in the public scope. Only used for provisioning IP address CIDRs to pools in the public scope. Default is `BYOIP`. For more information, see Create IPv6 pools in the *Amazon VPC IPAM User Guide*. By default, you can add only one Amazon-provided IPv6 CIDR block to a top-level IPv6 pool. For information on increasing the default limit, see Quotas for your IPAM in the *Amazon VPC IPAM User Guide*.

Type: String

Valid Values: `amazon | byoip`

Required: No

**publiclyAdvertisable**

Determines if a pool is publicly advertisable. This option is not available for pools with AddressFamily set to `ipv4`.

Type: Boolean

Required: No

**sourceIpamPoolId**

The ID of the source IPAM pool. You can use this option to create an IPAM pool within an existing source pool.

Type: String

Required: No

**sourceResource**

The resource used to provision CIDRs to a resource planning pool.

Type: IpamPoolSourceResource object

Required: No

**state**

The state of the IPAM pool.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | modify-in-progress | modify-complete | modify-failed | delete-in-progress | delete-complete | delete-failed | isolate-in-progress | isolate-complete | restore-in-progress`

Required: No

**stateMessage**

The state message.

Type: String

Required: No

**TagSet.N**

The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPoolAllocation

In IPAM, an allocation is a CIDR assignment from an IPAM pool to another IPAM pool or to a resource.

## Contents

**cidr**

The CIDR for the allocation. A CIDR is a representation of an IP address and its associated network mask (or netmask) and refers to a range of IP addresses. An IPv4 CIDR example is `10.24.34.0/23`. An IPv6 CIDR example is `2001:DB8::/32`.

Type: String

Required: No

**description**

A description of the pool allocation.

Type: String

Required: No

**ipamPoolAllocationId**

The ID of an allocation.

Type: String

Required: No

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceOwner**

The owner of the resource.

Type: String

Required: No

**resourceRegion**

The AWS Region of the resource.

Type: String

Required: No

**resourceType**

The type of the resource.

Type: String

Valid Values: `ipam-pool | vpc | ec2-public-ipv4-pool | custom | subnet | eip | anycast-ip-list`

Required: No

**TagSet.N**

The tags for the IPAM pool allocation.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPoolCidr

A CIDR provisioned to an IPAM pool.

## Contents

**cidr**

The CIDR provisioned to the IPAM pool. A CIDR is a representation of an IP address and its associated network mask (or netmask) and refers to a range of IP addresses. An IPv4 CIDR example is `10.24.34.0/23`. An IPv6 CIDR example is `2001:DB8::/32`.

Type: String

Required: No

**failureReason**

Details related to why an IPAM pool CIDR failed to be provisioned.

Type: IpamPoolCidrFailureReason object

Required: No

**ipamPoolCidrId**

The IPAM pool CIDR ID.

Type: String

Required: No

**netmaskLength**

The netmask length of the CIDR you'd like to provision to a pool. Can be used for provisioning Amazon-provided IPv6 CIDRs to top-level pools and for provisioning CIDRs to pools with source pools. Cannot be used to provision BYOIP CIDRs to top-level pools. "NetmaskLength" or "Cidr" is required.

Type: Integer

Required: No

**state**

The state of the CIDR.

Type: String

Valid Values: `pending-provision | provisioned | failed-provision | pending-deprovision | deprovisioned | failed-deprovision | pending-import | failed-import`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPoolCidrFailureReason

Details related to why an IPAM pool CIDR failed to be provisioned.

## Contents

**code**

An error code related to why an IPAM pool CIDR failed to be provisioned.

Type: String

Valid Values: `cidr-not-available | limit-exceeded`

Required: No

**message**

A message related to why an IPAM pool CIDR failed to be provisioned.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPoolSourceResource

The resource used to provision CIDRs to a resource planning pool.

## Contents

**resourceId**

The source resource ID.

Type: String

Required: No

**resourceOwner**

The source resource owner.

Type: String

Required: No

**resourceRegion**

The source resource Region.

Type: String

Required: No

**resourceType**

The source resource type.

Type: String

Valid Values: vpc

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPoolSourceResourceRequest

The resource used to provision CIDRs to a resource planning pool.

## Contents

**ResourceId**

The source resource ID.

Type: String

Required: No

**ResourceOwner**

The source resource owner.

Type: String

Required: No

**ResourceRegion**

The source resource Region.

Type: String

Required: No

**ResourceType**

The source resource type.

Type: String

Valid Values: vpc

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPrefixListResolver

Describes an IPAM prefix list resolver.

An IPAM prefix list resolver is a component that manages the synchronization between IPAM's CIDR selection rules and customer-managed prefix lists. It automates connectivity configurations by selecting CIDRs from IPAM's database based on your business logic and synchronizing them with prefix lists used in resources such as VPC route tables and security groups.

## Contents

**addressFamily**

The address family (IPv4 or IPv6) for the IPAM prefix list resolver.

Type: String

Valid Values: `ipv4 | ipv6`

Required: No

**description**

The description of the IPAM prefix list resolver.

Type: String

Required: No

**ipamArn**

The Amazon Resource Name (ARN) of the IPAM associated with this resolver.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamPrefixListResolverArn**

The Amazon Resource Name (ARN) of the IPAM prefix list resolver.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamPrefixListResolverId**

The ID of the IPAM prefix list resolver.

Type: String

Required: No

**ipamRegion**

The AWS Region where the associated IPAM is located.

Type: String

Required: No

**lastVersionCreationStatus**

The status for the last time a version was created.

Each version is a snapshot of what CIDRs matched your rules at that moment in time. The version number increments every time the CIDR list changes due to infrastructure changes.

Type: String

Valid Values: `pending | success | failure`

Required: No

**lastVersionCreationStatusMessage**

The status message for the last time a version was created.

Each version is a snapshot of what CIDRs matched your rules at that moment in time. The version number increments every time the CIDR list changes due to infrastructure changes.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the IPAM prefix list resolver.

Type: String

Required: No

**state**

The current state of the IPAM prefix list resolver. Valid values include `create-in-progress`, `create-complete`, `create-failed`, `modify-in-progress`, `modify-complete`, `modify-failed`, `delete-in-progress`, `delete-complete`, and `delete-failed`.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | modify-in-progress | modify-complete | modify-failed | delete-in-progress | delete-complete | delete-failed | isolate-in-progress | isolate-complete | restore-in-progress`

Required: No

**TagSet.N**

The tags assigned to the IPAM prefix list resolver.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPrefixListResolverRule

Describes a CIDR selection rule.

CIDR selection rules define the business logic for selecting CIDRs from IPAM. If a CIDR matches any of the rules, it will be included. If a rule has multiple conditions, the CIDR has to match every condition of that rule. You can create a prefix list resolver without any CIDR selection rules, but it will generate empty versions (containing no CIDRs) until you add rules.

## Contents

**ConditionSet.N**

The conditions that determine which CIDRs are selected by this rule. Conditions specify criteria such as resource type, tags, account IDs, and Regions.

Type: Array of IpamPrefixListResolverRuleCondition objects

Required: No

**ipamScopeId**

The ID of the IPAM scope from which to select CIDRs. This determines whether to select from public or private IP address space.

Type: String

Required: No

**resourceType**

For rules of type `ipam-resource-cidr`, this is the resource type.

Type: String

Valid Values: `vpc | subnet | eip | public-ipv4-pool | ipv6-pool | eni | anycast-ip-list`

Required: No

**ruleType**

The type of CIDR selection rule. Valid values include `include` for selecting CIDRs that match the conditions, and `exclude` for excluding CIDRs that match the conditions.

Type: String

Valid Values: `static-cidr | ipam-resource-cidr | ipam-pool-cidr`

Required: No

**staticCidr**

A fixed list of CIDRs that do not change (like a manual list replicated across Regions).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPrefixListResolverRuleCondition

Describes a condition within a CIDR selection rule. Conditions define the criteria for selecting CIDRs from IPAM's database based on resource attributes.

CIDR selection rules define the business logic for selecting CIDRs from IPAM. If a CIDR matches any of the rules, it will be included. If a rule has multiple conditions, the CIDR has to match every condition of that rule. You can create a prefix list resolver without any CIDR selection rules, but it will generate empty versions (containing no CIDRs) until you add rules.

There are three rule types. Only 2 of the 3 rule types support conditions - **IPAM pool CIDR** and **Scope resource CIDR**. **Static CIDR** rules cannot have conditions.

- **Static CIDR**: A fixed list of CIDRs that do not change (like a manual list replicated across Regions)
- **IPAM pool CIDR**: CIDRs from specific IPAM pools (like all CIDRs from your IPAM production pool)

  If you choose this option, choose the following:
  - **IPAM scope**: Select the IPAM scope to search for resources
  - **Conditions:**
    - **Property**
      - **IPAM pool ID**: Select an IPAM pool that contains the resources
      - **CIDR** (like 10.24.34.0/23)
    - **Operation**: Equals/Not equals
    - **Value**: The value on which to match the condition
- **Scope resource CIDR**: CIDRs from AWS resources like VPCs, subnets, EIPs within an IPAM scope

  If you choose this option, choose the following:
  - **IPAM scope**: Select the IPAM scope to search for resources
  - **Resource type**: Select a resource, like a VPC or subnet.
  - **Conditions**:
    - **Property**:
      - Resource ID: The unique ID of a resource (like vpc-1234567890abcdef0)
      - Resource owner (like 111122223333)
      - Resource region (like us-east-1)
      - Resource tag (like key: name, value: dev-vpc-1)

- CIDR (like 10.24.34.0/23)
- **Operation**: Equals/Not equals
- **Value**: The value on which to match the condition

## Contents

**cidr**

A CIDR block to match against. This condition selects CIDRs that fall within or match the specified CIDR range.

Type: String

Required: No

**ipamPoolId**

The ID of the IPAM pool to match against. This condition selects CIDRs that belong to the specified IPAM pool.

Type: String

Required: No

**operation**

The operation to perform when evaluating this condition. Valid values include `equals`, `not-equals`, `contains`, and `not-contains`.

Type: String

Valid Values: `equals | not-equals | subnet-of`

Required: No

**resourceId**

The ID of the AWS resource to match against. This condition selects CIDRs associated with the specified resource.

Type: String

Required: No

**resourceOwner**

The AWS account ID that owns the resources to match against. This condition selects CIDRs from resources owned by the specified account.

Type: String

Required: No

**resourceRegion**

The AWS Region where the resources are located. This condition selects CIDRs from resources in the specified Region.

Type: String

Required: No

**resourceTag**

A tag key-value pair to match against. This condition selects CIDRs from resources that have the specified tag.

Type: IpamResourceTag object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPrefixListResolverRuleConditionRequest

Describes a condition used when creating or modifying resolver rules.

CIDR selection rules define the business logic for selecting CIDRs from IPAM. If a CIDR matches any of the rules, it will be included. If a rule has multiple conditions, the CIDR has to match every condition of that rule. You can create a prefix list resolver without any CIDR selection rules, but it will generate empty versions (containing no CIDRs) until you add rules.

There are three rule types. Only 2 of the 3 rule types support conditions - **IPAM pool CIDR** and **Scope resource CIDR**. **Static CIDR** rules cannot have conditions.

- **Static CIDR**: A fixed list of CIDRs that do not change (like a manual list replicated across Regions)
- **IPAM pool CIDR**: CIDRs from specific IPAM pools (like all CIDRs from your IPAM production pool)

  If you choose this option, choose the following:
  - **IPAM scope**: Select the IPAM scope to search for resources
  - **Conditions:**
    - **Property**
      - **IPAM pool ID**: Select an IPAM pool that contains the resources
      - **CIDR** (like 10.24.34.0/23)
    - **Operation**: Equals/Not equals
    - **Value**: The value on which to match the condition
- **Scope resource CIDR**: CIDRs from AWS resources like VPCs, subnets, EIPs within an IPAM scope

  If you choose this option, choose the following:
  - **IPAM scope**: Select the IPAM scope to search for resources
  - **Resource type**: Select a resource, like a VPC or subnet.
  - **Conditions**:
    - **Property**:
      - Resource ID: The unique ID of a resource (like vpc-1234567890abcdef0)
      - Resource owner (like 111122223333)
      - Resource region (like us-east-1)
      - Resource tag (like key: name, value: dev-vpc-1)
      - CIDR (like 10.24.34.0/23)

- **Operation**: Equals/Not equals
- **Value**: The value on which to match the condition

## Contents

**Operation**

The operation to perform when evaluating this condition.

Type: String

Valid Values: `equals | not-equals | subnet-of`

Required: Yes

**Cidr**

A CIDR block to match against. This condition selects CIDRs that fall within or match the specified CIDR range.

Type: String

Required: No

**IpamPoolId**

The ID of the IPAM pool to match against. This condition selects CIDRs that belong to the specified IPAM pool.

Type: String

Required: No

**ResourceId**

The ID of the AWS resource to match against. This condition selects CIDRs associated with the specified resource.

Type: String

Required: No

**ResourceOwner**

The AWS account ID that owns the resources to match against. This condition selects CIDRs from resources owned by the specified account.

Type: String

Required: No

**ResourceRegion**

The AWS Region where the resources are located. This condition selects CIDRs from resources in the specified Region.

Type: String

Required: No

**ResourceTag**

A tag key-value pair to match against. This condition selects CIDRs from resources that have the specified tag.

Type: RequestIpamResourceTag object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPrefixListResolverRuleRequest

Describes a CIDR selection rule to include in a request. This is used when creating or modifying resolver rules.

CIDR selection rules define the business logic for selecting CIDRs from IPAM. If a CIDR matches any of the rules, it will be included. If a rule has multiple conditions, the CIDR has to match every condition of that rule. You can create a prefix list resolver without any CIDR selection rules, but it will generate empty versions (containing no CIDRs) until you add rules.

There are three rule types. Only 2 of the 3 rule types support conditions - **IPAM pool CIDR** and **Scope resource CIDR**. **Static CIDR** rules cannot have conditions.

- **Static CIDR**: A fixed list of CIDRs that do not change (like a manual list replicated across Regions)
- **IPAM pool CIDR**: CIDRs from specific IPAM pools (like all CIDRs from your IPAM production pool)

  If you choose this option, choose the following:
  - **IPAM scope**: Select the IPAM scope to search for resources
  - **Conditions:**
    - **Property**
      - **IPAM pool ID**: Select an IPAM pool that contains the resources
      - **CIDR** (like 10.24.34.0/23)
    - **Operation**: Equals/Not equals
    - **Value**: The value on which to match the condition
- **Scope resource CIDR**: CIDRs from AWS resources like VPCs, subnets, EIPs within an IPAM scope

  If you choose this option, choose the following:
  - **IPAM scope**: Select the IPAM scope to search for resources
  - **Resource type**: Select a resource, like a VPC or subnet.
  - **Conditions**:
    - **Property**:
      - Resource ID: The unique ID of a resource (like vpc-1234567890abcdef0)
      - Resource owner (like 111122223333)
      - Resource region (like us-east-1)
      - Resource tag (like key: name, value: dev-vpc-1)

- CIDR (like 10.24.34.0/23)
- **Operation**: Equals/Not equals
- **Value**: The value on which to match the condition

## Contents

**RuleType**

The type of CIDR selection rule. Valid values include `include` for selecting CIDRs that match the conditions, and `exclude` for excluding CIDRs that match the conditions.

Type: String

Valid Values: `static-cidr | ipam-resource-cidr | ipam-pool-cidr`

Required: Yes

**Condition.N**

The conditions that determine which CIDRs are selected by this rule. Conditions specify criteria such as resource type, tags, account IDs, and Regions.

Type: Array of IpamPrefixListResolverRuleConditionRequest objects

Required: No

**IpamScopeId**

The ID of the IPAM scope from which to select CIDRs. This determines whether to select from public or private IP address space.

Type: String

Required: No

**ResourceType**

For rules of type `ipam-resource-cidr`, this is the resource type.

Type: String

Valid Values: `vpc | subnet | eip | public-ipv4-pool | ipv6-pool | eni | anycast-ip-list`

Required: No

**StaticCidr**

A fixed list of CIDRs that do not change (like a manual list replicated across Regions).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPrefixListResolverTarget

Describes an IPAM prefix list resolver target.

An IPAM prefix list resolver target is an association between a specific customer-managed prefix list and an IPAM prefix list resolver. The target enables the resolver to synchronize CIDRs selected by its rules into the specified prefix list, which can then be referenced in AWS resources.

## Contents

**desiredVersion**

The desired version of the prefix list that this target should synchronize with.

Type: Long

Required: No

**ipamPrefixListResolverId**

The ID of the IPAM prefix list resolver associated with this target.

Type: String

Required: No

**ipamPrefixListResolverTargetArn**

The Amazon Resource Name (ARN) of the IPAM prefix list resolver target.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamPrefixListResolverTargetId**

The ID of the IPAM prefix list resolver target.

Type: String

Required: No

**lastSyncedVersion**

The version of the prefix list that was last successfully synchronized by this target.

Type: Long

Required: No

**ownerId**

The ID of the AWS account that owns the IPAM prefix list resolver target.

Type: String

Required: No

**prefixListId**

The ID of the managed prefix list associated with this target.

Type: String

Required: No

**prefixListRegion**

The AWS Region where the prefix list associated with this target is located.

Type: String

Required: No

**state**

The current state of the IPAM prefix list resolver target. Valid values include `create-in-progress`, `create-complete`, `create-failed`, `modify-in-progress`, `modify-complete`, `modify-failed`, `delete-in-progress`, `delete-complete`, and `delete-failed`.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | modify-in-progress | modify-complete | modify-failed | sync-in-progress | sync-complete | sync-failed | delete-in-progress | delete-complete | delete-failed | isolate-in-progress | isolate-complete | restore-in-progress`

Required: No

**stateMessage**

A message describing the current state of the IPAM prefix list resolver target, including any error information.

Type: String

Required: No

**TagSet.N**

The tags assigned to the IPAM prefix list resolver target.

Type: Array of Tag objects

Required: No

**trackLatestVersion**

Indicates whether this target automatically tracks the latest version of the prefix list.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPrefixListResolverVersion

Describes a version of an IPAM prefix list resolver.

Each version is a snapshot of what CIDRs matched your rules at that moment in time. The version number increments every time the CIDR list changes due to infrastructure changes.

**Version example:**

**Initial State (Version 1)**

Production environment:

- vpc-prod-web (10.1.0.0/16) - tagged env=prod
- vpc-prod-db (10.2.0.0/16) - tagged env=prod

Resolver rule: Include all VPCs tagged env=prod

**Version 1 CIDRs:** 10.1.0.0/16, 10.2.0.0/16

**Infrastructure Change (Version 2)**

New VPC added:

- vpc-prod-api (10.3.0.0/16) - tagged env=prod

IPAM automatically detects the change and creates a new version.

**Version 2 CIDRs:** 10.1.0.0/16, 10.2.0.0/16, 10.3.0.0/16

## Contents

**version**

The version number of the IPAM prefix list resolver.

Each version is a snapshot of what CIDRs matched your rules at that moment in time. The version number increments every time the CIDR list changes due to infrastructure changes.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPrefixListResolverVersionEntry

Describes a CIDR entry in a specific version of an IPAM prefix list resolver. This represents a CIDR that was selected and synchronized at a particular point in time.

## Contents

**cidr**

The CIDR block that was selected and synchronized in this resolver version.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPublicAddressSecurityGroup

The security group that the resource with the public IP address is in.

## Contents

**groupId**

The security group's ID.

Type: String

Required: No

**groupName**

The security group's name.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPublicAddressTag

A tag for a public IP address discovered by IPAM.

## Contents

**key**

The tag's key.

Type: String

Required: No

**value**

The tag's value.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamPublicAddressTags

Tags for a public IP address discovered by IPAM.

## Contents

**EipTagSet.N**

Tags for an Elastic IP address.

Type: Array of IpamPublicAddressTag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamResourceCidr

The CIDR for an IPAM resource.

## Contents

**availabilityZoneId**

The Availability Zone ID.

Type: String

Required: No

**complianceStatus**

The compliance status of the IPAM resource. For more information on compliance statuses, see Monitor CIDR usage by resource in the *Amazon VPC IPAM User Guide*.

Type: String

Valid Values: `compliant | noncompliant | unmanaged | ignored`

Required: No

**ipamId**

The IPAM ID for an IPAM resource.

Type: String

Required: No

**ipamPoolId**

The pool ID for an IPAM resource.

Type: String

Required: No

**ipamScopeId**

The scope ID for an IPAM resource.

Type: String

Required: No

**ipUsage**

The percentage of IP address space in use. To convert the decimal to a percentage, multiply the decimal by 100. Note the following:

- For resources that are VPCs, this is the percentage of IP address space in the VPC that's taken up by subnet CIDRs.
- For resources that are subnets, if the subnet has an IPv4 CIDR provisioned to it, this is the percentage of IPv4 address space in the subnet that's in use. If the subnet has an IPv6 CIDR provisioned to it, the percentage of IPv6 address space in use is not represented. The percentage of IPv6 address space in use cannot currently be calculated.
- For resources that are public IPv4 pools, this is the percentage of IP address space in the pool that's been allocated to Elastic IP addresses (EIPs).

Type: Double

Required: No

**managementState**

The management state of the resource. For more information about management states, see Monitor CIDR usage by resource in the *Amazon VPC IPAM User Guide*.

Type: String

Valid Values: `managed | unmanaged | ignored`

Required: No

**overlapStatus**

The overlap status of an IPAM resource. The overlap status tells you if the CIDR for a resource overlaps with another CIDR in the scope. For more information on overlap statuses, see Monitor CIDR usage by resource in the *Amazon VPC IPAM User Guide*.

Type: String

Valid Values: `overlapping | nonoverlapping | ignored`

Required: No

**resourceCidr**

The CIDR for an IPAM resource.

Type: String

Required: No

**resourceId**

The ID of an IPAM resource.

Type: String

Required: No

**resourceName**

The name of an IPAM resource.

Type: String

Required: No

**resourceOwnerId**

The AWS account number of the owner of an IPAM resource.

Type: String

Required: No

**resourceRegion**

The AWS Region for an IPAM resource.

Type: String

Required: No

**ResourceTagSet.N**

The tags for an IPAM resource.

Type: Array of IpamResourceTag objects

Required: No

**resourceType**

The type of IPAM resource.

Type: String

Valid Values: `vpc | subnet | eip | public-ipv4-pool | ipv6-pool | eni | anycast-ip-list`

Required: No

**vpcId**

The ID of a VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamResourceDiscovery

A resource discovery is an IPAM component that enables IPAM to manage and monitor resources that belong to the owning account.

## Contents

**description**

The resource discovery description.

Type: String

Required: No

**ipamResourceDiscoveryArn**

The resource discovery Amazon Resource Name (ARN).

Type: String

Required: No

**ipamResourceDiscoveryId**

The resource discovery ID.

Type: String

Required: No

**ipamResourceDiscoveryRegion**

The resource discovery Region.

Type: String

Required: No

**isDefault**

Defines if the resource discovery is the default. The default resource discovery is the resource discovery automatically created when you create an IPAM.

Type: Boolean

Required: No

**OperatingRegionSet.N**

The operating Regions for the resource discovery. Operating Regions are AWS Regions where the IPAM is allowed to manage IP address CIDRs. IPAM only discovers and monitors resources in the AWS Regions you select as operating Regions.

Type: Array of IpamOperatingRegion objects

Required: No

**OrganizationalUnitExclusionSet.N**

If your IPAM is integrated with AWS Organizations and you add an organizational unit (OU) exclusion, IPAM will not manage the IP addresses in accounts in that OU exclusion.

Type: Array of IpamOrganizationalUnitExclusion objects

Required: No

**ownerId**

The ID of the owner.

Type: String

Required: No

**state**

The lifecycle state of the resource discovery.

- `create-in-progress` - Resource discovery is being created.
- `create-complete` - Resource discovery creation is complete.
- `create-failed` - Resource discovery creation has failed.
- `modify-in-progress` - Resource discovery is being modified.
- `modify-complete` - Resource discovery modification is complete.
- `modify-failed` - Resource discovery modification has failed.
- `delete-in-progress` - Resource discovery is being deleted.
- `delete-complete` - Resource discovery deletion is complete.
- `delete-failed` - Resource discovery deletion has failed.

- `isolate-in-progress` - AWS account that created the resource discovery has been removed and the resource discovery is being isolated.
- `isolate-complete` - Resource discovery isolation is complete.
- `restore-in-progress` - AWS account that created the resource discovery and was isolated has been restored.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | modify-in-progress | modify-complete | modify-failed | delete-in-progress | delete-complete | delete-failed | isolate-in-progress | isolate-complete | restore-in-progress`

Required: No

**TagSet.N**

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamResourceDiscoveryAssociation

An IPAM resource discovery association. An associated resource discovery is a resource discovery that has been associated with an IPAM. IPAM aggregates the resource CIDRs discovered by the associated resource discovery.

## Contents

**ipamArn**

The IPAM ARN.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamId**

The IPAM ID.

Type: String

Required: No

**ipamRegion**

The IPAM home Region.

Type: String

Required: No

**ipamResourceDiscoveryAssociationArn**

The resource discovery association Amazon Resource Name (ARN).

Type: String

Required: No

**ipamResourceDiscoveryAssociationId**

The resource discovery association ID.

Type: String

Required: No

**ipamResourceDiscoveryId**

The resource discovery ID.

Type: String

Required: No

**isDefault**

Defines if the resource discovery is the default. When you create an IPAM, a default resource discovery is created for your IPAM and it's associated with your IPAM.

Type: Boolean

Required: No

**ownerId**

The AWS account ID of the resource discovery owner.

Type: String

Required: No

**resourceDiscoveryStatus**

The resource discovery status.

- `active` - Connection or permissions required to read the results of the resource discovery are intact.
- `not-found` - Connection or permissions required to read the results of the resource discovery are broken. This may happen if the owner of the resource discovery stopped sharing it or deleted the resource discovery. Verify the resource discovery still exists and the AWS RAM resource share is still intact.

Type: String

Valid Values: `active | not-found`

Required: No

**state**

The lifecycle state of the association when you associate or disassociate a resource discovery.

- `associate-in-progress` - Resource discovery is being associated.
- `associate-complete` - Resource discovery association is complete.
- `associate-failed` - Resource discovery association has failed.
- `disassociate-in-progress` - Resource discovery is being disassociated.
- `disassociate-complete` - Resource discovery disassociation is complete.
- `disassociate-failed` - Resource discovery disassociation has failed.
- `isolate-in-progress` - AWS account that created the resource discovery association has been removed and the resource discovery association is being isolated.
- `isolate-complete` - Resource discovery isolation is complete.
- `restore-in-progress` - Resource discovery is being restored.

Type: String

Valid Values: `associate-in-progress | associate-complete | associate-failed | disassociate-in-progress | disassociate-complete | disassociate-failed | isolate-in-progress | isolate-complete | restore-in-progress`

Required: No

**TagSet.N**

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# IpamResourceTag

The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

## Contents

**key**

The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: String

Required: No

**value**

The value of the tag.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamScope

In IPAM, a scope is the highest-level container within IPAM. An IPAM contains two default scopes. Each scope represents the IP space for a single network. The private scope is intended for all private IP address space. The public scope is intended for all public IP address space. Scopes enable you to reuse IP addresses across multiple unconnected networks without causing IP address overlap or conflict.

For more information, see How IPAM works in the *Amazon VPC IPAM User Guide*.

## Contents

**description**

The description of the scope.

Type: String

Required: No

**externalAuthorityConfiguration**

The external authority configuration for this IPAM scope, if configured.

The configuration that links an Amazon VPC IPAM scope to an external authority system. It specifies the type of external system and the external resource identifier that identifies your account or instance in that system.

In IPAM, an external authority is a third-party IP address management system that provides CIDR blocks when you provision address space for top-level IPAM pools. This allows you to use your existing IP management system to control which address ranges are allocated to AWS while using Amazon VPC IPAM to manage subnets within those ranges.

Type: IpamScopeExternalAuthorityConfiguration object

Required: No

**ipamArn**

The ARN of the IPAM.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamRegion**

The AWS Region of the IPAM scope.

Type: String

Required: No

**ipamScopeArn**

The Amazon Resource Name (ARN) of the scope.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ipamScopeId**

The ID of the scope.

Type: String

Required: No

**ipamScopeType**

The type of the scope.

Type: String

Valid Values: `public | private`

Required: No

**isDefault**

Defines if the scope is the default scope or not.

Type: Boolean

Required: No

**ownerId**

The AWS account ID of the owner of the scope.

Type: String

Required: No

**poolCount**

The number of pools in the scope.

Type: Integer

Required: No

**state**

The state of the IPAM scope.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | modify-in-progress | modify-complete | modify-failed | delete-in-progress | delete-complete | delete-failed | isolate-in-progress | isolate-complete | restore-in-progress`

Required: No

**TagSet.N**

The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpamScopeExternalAuthorityConfiguration

The configuration that links an Amazon VPC IPAM scope to an external authority system. It specifies the type of external system and the external resource identifier that identifies your account or instance in that system.

In IPAM, an external authority is a third-party IP address management system that provides CIDR blocks when you provision address space for top-level IPAM pools. This allows you to use your existing IP management system to control which address ranges are allocated to AWS while using Amazon VPC IPAM to manage subnets within those ranges.

## Contents

**externalResourceIdentifier**

The identifier for the external resource managing this scope. For Infoblox integrations, this is the Infoblox resource identifier in the format `<version>.identity.account.<entity_realm>.<entity_id>`.

Type: String

Required: No

**type**

The type of external authority managing this scope. Currently supports `Infoblox` for integration with Infoblox Universal DDI.

Type: String

Valid Values: `infoblox`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpPermission

Describes the permissions for a security group rule.

## Contents

**FromPort** (request), **fromPort** (response)

If the protocol is TCP or UDP, this is the start of the port range. If the protocol is ICMP or ICMPv6, this is the ICMP type or -1 (all ICMP types).

Type: Integer

Required: No

**Groups.N**

The security group and AWS account ID pairs.

Type: Array of UserIdGroupPair objects

Required: No

**IpProtocol** (request), **ipProtocol** (response)

The IP protocol name (`tcp`, `udp`, `icmp`, `icmpv6`) or number (see Protocol Numbers).

Use `-1` to specify all protocols. When authorizing security group rules, specifying `-1` or a protocol number other than `tcp`, `udp`, `icmp`, or `icmpv6` allows traffic on all ports, regardless of any port range you specify. For `tcp`, `udp`, and `icmp`, you must specify a port range. For `icmpv6`, the port range is optional; if you omit the port range, traffic for all types and codes is allowed.

Type: String

Required: No

**IpRanges.N**

The IPv4 address ranges.

Type: Array of IpRange objects

Required: No

**Ipv6Ranges.N**

The IPv6 address ranges.

Type: Array of Ipv6Range objects

Required: No

**PrefixListIds.N**

The prefix list IDs.

Type: Array of PrefixListId objects

Required: No

**ToPort** (request), **toPort** (response)

If the protocol is TCP or UDP, this is the end of the port range. If the protocol is ICMP or ICMPv6, this is the ICMP code or -1 (all ICMP codes). If the start port is -1 (all ICMP types), then the end port must be -1 (all ICMP codes).

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# IpRange

Describes an IPv4 address range.

## Contents

**CidrIp** (request), **cidrIp** (response)

The IPv4 address range. You can either specify a CIDR block or a source security group, not both. To specify a single IPv4 address, use the /32 prefix length.

> **Note**
>
> AWS canonicalizes IPv4 and IPv6 CIDRs. For example, if you specify 100.68.0.18/18 for the CIDR block, AWS canonicalizes the CIDR block to 100.68.0.0/18. Any subsequent DescribeSecurityGroups and DescribeSecurityGroupRules calls will return the canonicalized form of the CIDR block. Additionally, if you attempt to add another rule with the non-canonical form of the CIDR (such as 100.68.0.18/18) and there is already a rule for the canonicalized form of the CIDR block (such as 100.68.0.0/18), the API throws an duplicate rule error.

Type: String

Required: No

**Description** (request), **description** (response)

A description for the security group rule that references this IPv4 address range.

Constraints: Up to 255 characters in length. Allowed characters are a-z, A-Z, 0-9, spaces, and ._-:/()#,@[]+=&;{}!$*

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ipv4PrefixSpecification

Describes an IPv4 prefix.

## Contents

### ipv4Prefix

The IPv4 prefix. For information, see Assigning prefixes to network interfaces in the *Amazon EC2 User Guide*.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ipv4PrefixSpecificationRequest

Describes the IPv4 prefix option for a network interface.

## Contents

**Ipv4Prefix** (request), **Ipv4Prefix** (response)

The IPv4 prefix. For information, see Assigning prefixes to network interfaces in the *Amazon EC2 User Guide*.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ipv4PrefixSpecificationResponse

Information about the IPv4 delegated prefixes assigned to a network interface.

## Contents

**ipv4Prefix**

The IPv4 delegated prefixes assigned to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ipv6CidrAssociation

Describes an IPv6 CIDR block association.

## Contents

**associatedResource**

The resource that's associated with the IPv6 CIDR block.

Type: String

Required: No

**ipv6Cidr**

The IPv6 CIDR block.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ipv6CidrBlock

Describes an IPv6 CIDR block.

## Contents

### ipv6CidrBlock

The IPv6 CIDR block.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ipv6Pool

Describes an IPv6 address pool.

## Contents

**description**

The description for the address pool.

Type: String

Required: No

**PoolCidrBlockSet.N**

The CIDR blocks for the address pool.

Type: Array of PoolCidrBlock objects

Required: No

**poolId**

The ID of the address pool.

Type: String

Required: No

**TagSet.N**

Any tags for the address pool.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ipv6PrefixSpecification

Describes the IPv6 prefix.

## Contents

### ipv6Prefix

The IPv6 prefix.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ipv6PrefixSpecificationRequest

Describes the IPv6 prefix option for a network interface.

## Contents

**Ipv6Prefix** (request), **Ipv6Prefix** (response)

The IPv6 prefix.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ipv6PrefixSpecificationResponse

Information about the IPv6 delegated prefixes assigned to a network interface.

## Contents

**ipv6Prefix**

The IPv6 delegated prefixes assigned to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Ipv6Range

Describes an IPv6 address range.

## Contents

**CidrIpv6** (request), **cidrIpv6** (response)

The IPv6 address range. You can either specify a CIDR block or a source security group, not both. To specify a single IPv6 address, use the /128 prefix length.

> **Note**
>
> AWS canonicalizes IPv4 and IPv6 CIDRs. For example, if you specify 100.68.0.18/18 for the CIDR block, AWS canonicalizes the CIDR block to 100.68.0.0/18. Any subsequent DescribeSecurityGroups and DescribeSecurityGroupRules calls will return the canonicalized form of the CIDR block. Additionally, if you attempt to add another rule with the non-canonical form of the CIDR (such as 100.68.0.18/18) and there is already a rule for the canonicalized form of the CIDR block (such as 100.68.0.0/18), the API throws an duplicate rule error.

Type: String

Required: No

**Description** (request), **description** (response)

A description for the security group rule that references this IPv6 address range.

Constraints: Up to 255 characters in length. Allowed characters are a-z, A-Z, 0-9, spaces, and ._-:/()#,@[]+=&;{}!$*

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# KeyPairInfo

Describes a key pair.

## Contents

**createTime**

If you used Amazon EC2 to create the key pair, this is the date and time when the key was created, in ISO 8601 date-time format, in the UTC time zone.

If you imported an existing key pair to Amazon EC2, this is the date and time the key was imported, in ISO 8601 date-time format, in the UTC time zone.

Type: Timestamp

Required: No

**keyFingerprint**

If you used CreateKeyPair to create the key pair:

- For RSA key pairs, the key fingerprint is the SHA-1 digest of the DER encoded private key.
- For ED25519 key pairs, the key fingerprint is the base64-encoded SHA-256 digest, which is the default for OpenSSH, starting with OpenSSH 6.8.

If you used ImportKeyPair to provide AWS the public key:

- For RSA key pairs, the key fingerprint is the MD5 public key fingerprint as specified in section 4 of RFC4716.
- For ED25519 key pairs, the key fingerprint is the base64-encoded SHA-256 digest, which is the default for OpenSSH, starting with OpenSSH 6.8.

Type: String

Required: No

**keyName**

The name of the key pair.

Type: String

Required: No

**keyPairId**

The ID of the key pair.

Type: String

Required: No

**keyType**

The type of key pair.

Type: String

Valid Values: `rsa | ed25519`

Required: No

**publicKey**

The public key material.

Type: String

Required: No

**TagSet.N**

Any tags applied to the key pair.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LastError

The last error that occurred for a VPC endpoint.

## Contents

**code**

The error code for the VPC endpoint error.

Type: String

Required: No

**message**

The error message for the VPC endpoint error.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchPermission

Describes a launch permission.

## Contents

**Group** (request), **group** (response)

The name of the group.

Type: String

Valid Values: `all`

Required: No

**OrganizationalUnitArn** (request), **organizationalUnitArn** (response)

The Amazon Resource Name (ARN) of an organizational unit (OU).

Type: String

Required: No

**OrganizationArn** (request), **organizationArn** (response)

The Amazon Resource Name (ARN) of an organization.

Type: String

Required: No

**UserId** (request), **userId** (response)

The AWS account ID.

Constraints: Up to 10 000 account IDs can be specified in a single request.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchPermissionModifications

Describes a launch permission modification.

## Contents

**Add.N**

The AWS account ID, organization ARN, or OU ARN to add to the list of launch permissions for the AMI.

Type: Array of LaunchPermission objects

Required: No

**Remove.N**

The AWS account ID, organization ARN, or OU ARN to remove from the list of launch permissions for the AMI.

Type: Array of LaunchPermission objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchSpecification

Describes the launch specification for an instance.

## Contents

**addressingType**

Deprecated.

Type: String

Required: No

**BlockDeviceMapping.N**

The block device mapping entries.

Type: Array of BlockDeviceMapping objects

Required: No

**ebsOptimized**

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Default: `false`

Type: Boolean

Required: No

**GroupSet.N**

The IDs of the security groups.

Type: Array of GroupIdentifier objects

Required: No

**iamInstanceProfile**

The IAM instance profile.

Type: IamInstanceProfileSpecification object

Required: No

**imageId**

The ID of the AMI.

Type: String

Required: No

**instanceType**

The instance type. Only one instance type can be specified.

Type: String

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge |

dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large |

m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge |

x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge |

r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-

flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl

```
| c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large |
g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge
| r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge |
r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge
| r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-
flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge |
r8i-flex.12xlarge | r8i-flex.16xlarge
```

Required: No

**kernelId**

The ID of the kernel.

Type: String

Required: No

**keyName**

The name of the key pair.

Type: String

Required: No

**monitoring**

Describes the monitoring of an instance.

Type: RunInstancesMonitoringEnabled object

Required: No

**NetworkInterfaceSet.N**

The network interfaces. If you specify a network interface, you must specify subnet IDs and security group IDs using the network interface.

Type: Array of InstanceNetworkInterfaceSpecification objects

Required: No

**placement**

The placement information for the instance.

Type: SpotPlacement object

Required: No

**ramdiskId**

The ID of the RAM disk.

Type: String

Required: No

**subnetId**

The ID of the subnet in which to launch the instance.

Type: String

Required: No

**userData**

The base64-encoded user data that instances use when starting up. User data is limited to 16 KB.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplate

Describes a launch template.

## Contents

**createdBy**

The principal that created the launch template.

Type: String

Required: No

**createTime**

The time launch template was created.

Type: Timestamp

Required: No

**defaultVersionNumber**

The version number of the default version of the launch template.

Type: Long

Required: No

**latestVersionNumber**

The version number of the latest version of the launch template.

Type: Long

Required: No

**launchTemplateId**

The ID of the launch template.

Type: String

Required: No

**launchTemplateName**

The name of the launch template.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: `[a-zA-Z0-9\(\)\.\-/_]+`

Required: No

**operator**

The entity that manages the launch template.

Type: OperatorResponse object

Required: No

**TagSet.N**

The tags for the launch template.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateAndOverridesResponse

Describes a launch template and overrides.

## Contents

**launchTemplateSpecification**

The launch template.

Type: FleetLaunchTemplateSpecification object

Required: No

**overrides**

Any parameters that you specify override the same parameters in the launch template.

Type: FleetLaunchTemplateOverrides object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateBlockDeviceMapping

Describes a block device mapping.

## Contents

**deviceName**

The device name.

Type: String

Required: No

**ebs**

Information about the block device for an EBS volume.

Type: LaunchTemplateEbsBlockDevice object

Required: No

**noDevice**

To omit the device from the block device mapping, specify an empty string.

Type: String

Required: No

**virtualName**

The virtual device name (ephemeralN).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateBlockDeviceMappingRequest

Describes a block device mapping.

## Contents

**DeviceName**

The device name (for example, /dev/sdh or xvdh).

Type: String

Required: No

**Ebs**

Parameters used to automatically set up EBS volumes when the instance is launched.

Type: LaunchTemplateEbsBlockDeviceRequest object

Required: No

**NoDevice**

To omit the device from the block device mapping, specify an empty string.

Type: String

Required: No

**VirtualName**

The virtual device name (ephemeralN). Instance store volumes are numbered starting from 0. An instance type with 2 available instance store volumes can specify mappings for ephemeral0 and ephemeral1. The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateCapacityReservationSpecificationRequest

Describes an instance's Capacity Reservation targeting option. You can specify only one option at a time. Use the `CapacityReservationPreference` parameter to configure the instance to run in On-Demand capacity or to run in any `open` Capacity Reservation that has matching attributes (instance type, platform, Availability Zone). Use the `CapacityReservationTarget` parameter to explicitly target a specific Capacity Reservation or a Capacity Reservation group.

## Contents

**CapacityReservationPreference**

Indicates the instance's Capacity Reservation preferences. Possible preferences include:

- `capacity-reservations-only` - The instance will only run in a Capacity Reservation or Capacity Reservation group. If capacity isn't available, the instance will fail to launch.
- `open` - The instance can run in any `open` Capacity Reservation that has matching attributes (instance type, platform, Availability Zone, tenancy).
- `none` - The instance avoids running in a Capacity Reservation even if one is available. The instance runs in On-Demand capacity.

Type: String

Valid Values: `capacity-reservations-only | open | none`

Required: No

**CapacityReservationTarget**

Information about the target Capacity Reservation or Capacity Reservation group.

Type: CapacityReservationTarget object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateCapacityReservationSpecificationResponse

Information about the Capacity Reservation targeting option.

## Contents

**capacityReservationPreference**

Indicates the instance's Capacity Reservation preferences. Possible preferences include:

- open - The instance can run in any open Capacity Reservation that has matching attributes (instance type, platform, Availability Zone).
- none - The instance avoids running in a Capacity Reservation even if one is available. The instance runs in On-Demand capacity.

Type: String

Valid Values: `capacity-reservations-only | open | none`

Required: No

**capacityReservationTarget**

Information about the target Capacity Reservation or Capacity Reservation group.

Type: CapacityReservationTargetResponse object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateConfig

Describes a launch template and overrides.

## Contents

**LaunchTemplateSpecification** (request), **launchTemplateSpecification** (response)

The launch template to use. Make sure that the launch template does not contain the `NetworkInterfaceId` parameter because you can't specify a network interface ID in a Spot Fleet.

Type: FleetLaunchTemplateSpecification object

Required: No

**Overrides.N**

Any parameters that you specify override the same parameters in the launch template.

Type: Array of LaunchTemplateOverrides objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateCpuOptions

The CPU options for the instance.

## Contents

**amdSevSnp**

Indicates whether the instance is enabled for AMD SEV-SNP. For more information, see AMD SEV-SNP for Amazon EC2 instances.

Type: String

Valid Values: `enabled | disabled`

Required: No

**coreCount**

The number of CPU cores for the instance.

Type: Integer

Required: No

**nestedVirtualization**

Indicates whether the instance is enabled for nested virtualization.

Type: String

Valid Values: `enabled | disabled`

Required: No

**threadsPerCore**

The number of threads per CPU core.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateCpuOptionsRequest

The CPU options for the instance. Both the core count and threads per core must be specified in the request.

## Contents

**AmdSevSnp**

Indicates whether to enable the instance for AMD SEV-SNP. AMD SEV-SNP is supported with M6a, R6a, and C6a instance types only. For more information, see AMD SEV-SNP for Amazon EC2 instances.

Type: String

Valid Values: `enabled | disabled`

Required: No

**CoreCount**

The number of CPU cores for the instance.

Type: Integer

Required: No

**NestedVirtualization**

Indicates whether to enable the instance for nested virtualization. Nested virtualization is supported only on 8th generation Intel-based instance types (c8i, m8i, r8i, and their flex variants). When nested virtualization is enabled, Virtual Secure Mode (VSM) is automatically disabled for the instance.

Type: String

Valid Values: `enabled | disabled`

Required: No

**ThreadsPerCore**

The number of threads per CPU core. To disable multithreading for the instance, specify a value of 1. Otherwise, specify the default value of 2.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateEbsBlockDevice

Describes a block device for an EBS volume.

## Contents

**deleteOnTermination**

Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

Required: No

**ebsCardIndex**

The index of the EBS card. Some instance types support multiple EBS cards. The default EBS card index is 0.

Type: Integer

Required: No

**encrypted**

Indicates whether the EBS volume is encrypted.

Type: Boolean

Required: No

**iops**

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Required: No

**kmsKeyId**

Identifier (key ID, key alias, key ARN, or alias ARN) of the customer managed KMS key to use for EBS encryption.

Type: String

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

**throughput**

The throughput that the volume supports, in MiB/s.

Type: Integer

Required: No

**volumeInitializationRate**

The Amazon EBS Provisioned Rate for Volume Initialization (volume initialization rate) specified for the volume, in MiB/s. If no volume initialization rate was specified, the value is `null`.

Type: Integer

Required: No

**volumeSize**

The size of the volume, in GiB.

Type: Integer

Required: No

**volumeType**

The volume type.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateEbsBlockDeviceRequest

The parameters for a block device for an EBS volume.

## Contents

**DeleteOnTermination**

Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

Required: No

**EbsCardIndex**

The index of the EBS card. Some instance types support multiple EBS cards. The default EBS card index is 0.

Type: Integer

Required: No

**Encrypted**

Indicates whether the EBS volume is encrypted. Encrypted volumes can only be attached to instances that support Amazon EBS encryption. If you are creating a volume from a snapshot, you can't specify an encryption value.

Type: Boolean

Required: No

**Iops**

The number of I/O operations per second (IOPS). For `gp3`, `io1`, and `io2` volumes, this represents the number of IOPS that are provisioned for the volume. For `gp2` volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting.

The following are the supported values for each volume type:

- `gp3`: 3,000 - 80,000 IOPS
- `io1`: 100 - 64,000 IOPS

- io2: 100 - 256,000 IOPS

  For io2 volumes, you can achieve up to 256,000 IOPS on instances built on the Nitro System. On other instances, you can achieve performance up to 32,000 IOPS.

  This parameter is supported for io1, io2, and gp3 volumes only.

  Type: Integer

  Required: No

**KmsKeyId**

Identifier (key ID, key alias, key ARN, or alias ARN) of the customer managed KMS key to use for EBS encryption.

Type: String

Required: No

**SnapshotId**

The ID of the snapshot.

Type: String

Required: No

**Throughput**

The throughput to provision for a gp3 volume, with a maximum of 2,000 MiB/s.

Valid Range: Minimum value of 125. Maximum value of 2,000.

Type: Integer

Required: No

**VolumeInitializationRate**

Specifies the Amazon EBS Provisioned Rate for Volume Initialization (volume initialization rate), in MiB/s, at which to download the snapshot blocks from Amazon S3 to the volume. This is also known as *volume initialization*. Specifying a volume initialization rate ensures that the volume is initialized at a predictable and consistent rate after creation.

This parameter is supported only for volumes created from snapshots. Omit this parameter if:

- You want to create the volume using fast snapshot restore. You must specify a snapshot that is enabled for fast snapshot restore. In this case, the volume is fully initialized at creation.

  > **Note**
  >
  > If you specify a snapshot that is enabled for fast snapshot restore and a volume initialization rate, the volume will be initialized at the specified rate instead of fast snapshot restore.

- You want to create a volume that is initialized at the default rate.

For more information, see Initialize Amazon EBS volumes in the *Amazon EC2 User Guide*.

Valid range: 100 - 300 MiB/s

Type: Integer

Required: No

**VolumeSize**

The size of the volume, in GiBs. You must specify either a snapshot ID or a volume size. The following are the supported volumes sizes for each volume type:

- `gp2`: 1 - 16,384 GiB
- `gp3`: 1 - 65,536 GiB
- `io1`: 4 - 16,384 GiB
- `io2`: 4 - 65,536 GiB
- `st1` and `sc1`: 125 - 16,384 GiB
- `standard`: 1 - 1024 GiB

Type: Integer

Required: No

**VolumeType**

The volume type. For more information, see Amazon EBS volume types in the *Amazon EBS User Guide*.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateElasticInferenceAccelerator

> **Note**
>
> Amazon Elastic Inference is no longer available.

Describes an elastic inference accelerator.

## Contents

**Type**

The type of elastic inference accelerator. The possible values are eia1.medium, eia1.large, and eia1.xlarge.

Type: String

Required: Yes

**Count**

The number of elastic inference accelerators to attach to the instance.

Type: Integer

Valid Range: Minimum value of 1.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateElasticInferenceAcceleratorResponse

> **Note**
>
> Amazon Elastic Inference is no longer available.

Describes an elastic inference accelerator.

## Contents

**count**

The number of elastic inference accelerators to attach to the instance.

Type: Integer

Required: No

**type**

The type of elastic inference accelerator. The possible values are eia1.medium, eia1.large, and eia1.xlarge.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateEnaSrdSpecification

ENA Express uses AWS Scalable Reliable Datagram (SRD) technology to increase the maximum bandwidth used per stream and minimize tail latency of network traffic between EC2 instances. With ENA Express, you can communicate between two EC2 instances in the same subnet within the same account, or in different accounts. Both sending and receiving instances must have ENA Express enabled.

To improve the reliability of network packet delivery, ENA Express reorders network packets on the receiving end by default. However, some UDP-based applications are designed to handle network packets that are out of order to reduce the overhead for packet delivery at the network layer. When ENA Express is enabled, you can specify whether UDP network traffic uses it.

## Contents

**enaSrdEnabled**

Indicates whether ENA Express is enabled for the network interface.

Type: Boolean

Required: No

**enaSrdUdpSpecification**

Configures ENA Express for UDP network traffic.

Type: LaunchTemplateEnaSrdUdpSpecification object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateEnaSrdUdpSpecification

ENA Express is compatible with both TCP and UDP transport protocols. When it's enabled, TCP traffic automatically uses it. However, some UDP-based applications are designed to handle network packets that are out of order, without a need for retransmission, such as live video broadcasting or other near-real-time applications. For UDP traffic, you can specify whether to use ENA Express, based on your application environment needs.

## Contents

**enaSrdUdpEnabled**

Indicates whether UDP traffic to and from the instance uses ENA Express. To specify this setting, you must first enable ENA Express.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateEnclaveOptions

Indicates whether the instance is enabled for AWS Nitro Enclaves.

## Contents

**enabled**

If this parameter is set to `true`, the instance is enabled for AWS Nitro Enclaves; otherwise, it is not enabled for AWS Nitro Enclaves.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateEnclaveOptionsRequest

Indicates whether the instance is enabled for AWS Nitro Enclaves. For more information, see What is Nitro Enclaves? in the *AWS Nitro Enclaves User Guide*.

## Contents

### Enabled

To enable the instance for AWS Nitro Enclaves, set this parameter to `true`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateHibernationOptions

Indicates whether an instance is configured for hibernation.

## Contents

**configured**

If this parameter is set to `true`, the instance is enabled for hibernation; otherwise, it is not enabled for hibernation.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateHibernationOptionsRequest

Indicates whether the instance is configured for hibernation. This parameter is valid only if the instance meets the hibernation prerequisites.

## Contents

### Configured

If you set this parameter to `true`, the instance is enabled for hibernation.

Default: `false`

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateIamInstanceProfileSpecification

Describes an IAM instance profile.

## Contents

**arn**

The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

**name**

The name of the instance profile.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateIamInstanceProfileSpecificationRequest

An IAM instance profile.

## Contents

**Arn**

The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

**Name**

The name of the instance profile.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateInstanceMaintenanceOptions

The maintenance options of your instance.

## Contents

**autoRecovery**

Disables the automatic recovery behavior of your instance or sets it to default.

Type: String

Valid Values: `default | disabled`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateInstanceMaintenanceOptionsRequest

The maintenance options of your instance.

## Contents

**AutoRecovery**

Disables the automatic recovery behavior of your instance or sets it to default. For more information, see Simplified automatic recovery.

Type: String

Valid Values: `default | disabled`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateInstanceMarketOptions

The market (purchasing) option for the instances.

## Contents

**marketType**

The market type.

Type: String

Valid Values: `spot | capacity-block | interruptible-capacity-reservation`

Required: No

**spotOptions**

The options for Spot Instances.

Type: LaunchTemplateSpotMarketOptions object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateInstanceMarketOptionsRequest

The market (purchasing) option for the instances.

## Contents

**MarketType**

The market type.

Type: String

Valid Values: `spot | capacity-block | interruptible-capacity-reservation`

Required: No

**SpotOptions**

The options for Spot Instances.

Type: LaunchTemplateSpotMarketOptionsRequest object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateInstanceMetadataOptions

The metadata options for the instance. For more information, see Use instance metadata to manage your EC2 instance in the *Amazon EC2 User Guide*.

## Contents

**httpEndpoint**

Enables or disables the HTTP metadata endpoint on your instances. If the parameter is not specified, the default state is `enabled`.

> **Note**
>
> If you specify a value of `disabled`, you will not be able to access your instance metadata.

Type: String

Valid Values: `disabled | enabled`

Required: No

**httpProtocolIpv6**

Enables or disables the IPv6 endpoint for the instance metadata service.

Default: `disabled`

Type: String

Valid Values: `disabled | enabled`

Required: No

**httpPutResponseHopLimit**

The desired HTTP PUT response hop limit for instance metadata requests. The larger the number, the further instance metadata requests can travel.

Possible values: Integers from 1 to 64

Type: Integer

Required: No

**httpTokens**

Indicates whether IMDSv2 is required.

- `optional` - IMDSv2 is optional. You can choose whether to send a session token in your instance metadata retrieval requests. If you retrieve IAM role credentials without a session token, you receive the IMDSv1 role credentials. If you retrieve IAM role credentials using a valid session token, you receive the IMDSv2 role credentials.
- `required` - IMDSv2 is required. You must send a session token in your instance metadata retrieval requests. With this option, retrieving the IAM role credentials always returns IMDSv2 credentials; IMDSv1 credentials are not available.

Type: String

Valid Values: `optional | required`

Required: No

**instanceMetadataTags**

Set to `enabled` to allow access to instance tags from the instance metadata. Set to `disabled` to turn off access to instance tags from the instance metadata. For more information, see View tags for your EC2 instances using instance metadata.

Default: `disabled`

Type: String

Valid Values: `disabled | enabled`

Required: No

**state**

The state of the metadata option changes.

`pending` - The metadata options are being updated and the instance is not ready to process metadata traffic with the new selection.

`applied` - The metadata options have been successfully applied on the instance.

Type: String

Valid Values: `pending | applied`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateInstanceMetadataOptionsRequest

The metadata options for the instance. For more information, see Use instance metadata to manage your EC2 instance in the *Amazon EC2 User Guide*.

## Contents

**HttpEndpoint**

Enables or disables the HTTP metadata endpoint on your instances. If the parameter is not specified, the default state is `enabled`.

> **Note**
>
> If you specify a value of `disabled`, you will not be able to access your instance metadata.

Type: String

Valid Values: `disabled | enabled`

Required: No

**HttpProtocolIpv6**

Enables or disables the IPv6 endpoint for the instance metadata service.

Default: `disabled`

Type: String

Valid Values: `disabled | enabled`

Required: No

**HttpPutResponseHopLimit**

The desired HTTP PUT response hop limit for instance metadata requests. The larger the number, the further instance metadata requests can travel.

Default: 1

Possible values: Integers from 1 to 64

Type: Integer

Required: No

**HttpTokens**

Indicates whether IMDSv2 is required.

- `optional` - IMDSv2 is optional. You can choose whether to send a session token in your instance metadata retrieval requests. If you retrieve IAM role credentials without a session token, you receive the IMDSv1 role credentials. If you retrieve IAM role credentials using a valid session token, you receive the IMDSv2 role credentials.
- `required` - IMDSv2 is required. You must send a session token in your instance metadata retrieval requests. With this option, retrieving the IAM role credentials always returns IMDSv2 credentials; IMDSv1 credentials are not available.

Default: If the value of `ImdsSupport` for the Amazon Machine Image (AMI) for your instance is `v2.0`, the default is `required`.

Type: String

Valid Values: `optional | required`

Required: No

**InstanceMetadataTags**

Set to `enabled` to allow access to instance tags from the instance metadata. Set to `disabled` to turn off access to instance tags from the instance metadata. For more information, see View tags for your EC2 instances using instance metadata.

Default: `disabled`

Type: String

Valid Values: `disabled | enabled`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateInstanceNetworkInterfaceSpecification

Describes a network interface.

## Contents

**associateCarrierIpAddress**

Indicates whether to associate a Carrier IP address with eth0 for a new network interface.

Use this option when you launch an instance in a Wavelength Zone and want to associate a Carrier IP address with the network interface. For more information about Carrier IP addresses, see Carrier IP address in the *AWS Wavelength Developer Guide*.

Type: Boolean

Required: No

**associatePublicIpAddress**

Indicates whether to associate a public IPv4 address with eth0 for a new network interface.

AWS charges for all public IPv4 addresses, including public IPv4 addresses associated with running instances and Elastic IP addresses. For more information, see the *Public IPv4 Address* tab on the Amazon VPC pricing page.

Type: Boolean

Required: No

**connectionTrackingSpecification**

A security group connection tracking specification that enables you to set the timeout for connection tracking on an Elastic network interface. For more information, see Idle connection tracking timeout in the *Amazon EC2 User Guide*.

Type: ConnectionTrackingSpecification object

Required: No

**deleteOnTermination**

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

**description**

A description for the network interface.

Type: String

Required: No

**deviceIndex**

The device index for the network interface attachment.

Type: Integer

Required: No

**enaQueueCount**

The number of ENA queues created with the instance.

Type: Integer

Required: No

**enaSrdSpecification**

Contains the ENA Express settings for instances launched from your launch template.

Type: LaunchTemplateEnaSrdSpecification object

Required: No

**GroupSet.N**

The IDs of one or more security groups.

Type: Array of strings

Required: No

**interfaceType**

The type of network interface.

Type: String

Required: No

**ipv4PrefixCount**

The number of IPv4 prefixes that AWS automatically assigned to the network interface.

Type: Integer

Required: No

**Ipv4PrefixSet.N**

One or more IPv4 prefixes assigned to the network interface.

Type: Array of Ipv4PrefixSpecificationResponse objects

Required: No

**ipv6AddressCount**

The number of IPv6 addresses for the network interface.

Type: Integer

Required: No

**Ipv6AddressesSet.N**

The IPv6 addresses for the network interface.

Type: Array of InstanceIpv6Address objects

Required: No

**ipv6PrefixCount**

The number of IPv6 prefixes that AWS automatically assigned to the network interface.

Type: Integer

Required: No

**Ipv6PrefixSet.N**

One or more IPv6 prefixes assigned to the network interface.

Type: Array of Ipv6PrefixSpecificationResponse objects

Required: No

**networkCardIndex**

The index of the network card.

Type: Integer

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**primaryIpv6**

The primary IPv6 address of the network interface. When you enable an IPv6 GUA address to be a primary IPv6, the first IPv6 GUA will be made the primary IPv6 address until the instance is terminated or the network interface is detached. For more information about primary IPv6 addresses, see RunInstances.

Type: Boolean

Required: No

**privateIpAddress**

The primary private IPv4 address of the network interface.

Type: String

Required: No

**PrivateIpAddressesSet.N**

One or more private IPv4 addresses.

Type: Array of PrivateIpAddressSpecification objects

Required: No

**secondaryPrivateIpAddressCount**

The number of secondary private IPv4 addresses for the network interface.

Type: Integer

Required: No

**subnetId**

The ID of the subnet for the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateInstanceNetworkInterfaceSpecificationRequest

The parameters for a network interface.

## Contents

**AssociateCarrierIpAddress**

Associates a Carrier IP address with eth0 for a new network interface.

Use this option when you launch an instance in a Wavelength Zone and want to associate a Carrier IP address with the network interface. For more information about Carrier IP addresses, see Carrier IP addresses in the *AWS Wavelength Developer Guide*.

Type: Boolean

Required: No

**AssociatePublicIpAddress**

Associates a public IPv4 address with eth0 for a new network interface.

AWS charges for all public IPv4 addresses, including public IPv4 addresses associated with running instances and Elastic IP addresses. For more information, see the *Public IPv4 Address* tab on the Amazon VPC pricing page.

Type: Boolean

Required: No

**ConnectionTrackingSpecification**

A security group connection tracking specification that enables you to set the timeout for connection tracking on an Elastic network interface. For more information, see Idle connection tracking timeout in the *Amazon EC2 User Guide*.

Type: ConnectionTrackingSpecificationRequest object

Required: No

**DeleteOnTermination**

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

**Description**

A description for the network interface.

Type: String

Required: No

**DeviceIndex**

The device index for the network interface attachment. The primary network interface has a device index of 0. Each network interface is of type `interface`, you must specify a device index. If you create a launch template that includes secondary network interfaces but not a primary network interface, then you must add a primary network interface as a launch parameter when you launch an instance from the template.

Type: Integer

Required: No

**EnaQueueCount**

The number of ENA queues to be created with the instance.

Type: Integer

Required: No

**EnaSrdSpecification**

Configure ENA Express settings for your launch template.

Type: EnaSrdSpecificationRequest object

Required: No

**InterfaceType**

The type of network interface. To create an Elastic Fabric Adapter (EFA), specify `efa` or `efa`. For more information, see Elastic Fabric Adapter for AI/ML and HPC workloads on Amazon EC2 in the *Amazon EC2 User Guide*.

If you are not creating an EFA, specify `interface` or omit this parameter.

If you specify `efa-only`, do not assign any IP addresses to the network interface. EFA-only network interfaces do not support IP addresses.

Valid values: `interface` | `efa` | `efa-only`

Type: String

Required: No

**Ipv4Prefix.N**

One or more IPv4 prefixes to be assigned to the network interface. You cannot use this option if you use the `Ipv4PrefixCount` option.

Type: Array of Ipv4PrefixSpecificationRequest objects

Required: No

**Ipv4PrefixCount**

The number of IPv4 prefixes to be automatically assigned to the network interface. You cannot use this option if you use the `Ipv4Prefix` option.

Type: Integer

Required: No

**Ipv6AddressCount**

The number of IPv6 addresses to assign to a network interface. Amazon EC2 automatically selects the IPv6 addresses from the subnet range. You can't use this option if specifying specific IPv6 addresses.

Type: Integer

Required: No

**Ipv6Addresses.N**

One or more specific IPv6 addresses from the IPv6 CIDR block range of your subnet. You can't use this option if you're specifying a number of IPv6 addresses.

Type: Array of InstanceIpv6AddressRequest objects

Required: No

**Ipv6Prefix.N**

One or more IPv6 prefixes to be assigned to the network interface. You cannot use this option if you use the `Ipv6PrefixCount` option.

Type: Array of Ipv6PrefixSpecificationRequest objects

Required: No

**Ipv6PrefixCount**

The number of IPv6 prefixes to be automatically assigned to the network interface. You cannot use this option if you use the `Ipv6Prefix` option.

Type: Integer

Required: No

**NetworkCardIndex**

The index of the network card. Some instance types support multiple network cards. The primary network interface must be assigned to network card index 0. The default is network card index 0.

Type: Integer

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**PrimaryIpv6**

The primary IPv6 address of the network interface. When you enable an IPv6 GUA address to be a primary IPv6, the first IPv6 GUA will be made the primary IPv6 address until the instance is terminated or the network interface is detached. For more information about primary IPv6 addresses, see RunInstances.

Type: Boolean

Required: No

**PrivateIpAddress**

The primary private IPv4 address of the network interface.

Type: String

Required: No

**PrivateIpAddresses.N**

One or more private IPv4 addresses.

Type: Array of PrivateIpAddressSpecification objects

Required: No

**SecondaryPrivateIpAddressCount**

The number of secondary private IPv4 addresses to assign to a network interface.

Type: Integer

Required: No

**SecurityGroupId.N**

The IDs of one or more security groups.

Type: Array of strings

Required: No

**SubnetId**

The ID of the subnet for the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateInstanceSecondaryInterfaceSpecification

Describes a secondary interface specification in a launch template.

## Contents

**deleteOnTermination**

Indicates whether the secondary interface is deleted when the instance is terminated.

The only supported value for this field is `true`.

Type: Boolean

Required: No

**deviceIndex**

The device index for the secondary interface attachment.

Type: Integer

Required: No

**interfaceType**

The type of secondary interface.

Type: String

Valid Values: `secondary`

Required: No

**networkCardIndex**

The index of the network card.

Type: Integer

Required: No

**privateIpAddressCount**

The number of private IPv4 addresses to assign to the secondary interface.

If you specify `privateIpAddressCount` you cannot specify `privateIpAddresses`

Type: Integer

Required: No

**PrivateIpAddressesSet.N**

The private IPv4 addresses to assign to the secondary interface.

If you specify `privateIpAddresses` you cannot specify `privateIpAddressCount`

Type: Array of SecondaryInterfacePrivateIpAddressSpecification objects

Required: No

**secondarySubnetId**

The ID of the secondary subnet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateInstanceSecondaryInterfaceSpecificationRequest

Describes a secondary interface specification for a launch template request.

## Contents

**DeleteOnTermination**

Indicates whether the secondary interface is deleted when the instance is terminated.

The only supported value for this field is `true`.

Type: Boolean

Required: No

**DeviceIndex**

The device index for the secondary interface attachment.

Type: Integer

Required: No

**InterfaceType**

The type of secondary interface.

Type: String

Valid Values: `secondary`

Required: No

**NetworkCardIndex**

The index of the network card.

Type: Integer

Required: No

**PrivateIpAddress.N**

The private IPv4 addresses to assign to the secondary interface.

Type: Array of SecondaryInterfacePrivateIpAddressSpecificationRequest objects

Required: No

**PrivateIpAddressCount**

The number of private IPv4 addresses to assign to the secondary interface.

Type: Integer

Required: No

**SecondarySubnetId**

The ID of the secondary subnet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateLicenseConfiguration

Describes a license configuration.

## Contents

**licenseConfigurationArn**

The Amazon Resource Name (ARN) of the license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateLicenseConfigurationRequest

Describes a license configuration.

## Contents

**LicenseConfigurationArn**

The Amazon Resource Name (ARN) of the license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateNetworkPerformanceOptions

With network performance options, you can adjust your bandwidth preferences to meet the needs of the workload that runs on your instance at launch.

## Contents

### bandwidthWeighting

When you configure network bandwidth weighting, you can boost baseline bandwidth for either networking or EBS by up to 25%. The total available baseline bandwidth for your instance remains the same. The default option uses the standard bandwidth configuration for your instance type.

Type: String

Valid Values: `default | vpc-1 | ebs-1`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateNetworkPerformanceOptionsRequest

When you configure network performance options in your launch template, your instance is geared for performance improvements based on the workload that it runs as soon as it's available.

## Contents

**BandwidthWeighting**

Specify the bandwidth weighting option to boost the associated type of baseline bandwidth, as follows:

default

This option uses the standard bandwidth configuration for your instance type.

vpc-1

This option boosts your networking baseline bandwidth and reduces your EBS baseline bandwidth.

ebs-1

This option boosts your EBS baseline bandwidth and reduces your networking baseline bandwidth.

Type: String

Valid Values: `default | vpc-1 | ebs-1`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateOverrides

Describes overrides for a launch template.

## Contents

**AvailabilityZone** (request), **availabilityZone** (response)

The Availability Zone in which to launch the instances. For example, `us-east-2a`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: String

Required: No

**AvailabilityZoneId** (request), **availabilityZoneId** (response)

The ID of the Availability Zone in which to launch the instances. For example, `use2-az1`.

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: String

Required: No

**InstanceRequirements** (request), **instanceRequirements** (response)

The instance requirements. When you specify instance requirements, Amazon EC2 will identify instance types with the provided requirements, and then use your On-Demand and Spot allocation strategies to launch instances from these instance types, in the same way as when you specify a list of instance types.

> **Note**
>
> If you specify `InstanceRequirements`, you can't specify `InstanceType`.

Type: InstanceRequirements object

Required: No

**InstanceType** (request), **instanceType** (response)

The instance type.

Type: String

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge |

g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge

| r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge |

c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge |

p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge

| g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge

Required: No

**Priority** (request), **priority** (response)

The priority for the launch template override. The highest priority is launched first.

If `OnDemandAllocationStrategy` is set to `prioritized`, Spot Fleet uses priority to determine which launch template override to use first in fulfilling On-Demand capacity.

If the Spot `AllocationStrategy` is set to `capacityOptimizedPrioritized`, Spot Fleet uses priority on a best-effort basis to determine which launch template override to use in fulfilling Spot capacity, but optimizes for capacity first.

Valid values are whole numbers starting at `0`. The lower the number, the higher the priority. If no number is set, the launch template override has the lowest priority. You can set the same priority for different launch template overrides.

Type: Double

Required: No

**SpotPrice** (request), **spotPrice** (response)

The maximum price per unit hour that you are willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your instances will be interrupted more frequently than if you do not specify this parameter.

Type: String

Required: No

**SubnetId** (request), **subnetId** (response)

The ID of the subnet in which to launch the instances.

Type: String

Required: No

**WeightedCapacity** (request), **weightedCapacity** (response)

The number of units provided by the specified instance type. These are the same units that you chose to set the target capacity in terms of instances, or a performance characteristic such as vCPUs, memory, or I/O.

If the target capacity divided by this value is not a whole number, Amazon EC2 rounds the number of instances to the next whole number. If this value is not specified, the default is 1.

> **Note**
>
> When specifying weights, the price used in the `lowestPrice` and `priceCapacityOptimized` allocation strategies is per *unit* hour (where the instance price is divided by the specified weight). However, if all the specified weights are above the requested `TargetCapacity`, resulting in only 1 instance being launched, the price used is per *instance* hour.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplatePlacement

Describes the placement of an instance.

## Contents

**affinity**

The affinity setting for the instance on the Dedicated Host.

Type: String

Required: No

**availabilityZone**

The Availability Zone of the instance.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone of the instance.

Type: String

Required: No

**groupId**

The Group ID of the placement group. You must specify the Placement Group **Group ID** to launch an instance in a shared placement group.

Type: String

Required: No

**groupName**

The name of the placement group for the instance.

Type: String

Required: No

**hostId**

The ID of the Dedicated Host for the instance.

Type: String

Required: No

**hostResourceGroupArn**

The ARN of the host resource group in which to launch the instances.

Type: String

Required: No

**partitionNumber**

The number of the partition the instance should launch in. Valid only if the placement group strategy is set to `partition`.

Type: Integer

Required: No

**spreadDomain**

Reserved for future use.

Type: String

Required: No

**tenancy**

The tenancy of the instance. An instance with a tenancy of `dedicated` runs on single-tenant hardware.

Type: String

Valid Values: `default | dedicated | host`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplatePlacementRequest

Describes the placement of an instance.

## Contents

**Affinity**

The affinity setting for an instance on a Dedicated Host.

Type: String

Required: No

**AvailabilityZone**

The Availability Zone for the instance.

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both

Type: String

Required: No

**AvailabilityZoneId**

The ID of the Availability Zone for the instance.

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both

Type: String

Required: No

**GroupId**

The Group Id of a placement group. You must specify the Placement Group **Group Id** to launch an instance in a shared placement group.

Type: String

Required: No

**GroupName**

The name of the placement group for the instance.

Type: String

Required: No

**HostId**

The ID of the Dedicated Host for the instance.

Type: String

Required: No

**HostResourceGroupArn**

The ARN of the host resource group in which to launch the instances. If you specify a host resource group ARN, omit the **Tenancy** parameter or set it to `host`.

Type: String

Required: No

**PartitionNumber**

The number of the partition the instance should launch in. Valid only if the placement group strategy is set to `partition`.

Type: Integer

Required: No

**SpreadDomain**

Reserved for future use.

Type: String

Required: No

**Tenancy**

The tenancy of the instance. An instance with a tenancy of dedicated runs on single-tenant hardware.

Type: String

Valid Values: `default | dedicated | host`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplatePrivateDnsNameOptions

Describes the options for instance hostnames.

## Contents

**enableResourceNameDnsAAAARecord**

Indicates whether to respond to DNS queries for instance hostnames with DNS AAAA records.

Type: Boolean

Required: No

**enableResourceNameDnsARecord**

Indicates whether to respond to DNS queries for instance hostnames with DNS A records.

Type: Boolean

Required: No

**hostnameType**

The type of hostname to assign to an instance.

Type: String

Valid Values: `ip-name | resource-name`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplatePrivateDnsNameOptionsRequest

Describes the options for instance hostnames.

## Contents

**EnableResourceNameDnsAAAARecord**

Indicates whether to respond to DNS queries for instance hostnames with DNS AAAA records.

Type: Boolean

Required: No

**EnableResourceNameDnsARecord**

Indicates whether to respond to DNS queries for instance hostnames with DNS A records.

Type: Boolean

Required: No

**HostnameType**

The type of hostname for Amazon EC2 instances. For IPv4 only subnets, an instance DNS name must be based on the instance IPv4 address. For IPv6 native subnets, an instance DNS name must be based on the instance ID. For dual-stack subnets, you can specify whether DNS names use the instance IPv4 address or the instance ID.

Type: String

Valid Values: `ip-name | resource-name`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# LaunchTemplatesMonitoring

Describes the monitoring for the instance.

## Contents

**enabled**

Indicates whether detailed monitoring is enabled. Otherwise, basic monitoring is enabled.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplatesMonitoringRequest

Describes the monitoring for the instance.

## Contents

### Enabled

Specify `true` to enable detailed monitoring. Otherwise, basic monitoring is enabled.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateSpecification

Describes the launch template to use.

## Contents

**LaunchTemplateId**

The ID of the launch template.

You must specify either the launch template ID or the launch template name, but not both.

Type: String

Required: No

**LaunchTemplateName**

The name of the launch template.

You must specify either the launch template ID or the launch template name, but not both.

Type: String

Required: No

**Version**

The launch template version number, `$Latest`, or `$Default`.

A value of `$Latest` uses the latest version of the launch template.

A value of `$Default` uses the default version of the launch template.

Default: The default version of the launch template.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateSpotMarketOptions

The options for Spot Instances.

## Contents

**blockDurationMinutes**

The required duration for the Spot Instances (also known as Spot blocks), in minutes. This value must be a multiple of 60 (60, 120, 180, 240, 300, or 360).

Type: Integer

Required: No

**instanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted.

Type: String

Valid Values: `hibernate | stop | terminate`

Required: No

**maxPrice**

The maximum hourly price you're willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price. If you do specify this parameter, it must be more than USD $0.001. Specifying a value below USD $0.001 will result in an `InvalidParameterValue` error message when the launch template is used to launch an instance.

Type: String

Required: No

**spotInstanceType**

The Spot Instance request type.

Type: String

Valid Values: `one-time | persistent`

Required: No

**validUntil**

The end date of the request. For a one-time request, the request remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date and time is reached.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateSpotMarketOptionsRequest

The options for Spot Instances.

## Contents

**BlockDurationMinutes**

Deprecated.

Type: Integer

Required: No

**InstanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted. The default is `terminate`.

Type: String

Valid Values: `hibernate | stop | terminate`

Required: No

**MaxPrice**

The maximum hourly price you're willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price. If you do specify this parameter, it must be more than USD $0.001. Specifying a value below USD $0.001 will result in an `InvalidParameterValue` error message when the launch template is used to launch an instance.

> **Important**
>
> If you specify a maximum price, your Spot Instances will be interrupted more frequently than if you do not specify this parameter.

Type: String

Required: No

**SpotInstanceType**

The Spot Instance request type.

Type: String

Valid Values: `one-time | persistent`

Required: No

**ValidUntil**

The end date of the request, in UTC format (*YYYY-MM-DD*T*HH:MM:SS*Z). Supported only for persistent requests.

- For a persistent request, the request remains active until the `ValidUntil` date and time is reached. Otherwise, the request remains active until you cancel it.
- For a one-time request, `ValidUntil` is not supported. The request remains active until all instances launch or you cancel the request.

Default: 7 days from the current date

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateTagSpecification

The tags specification for the launch template.

## Contents

**resourceType**

The type of resource to tag.

Type: String

Valid Values: capacity-reservation | client-vpn-endpoint | customer-gateway | carrier-gateway | coip-pool | declarative-policies-report | dedicated-host | dhcp-options | egress-only-internet-gateway | elastic-ip | elastic-gpu | export-image-task | export-instance-task | fleet | fpga-image | host-reservation | image | image-usage-report | import-image-task | import-snapshot-task | instance | instance-event-window | internet-gateway | ipam | ipam-pool | ipam-scope | ipv4pool-ec2 | ipv6pool-ec2 | key-pair | launch-template | local-gateway | local-gateway-route-table | local-gateway-virtual-interface | local-gateway-virtual-interface-group | local-gateway-route-table-vpc-association | local-gateway-route-table-virtual-interface-group-association | natgateway | network-acl | network-interface | network-insights-analysis | network-insights-path | network-insights-access-scope | network-insights-access-scope-analysis | outpost-lag | placement-group | prefix-list | replace-root-volume-task | reserved-instances | route-table | security-group | security-group-rule | service-link-virtual-interface | snapshot | spot-fleet-request | spot-instances-request | subnet | subnet-cidr-reservation | traffic-mirror-filter | traffic-mirror-session | traffic-mirror-target | transit-gateway | transit-gateway-attachment | transit-gateway-connect-peer | transit-gateway-multicast-domain | transit-gateway-policy-table | transit-gateway-metering-policy | transit-gateway-route-table | transit-gateway-route-table-announcement | volume | vpc | vpc-endpoint | vpc-endpoint-connection | vpc-endpoint-service | vpc-endpoint-service-permission | vpc-peering-connection | vpn-connection | vpn-gateway | vpc-flow-log | capacity-reservation-fleet | traffic-mirror-filter-rule | vpc-endpoint-connection-device-type

`| verified-access-instance | verified-access-group | verified-access-endpoint | verified-access-policy | verified-access-trust-provider | vpn-connection-device-type | vpc-block-public-access-exclusion | vpc-encryption-control | route-server | route-server-endpoint | route-server-peer | ipam-resource-discovery | ipam-resource-discovery-association | instance-connect-endpoint | verified-access-endpoint-target | ipam-external-resource-verification-token | capacity-block | mac-modification-task | ipam-prefix-list-resolver | ipam-policy | ipam-prefix-list-resolver-target | secondary-interface | secondary-network | secondary-subnet | capacity-manager-data-export | vpn-concentrator | ipam-pool-allocation | capacity-reservation-cancellation-quote`

Required: No

**TagSet.N**

The tags for the resource.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateTagSpecificationRequest

The tags specification for the resources that are created during instance launch.

## Contents

**ResourceType**

The type of resource to tag.

Valid Values lists all resource types for Amazon EC2 that can be tagged. When you create a launch template, you can specify tags for the following resource types only: `instance` | `volume` | `network-interface` | `spot-instances-request`. If the instance does not include the resource type that you specify, the instance launch fails. For example, not all instance types include a volume.

To tag a resource after it has been created, see CreateTags.

Type: String

Valid Values: `capacity-reservation | client-vpn-endpoint | customer-gateway | carrier-gateway | coip-pool | declarative-policies-report | dedicated-host | dhcp-options | egress-only-internet-gateway | elastic-ip | elastic-gpu | export-image-task | export-instance-task | fleet | fpga-image | host-reservation | image | image-usage-report | import-image-task | import-snapshot-task | instance | instance-event-window | internet-gateway | ipam | ipam-pool | ipam-scope | ipv4pool-ec2 | ipv6pool-ec2 | key-pair | launch-template | local-gateway | local-gateway-route-table | local-gateway-virtual-interface | local-gateway-virtual-interface-group | local-gateway-route-table-vpc-association | local-gateway-route-table-virtual-interface-group-association | natgateway | network-acl | network-interface | network-insights-analysis | network-insights-path | network-insights-access-scope | network-insights-access-scope-analysis | outpost-lag | placement-group | prefix-list | replace-root-volume-task | reserved-instances | route-table | security-group | security-group-rule | service-link-virtual-interface | snapshot | spot-fleet-request | spot-instances-request | subnet | subnet-cidr-reservation | traffic-mirror-filter | traffic-mirror-session | traffic-mirror-target | transit-gateway | transit-gateway-`

`attachment | transit-gateway-connect-peer | transit-gateway-multicast-domain | transit-gateway-policy-table | transit-gateway-metering-policy | transit-gateway-route-table | transit-gateway-route-table-announcement | volume | vpc | vpc-endpoint | vpc-endpoint-connection | vpc-endpoint-service | vpc-endpoint-service-permission | vpc-peering-connection | vpn-connection | vpn-gateway | vpc-flow-log | capacity-reservation-fleet | traffic-mirror-filter-rule | vpc-endpoint-connection-device-type | verified-access-instance | verified-access-group | verified-access-endpoint | verified-access-policy | verified-access-trust-provider | vpn-connection-device-type | vpc-block-public-access-exclusion | vpc-encryption-control | route-server | route-server-endpoint | route-server-peer | ipam-resource-discovery | ipam-resource-discovery-association | instance-connect-endpoint | verified-access-endpoint-target | ipam-external-resource-verification-token | capacity-block | mac-modification-task | ipam-prefix-list-resolver | ipam-policy | ipam-prefix-list-resolver-target | secondary-interface | secondary-network | secondary-subnet | capacity-manager-data-export | vpn-concentrator | ipam-pool-allocation | capacity-reservation-cancellation-quote`

Required: No

**Tag.N**

The tags to apply to the resource.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LaunchTemplateVersion

Describes a launch template version.

## Contents

**createdBy**

The principal that created the version.

Type: String

Required: No

**createTime**

The time the version was created.

Type: Timestamp

Required: No

**defaultVersion**

Indicates whether the version is the default version.

Type: Boolean

Required: No

**launchTemplateData**

Information about the launch template.

Type: ResponseLaunchTemplateData object

Required: No

**launchTemplateId**

The ID of the launch template.

Type: String

Required: No

**launchTemplateName**

The name of the launch template.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: `[a-zA-Z0-9\(\)\.\-/_]+`

Required: No

**operator**

The entity that manages the launch template.

Type: OperatorResponse object

Required: No

**versionDescription**

The description for the version.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 255.

Required: No

**versionNumber**

The version number.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LicenseConfiguration

Describes a license configuration.

## Contents

**licenseConfigurationArn**

The Amazon Resource Name (ARN) of the license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LicenseConfigurationRequest

Describes a license configuration.

## Contents

**LicenseConfigurationArn**

The Amazon Resource Name (ARN) of the license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LoadBalancersConfig

Describes the Classic Load Balancers and target groups to attach to a Spot Fleet request.

## Contents

**ClassicLoadBalancersConfig** (request), **classicLoadBalancersConfig** (response)

The Classic Load Balancers.

Type: ClassicLoadBalancersConfig object

Required: No

**TargetGroupsConfig** (request), **targetGroupsConfig** (response)

The target groups.

Type: TargetGroupsConfig object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LoadPermission

Describes a load permission.

## Contents

**group**

The name of the group.

Type: String

Valid Values: `all`

Required: No

**userId**

The AWS account ID.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LoadPermissionModifications

Describes modifications to the load permissions of an Amazon FPGA image (AFI).

## Contents

**Add.N**

The load permissions to add.

Type: Array of LoadPermissionRequest objects

Required: No

**Remove.N**

The load permissions to remove.

Type: Array of LoadPermissionRequest objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LoadPermissionRequest

Describes a load permission.

## Contents

**Group**

The name of the group.

Type: String

Valid Values: `all`

Required: No

**UserId**

The AWS account ID.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LocalGateway

Describes a local gateway.

## Contents

**localGatewayId**

The ID of the local gateway.

Type: String

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the local gateway.

Type: String

Required: No

**state**

The state of the local gateway.

Type: String

Required: No

**TagSet.N**

The tags assigned to the local gateway.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LocalGatewayRoute

Describes a route for a local gateway route table.

## Contents

**coipPoolId**

The ID of the customer-owned address pool.

Type: String

Required: No

**destinationCidrBlock**

The CIDR block used for destination matches.

Type: String

Required: No

**destinationPrefixListId**

The ID of the prefix list.

Type: String

Required: No

**localGatewayRouteTableArn**

The Amazon Resource Name (ARN) of the local gateway route table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: No

**localGatewayVirtualInterfaceGroupId**

The ID of the virtual interface group.

Type: String

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the local gateway route.

Type: String

Required: No

**state**

The state of the route.

Type: String

Valid Values: `pending | active | blackhole | deleting | deleted`

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

**type**

The route type.

Type: String

Valid Values: `static | propagated`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LocalGatewayRouteTable

Describes a local gateway route table.

## Contents

**localGatewayId**

The ID of the local gateway.

Type: String

Required: No

**localGatewayRouteTableArn**

The Amazon Resource Name (ARN) of the local gateway route table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: No

**mode**

The mode of the local gateway route table.

Type: String

Valid Values: `direct-vpc-routing | coip`

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the local gateway route table.

Type: String

Required: No

**state**

The state of the local gateway route table.

Type: String

Required: No

**stateReason**

Information about the state change.

Type: StateReason object

Required: No

**TagSet.N**

The tags assigned to the local gateway route table.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LocalGatewayRouteTableVirtualInterfaceGroupAssociation

Describes an association between a local gateway route table and a virtual interface group.

## Contents

**localGatewayId**

The ID of the local gateway.

Type: String

Required: No

**localGatewayRouteTableArn**

The Amazon Resource Name (ARN) of the local gateway route table for the virtual interface group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: No

**localGatewayRouteTableVirtualInterfaceGroupAssociationId**

The ID of the association.

Type: String

Required: No

**localGatewayVirtualInterfaceGroupId**

The ID of the virtual interface group.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the local gateway virtual interface group association.

Type: String

Required: No

**state**

The state of the association.

Type: String

Required: No

**TagSet.N**

The tags assigned to the association.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LocalGatewayRouteTableVpcAssociation

Describes an association between a local gateway route table and a VPC.

## Contents

**localGatewayId**

The ID of the local gateway.

Type: String

Required: No

**localGatewayRouteTableArn**

The Amazon Resource Name (ARN) of the local gateway route table for the association.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: No

**localGatewayRouteTableVpcAssociationId**

The ID of the association.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the local gateway route table for the association.

Type: String

Required: No

**state**

The state of the association.

Type: String

Required: No

**TagSet.N**

The tags assigned to the association.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LocalGatewayVirtualInterface

Describes a local gateway virtual interface.

## Contents

**configurationState**

The current state of the local gateway virtual interface.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

**localAddress**

The local address.

Type: String

Required: No

**localBgpAsn**

The Border Gateway Protocol (BGP) Autonomous System Number (ASN) of the local gateway.

Type: Integer

Required: No

**localGatewayId**

The ID of the local gateway.

Type: String

Required: No

**localGatewayVirtualInterfaceArn**

The Amazon Resource Number (ARN) of the local gateway virtual interface.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**localGatewayVirtualInterfaceGroupId**

The ID of the local gateway virtual interface group.

Type: String

Required: No

**localGatewayVirtualInterfaceId**

The ID of the virtual interface.

Type: String

Required: No

**outpostLagId**

The Outpost LAG ID.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the local gateway virtual interface.

Type: String

Required: No

**peerAddress**

The peer address.

Type: String

Required: No

**peerBgpAsn**

The peer BGP ASN.

Type: Integer

Required: No

**peerBgpAsnExtended**

The extended 32-bit ASN of the BGP peer for use with larger ASN values.

Type: Long

Required: No

**TagSet.N**

The tags assigned to the virtual interface.

Type: Array of Tag objects

Required: No

**vlan**

The ID of the VLAN.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LocalGatewayVirtualInterfaceGroup

Describes a local gateway virtual interface group.

## Contents

**configurationState**

The current state of the local gateway virtual interface group.

Type: String

Valid Values: `pending | incomplete | available | deleting | deleted`

Required: No

**localBgpAsn**

The Autonomous System Number(ASN) for the local Border Gateway Protocol (BGP).

Type: Integer

Required: No

**localBgpAsnExtended**

The extended 32-bit ASN for the local BGP configuration.

Type: Long

Required: No

**localGatewayId**

The ID of the local gateway.

Type: String

Required: No

**localGatewayVirtualInterfaceGroupArn**

The Amazon Resource Number (ARN) of the local gateway virtual interface group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**localGatewayVirtualInterfaceGroupId**

The ID of the virtual interface group.

Type: String

Required: No

**LocalGatewayVirtualInterfaceIdSet.N**

The IDs of the virtual interfaces.

Type: Array of strings

Required: No

**ownerId**

The ID of the AWS account that owns the local gateway virtual interface group.

Type: String

Required: No

**TagSet.N**

The tags assigned to the virtual interface group.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# LockedSnapshotsInfo

Information about a locked snapshot.

## Contents

**coolOffPeriod**

The compliance mode cooling-off period, in hours.

Type: Integer

Required: No

**coolOffPeriodExpiresOn**

The date and time at which the compliance mode cooling-off period expires, in the UTC time zone (YYYY-MM-DDThh:mm:ss.sssZ).

Type: Timestamp

Required: No

**lockCreatedOn**

The date and time at which the snapshot was locked, in the UTC time zone (YYYY-MM-DDThh:mm:ss.sssZ).

Type: Timestamp

Required: No

**lockDuration**

The period of time for which the snapshot is locked, in days.

Type: Integer

Required: No

**lockDurationStartTime**

The date and time at which the lock duration started, in the UTC time zone (YYYY-MM-DDThh:mm:ss.sssZ).

If you lock a snapshot that is in the `pending` state, the lock duration starts only once the snapshot enters the `completed` state.

Type: Timestamp

Required: No

**lockExpiresOn**

The date and time at which the lock will expire, in the UTC time zone (`YYYY-MM-DDThh:mm:ss.sssZ`).

Type: Timestamp

Required: No

**lockState**

The state of the snapshot lock. Valid states include:

- `compliance-cooloff` - The snapshot has been locked in compliance mode but it is still within the cooling-off period. The snapshot can't be deleted, but it can be unlocked and the lock settings can be modified by users with appropriate permissions.
- `governance` - The snapshot is locked in governance mode. The snapshot can't be deleted, but it can be unlocked and the lock settings can be modified by users with appropriate permissions.
- `compliance` - The snapshot is locked in compliance mode and the cooling-off period has expired. The snapshot can't be unlocked or deleted. The lock duration can only be increased by users with appropriate permissions.
- `expired` - The snapshot was locked in compliance or governance mode but the lock duration has expired. The snapshot is not locked and can be deleted.

Type: String

Valid Values: `compliance | governance | compliance-cooloff | expired`

Required: No

**ownerId**

The account ID of the AWS account that owns the snapshot.

Type: String

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MacHost

Information about the EC2 Mac Dedicated Host.

## Contents

**hostId**

The EC2 Mac Dedicated Host ID.

Type: String

Required: No

**MacOSLatestSupportedVersionSet.N**

The latest macOS versions that the EC2 Mac Dedicated Host can launch without being upgraded.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MacModificationTask

Information about a System Integrity Protection (SIP) modification task or volume ownership delegation task for an Amazon EC2 Mac instance.

## Contents

**instanceId**

The ID of the Amazon EC2 Mac instance.

Type: String

Required: No

**macModificationTaskId**

The ID of task.

Type: String

Required: No

**macSystemIntegrityProtectionConfig**

[SIP modification tasks only] Information about the SIP configuration.

Type: MacSystemIntegrityProtectionConfiguration object

Required: No

**startTime**

The date and time the task was created, in the UTC timezone (`YYYY-MM-DDThh:mm:ss.sssZ`).

Type: Timestamp

Required: No

**TagSet.N**

The tags assigned to the task.

Type: Array of Tag objects

Required: No

**taskState**

The state of the task.

Type: String

Valid Values: `successful | failed | in-progress | pending`

Required: No

**taskType**

The type of task.

Type: String

Valid Values: `sip-modification | volume-ownership-delegation`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MacSystemIntegrityProtectionConfiguration

Describes the configuration for a System Integrity Protection (SIP) modification task.

## Contents

**appleInternal**

Indicates whether Apple Internal was enabled or disabled by the task.

Type: String

Valid Values: `enabled | disabled`

Required: No

**baseSystem**

Indicates whether Base System was enabled or disabled by the task.

Type: String

Valid Values: `enabled | disabled`

Required: No

**debuggingRestrictions**

Indicates whether Debugging Restrictions was enabled or disabled by the task.

Type: String

Valid Values: `enabled | disabled`

Required: No

**dTraceRestrictions**

Indicates whether Dtrace Restrictions was enabled or disabled by the task.

Type: String

Valid Values: `enabled | disabled`

Required: No

**filesystemProtections**

Indicates whether Filesystem Protections was enabled or disabled by the task.

Type: String

Valid Values: `enabled | disabled`

Required: No

**kextSigning**

Indicates whether Kext Signing was enabled or disabled by the task.

Type: String

Valid Values: `enabled | disabled`

Required: No

**nvramProtections**

Indicates whether NVRAM Protections was enabled or disabled by the task.

Type: String

Valid Values: `enabled | disabled`

Required: No

**status**

Indicates SIP was enabled or disabled by the task.

Type: String

Valid Values: `enabled | disabled`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MacSystemIntegrityProtectionConfigurationRequest

Describes a custom configuration for a System Integrity Protection (SIP) modification task.

## Contents

**AppleInternal**

Enables or disables Apple Internal.

Type: String

Valid Values: `enabled | disabled`

Required: No

**BaseSystem**

Enables or disables Base System.

Type: String

Valid Values: `enabled | disabled`

Required: No

**DebuggingRestrictions**

Enables or disables Debugging Restrictions.

Type: String

Valid Values: `enabled | disabled`

Required: No

**DTraceRestrictions**

Enables or disables Dtrace Restrictions.

Type: String

Valid Values: `enabled | disabled`

Required: No

**FilesystemProtections**

Enables or disables Filesystem Protections.

Type: String

Valid Values: `enabled | disabled`

Required: No

**KextSigning**

Enables or disables Kext Signing.

Type: String

Valid Values: `enabled | disabled`

Required: No

**NvramProtections**

Enables or disables Nvram Protections.

Type: String

Valid Values: `enabled | disabled`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MaintenanceDetails

Details for Site-to-Site VPN tunnel endpoint maintenance events.

## Contents

**lastMaintenanceApplied**

Timestamp of last applied maintenance.

Type: Timestamp

Required: No

**maintenanceAutoAppliedAfter**

The timestamp after which AWS will automatically apply maintenance.

Type: Timestamp

Required: No

**pendingMaintenance**

Verify existence of a pending maintenance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ManagedPrefixList

Describes a managed prefix list.

## Contents

**addressFamily**

The IP address version.

Type: String

Required: No

**ipamPrefixListResolverSyncEnabled**

Indicates whether synchronization with an IPAM prefix list resolver is enabled for this managed prefix list. When enabled, the prefix list CIDRs are automatically updated based on the resolver's CIDR selection rules.

Type: Boolean

Required: No

**ipamPrefixListResolverTargetId**

The ID of the IPAM prefix list resolver target associated with this managed prefix list. When set, this prefix list becomes an IPAM managed prefix list.

An IPAM-managed prefix list is a customer-managed prefix list that has been associated with an IPAM prefix list resolver target. When a prefix list becomes IPAM managed, its CIDRs are automatically synchronized based on the IPAM prefix list resolver's CIDR selection rules, and direct CIDR modifications are restricted.

Type: String

Required: No

**maxEntries**

The maximum number of entries for the prefix list.

Type: Integer

Required: No

**ownerId**

The ID of the owner of the prefix list.

Type: String

Required: No

**prefixListArn**

The Amazon Resource Name (ARN) for the prefix list.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**prefixListId**

The ID of the prefix list.

Type: String

Required: No

**prefixListName**

The name of the prefix list.

Type: String

Required: No

**state**

The current state of the prefix list.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | modify-in-progress | modify-complete | modify-failed | restore-in-progress | restore-complete | restore-failed | delete-in-progress | delete-complete | delete-failed`

Required: No

**stateMessage**

The state message.

Type: String

Required: No

**TagSet.N**

The tags for the prefix list.

Type: Array of Tag objects

Required: No

**version**

The version of the prefix list.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ManagedResourceVisibilitySettings

Describes the managed resource visibility settings for the account.

## Contents

**defaultVisibility**

The default visibility setting for managed resources. A value of `hidden` indicates that managed resources are not included in Describe operation responses by default. A value of `visible` indicates that managed resources are included by default.

Type: String

Valid Values: `hidden | visible`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MediaAcceleratorInfo

Describes the media accelerators for the instance type.

## Contents

**Accelerators.N**

Describes the media accelerators for the instance type.

Type: Array of MediaDeviceInfo objects

Required: No

**totalMediaMemoryInMiB**

The total size of the memory for the media accelerators for the instance type, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MediaDeviceInfo

Describes the media accelerators for the instance type.

## Contents

**count**

The number of media accelerators for the instance type.

Type: Integer

Required: No

**manufacturer**

The manufacturer of the media accelerator.

Type: String

Required: No

**memoryInfo**

Describes the memory available to the media accelerator.

Type: MediaDeviceMemoryInfo object

Required: No

**name**

The name of the media accelerator.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MediaDeviceMemoryInfo

Describes the memory available to the media accelerator.

## Contents

**sizeInMiB**

The size of the memory available to each media accelerator, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MemoryGiBPerVCpu

The minimum and maximum amount of memory per vCPU, in GiB.

## Contents

**Max** (request), **max** (response)

The maximum amount of memory per vCPU, in GiB. If this parameter is not specified, there is no maximum limit.

Type: Double

Required: No

**Min** (request), **min** (response)

The minimum amount of memory per vCPU, in GiB. If this parameter is not specified, there is no minimum limit.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MemoryGiBPerVCpuRequest

The minimum and maximum amount of memory per vCPU, in GiB.

## Contents

**Max**

The maximum amount of memory per vCPU, in GiB. To specify no maximum limit, omit this parameter.

Type: Double

Required: No

**Min**

The minimum amount of memory per vCPU, in GiB. To specify no minimum limit, omit this parameter.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MemoryInfo

Describes the memory for the instance type.

## Contents

**sizeInMiB**

The size of the memory, in MiB.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MemoryMiB

The minimum and maximum amount of memory, in MiB.

## Contents

**Max** (request), **max** (response)

The maximum amount of memory, in MiB. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

**Min** (request), **min** (response)

The minimum amount of memory, in MiB. If this parameter is not specified, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MemoryMiBRequest

The minimum and maximum amount of memory, in MiB.

## Contents

**Min**

The minimum amount of memory, in MiB. To specify no minimum limit, specify `0`.

Type: Integer

Required: Yes

**Max**

The maximum amount of memory, in MiB. To specify no maximum limit, omit this parameter.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MetricDataResult

Contains a single data point from a capacity metrics query, including the dimension values, timestamp, and metric values for that specific combination.

## Contents

**dimension**

The dimension values that identify this specific data point, such as account ID, region, and instance family.

Type: CapacityManagerDimension object

Required: No

**MetricValueSet.N**

The metric values and statistics for this data point, containing the actual capacity usage numbers.

Type: Array of MetricValue objects

Required: No

**timestamp**

The timestamp for this data point, indicating when the capacity usage occurred.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MetricPoint

Indicates whether the network was healthy or degraded at a particular point. The value is aggregated from the `startDate` to the `endDate`. Currently only `five_minutes` is supported.

## Contents

**endDate**

The end date for the metric point. The ending time must be formatted as `yyyy-mm-ddThh:mm:ss`. For example, `2022-06-12T12:00:00.000Z`.

Type: Timestamp

Required: No

**startDate**

The start date for the metric point. The starting date for the metric point. The starting time must be formatted as `yyyy-mm-ddThh:mm:ss`. For example, `2022-06-10T12:00:00.000Z`.

Type: Timestamp

Required: No

**status**

The status of the metric point.

Type: String

Required: No

**value**

Type: Float

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MetricValue

Represents a single metric value with its associated statistic, such as the sum or average of unused capacity hours.

## Contents

**metric**

The name of the metric.

Type: String

Valid Values: `reservation-total-capacity-hrs-vcpu | reservation-total-capacity-hrs-inst | reservation-max-size-vcpu | reservation-max-size-inst | reservation-min-size-vcpu | reservation-min-size-inst | reservation-unused-total-capacity-hrs-vcpu | reservation-unused-total-capacity-hrs-inst | reservation-unused-total-estimated-cost | reservation-max-unused-size-vcpu | reservation-max-unused-size-inst | reservation-min-unused-size-vcpu | reservation-min-unused-size-inst | reservation-max-utilization | reservation-min-utilization | reservation-avg-utilization-vcpu | reservation-avg-utilization-inst | reservation-total-count | reservation-total-estimated-cost | reservation-avg-future-size-vcpu | reservation-avg-future-size-inst | reservation-min-future-size-vcpu | reservation-min-future-size-inst | reservation-max-future-size-vcpu | reservation-max-future-size-inst | reservation-avg-committed-size-vcpu | reservation-avg-committed-size-inst | reservation-max-committed-size-vcpu | reservation-max-committed-size-inst | reservation-min-committed-size-vcpu | reservation-min-committed-size-inst | reserved-total-usage-hrs-vcpu | reserved-total-usage-hrs-inst | reserved-total-estimated-cost | unreserved-total-usage-hrs-vcpu | unreserved-total-usage-hrs-inst | unreserved-total-estimated-cost | spot-total-usage-hrs-vcpu | spot-total-usage-hrs-inst | spot-total-estimated-cost | spot-avg-run-time-before-interruption-inst | spot-max-run-time-before-interruption-inst | spot-min-run-time-before-interruption-inst`

Required: No

**value**

The numerical value of the metric for the specified statistic and time period.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ModifyTransitGatewayOptions

The transit gateway options.

## Contents

**AddTransitGatewayCidrBlocks.N**

Adds IPv4 or IPv6 CIDR blocks for the transit gateway. Must be a size /24 CIDR block or larger for IPv4, or a size /64 CIDR block or larger for IPv6.

Type: Array of strings

Required: No

**AmazonSideAsn**

A private Autonomous System Number (ASN) for the Amazon side of a BGP session. The range is 64512 to 65534 for 16-bit ASNs and 4200000000 to 4294967294 for 32-bit ASNs.

The modify ASN operation is not allowed on a transit gateway if it has the following attachments:

- Dynamic VPN
- Static VPN
- Direct Connect Gateway
- Connect

You must first delete all transit gateway attachments configured prior to modifying the ASN on the transit gateway.

Type: Long

Required: No

**AssociationDefaultRouteTableId**

The ID of the default association route table.

Type: String

Required: No

**AutoAcceptSharedAttachments**

Enable or disable automatic acceptance of attachment requests.

Type: String

Valid Values: `enable | disable`

Required: No

**DefaultRouteTableAssociation**

Enable or disable automatic association with the default association route table.

Type: String

Valid Values: `enable | disable`

Required: No

**DefaultRouteTablePropagation**

Indicates whether resource attachments automatically propagate routes to the default propagation route table. Enabled by default. If `defaultRouteTablePropagation` is set to `enable`, AWS Transit Gateway will create the default transit gateway route table.

Type: String

Valid Values: `enable | disable`

Required: No

**DnsSupport**

Enable or disable DNS support.

Type: String

Valid Values: `enable | disable`

Required: No

**EncryptionSupport**

Enable or disable encryption support for VPC Encryption Control.

Type: String

Valid Values: `enable | disable`

Required: No

**PropagationDefaultRouteTableId**

The ID of the default propagation route table.

Type: String

Required: No

**RemoveTransitGatewayCidrBlocks.N**

Removes CIDR blocks for the transit gateway.

Type: Array of strings

Required: No

**SecurityGroupReferencingSupport**

Enables you to reference a security group across VPCs attached to a transit gateway to simplify security group management.

This option is disabled by default.

For more information about security group referencing, see Security group referencing in the *AWS Transit Gateways Guide*.

Type: String

Valid Values: `enable | disable`

Required: No

**VpnEcmpSupport**

Enable or disable Equal Cost Multipath Protocol support.

Type: String

Valid Values: `enable | disable`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ModifyTransitGatewayVpcAttachmentRequestOptions

Describes the options for a VPC attachment.

## Contents

**ApplianceModeSupport**

Enable or disable support for appliance mode. If enabled, a traffic flow between a source and destination uses the same Availability Zone for the VPC attachment for the lifetime of that flow. The default is `disable`.

Type: String

Valid Values: `enable | disable`

Required: No

**DnsSupport**

Enable or disable DNS support. The default is `enable`.

Type: String

Valid Values: `enable | disable`

Required: No

**Ipv6Support**

Enable or disable IPv6 support. The default is `enable`.

Type: String

Valid Values: `enable | disable`

Required: No

**SecurityGroupReferencingSupport**

Enables you to reference a security group across VPCs attached to a transit gateway to simplify security group management.

This option is disabled by default.

For more information about security group referencing, see Security group referencing in the *AWS Transit Gateways Guide*.

Type: String

Valid Values: `enable | disable`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ModifyVerifiedAccessEndpointCidrOptions

The CIDR options for a Verified Access endpoint.

## Contents

**PortRange.N**

The port ranges.

Type: Array of ModifyVerifiedAccessEndpointPortRange objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ModifyVerifiedAccessEndpointEniOptions

Describes the options when modifying a Verified Access endpoint with the `network-interface` type.

## Contents

**Port**

The IP port number.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**PortRange.N**

The port ranges.

Type: Array of ModifyVerifiedAccessEndpointPortRange objects

Required: No

**Protocol**

The IP protocol.

Type: String

Valid Values: `http | https | tcp`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# ModifyVerifiedAccessEndpointLoadBalancerOptions

Describes a load balancer when creating an AWS Verified Access endpoint using the `load-balancer` type.

## Contents

**Port**

The IP port number.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**PortRange.N**

The port ranges.

Type: Array of ModifyVerifiedAccessEndpointPortRange objects

Required: No

**Protocol**

The IP protocol.

Type: String

Valid Values: `http | https | tcp`

Required: No

**SubnetId.N**

The IDs of the subnets.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ModifyVerifiedAccessEndpointPortRange

Describes the port range for a Verified Access endpoint.

## Contents

**FromPort**

The start of the port range.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**ToPort**

The end of the port range.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ModifyVerifiedAccessEndpointRdsOptions

The RDS options for a Verified Access endpoint.

## Contents

**Port**

The port.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**RdsEndpoint**

The RDS endpoint.

Type: String

Required: No

**SubnetId.N**

The IDs of the subnets.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ModifyVerifiedAccessNativeApplicationOidcOptions

Describes the OpenID Connect (OIDC) options.

## Contents

**AuthorizationEndpoint**

The authorization endpoint of the IdP.

Type: String

Required: No

**ClientId**

The OAuth 2.0 client identifier.

Type: String

Required: No

**ClientSecret**

The OAuth 2.0 client secret.

Type: String

Required: No

**Issuer**

The OIDC issuer identifier of the IdP.

Type: String

Required: No

**PublicSigningKeyEndpoint**

The public signing key endpoint.

Type: String

Required: No

**Scope**

The set of user claims to be requested from the IdP.

Type: String

Required: No

**TokenEndpoint**

The token endpoint of the IdP.

Type: String

Required: No

**UserInfoEndpoint**

The user info endpoint of the IdP.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ModifyVerifiedAccessTrustProviderDeviceOptions

Modifies the configuration of the specified device-based AWS Verified Access trust provider.

## Contents

**PublicSigningKeyUrl**

The URL AWS Verified Access will use to verify the authenticity of the device tokens.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ModifyVerifiedAccessTrustProviderOidcOptions

Options for an OpenID Connect-compatible user-identity trust provider.

## Contents

**AuthorizationEndpoint**

The OIDC authorization endpoint.

Type: String

Required: No

**ClientId**

The client identifier.

Type: String

Required: No

**ClientSecret**

The client secret.

Type: String

Required: No

**Issuer**

The OIDC issuer.

Type: String

Required: No

**Scope**

OpenID Connect (OIDC) scopes are used by an application during authentication to authorize access to a user's details. Each scope returns a specific set of user attributes.

Type: String

Required: No

**TokenEndpoint**

The OIDC token endpoint.

Type: String

Required: No

**UserInfoEndpoint**

The OIDC user info endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ModifyVpnTunnelOptionsSpecification

The AWS Site-to-Site VPN tunnel options to modify.

## Contents

**DPDTimeoutAction**

The action to take after DPD timeout occurs. Specify `restart` to restart the IKE initiation. Specify `clear` to end the IKE session.

Valid Values: `clear` | none | `restart`

Default: `clear`

Type: String

Required: No

**DPDTimeoutSeconds**

The number of seconds after which a DPD timeout occurs. A DPD timeout of 40 seconds means that the VPN endpoint will consider the peer dead 30 seconds after the first failed keep-alive.

Constraints: A value greater than or equal to 30.

Default: `40`

Type: Integer

Required: No

**EnableTunnelLifecycleControl**

Turn on or off tunnel endpoint lifecycle control feature.

Type: Boolean

Required: No

**IKEVersion.N**

The IKE versions that are permitted for the VPN tunnel.

Valid values: `ikev1` | `ikev2`

Type: Array of IKEVersionsRequestListValue objects

Required: No

**LogOptions**

Options for logging VPN tunnel activity.

Type: VpnTunnelLogOptionsSpecification object

Required: No

**Phase1DHGroupNumber.N**

One or more Diffie-Hellman group numbers that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: `2` | `14` | `15` | `16` | `17` | `18` | `19` | `20` | `21` | `22` | `23` | `24`

Type: Array of Phase1DHGroupNumbersRequestListValue objects

Required: No

**Phase1EncryptionAlgorithm.N**

One or more encryption algorithms that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: `AES128` | `AES256` | `AES128-GCM-16` | `AES256-GCM-16`

Type: Array of Phase1EncryptionAlgorithmsRequestListValue objects

Required: No

**Phase1IntegrityAlgorithm.N**

One or more integrity algorithms that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: `SHA1` | `SHA2-256` | `SHA2-384` | `SHA2-512`

Type: Array of Phase1IntegrityAlgorithmsRequestListValue objects

Required: No

**Phase1LifetimeSeconds**

The lifetime for phase 1 of the IKE negotiation, in seconds.

Constraints: A value between 900 and 28,800.

Default: `28800`

Type: Integer

Required: No

**Phase2DHGroupNumber.N**

One or more Diffie-Hellman group numbers that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: 2 | 5 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24

Type: Array of Phase2DHGroupNumbersRequestListValue objects

Required: No

**Phase2EncryptionAlgorithm.N**

One or more encryption algorithms that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: `AES128` | `AES256` | `AES128-GCM-16` | `AES256-GCM-16`

Type: Array of Phase2EncryptionAlgorithmsRequestListValue objects

Required: No

**Phase2IntegrityAlgorithm.N**

One or more integrity algorithms that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: `SHA1` | `SHA2-256` | `SHA2-384` | `SHA2-512`

Type: Array of Phase2IntegrityAlgorithmsRequestListValue objects

Required: No

**Phase2LifetimeSeconds**

The lifetime for phase 2 of the IKE negotiation, in seconds.

Constraints: A value between 900 and 3,600. The value must be less than the value for `Phase1LifetimeSeconds`.

Default: `3600`

Type: Integer

Required: No

**PreSharedKey**

The pre-shared key (PSK) to establish initial authentication between the virtual private gateway and the customer gateway.

Constraints: Allowed characters are alphanumeric characters, periods (.), and underscores (_). Must be between 8 and 64 characters in length and cannot start with zero (0).

Type: String

Required: No

**RekeyFuzzPercentage**

The percentage of the rekey window (determined by `RekeyMarginTimeSeconds`) during which the rekey time is randomly selected.

Constraints: A value between 0 and 100.

Default: `100`

Type: Integer

Required: No

**RekeyMarginTimeSeconds**

The margin time, in seconds, before the phase 2 lifetime expires, during which the AWS side of the VPN connection performs an IKE rekey. The exact time of the rekey is randomly selected based on the value for `RekeyFuzzPercentage`.

Constraints: A value between 60 and half of `Phase2LifetimeSeconds`.

Default: 270

Type: Integer

Required: No

**ReplayWindowSize**

The number of packets in an IKE replay window.

Constraints: A value between 64 and 2048.

Default: 1024

Type: Integer

Required: No

**StartupAction**

The action to take when the establishing the tunnel for the VPN connection. By default, your customer gateway device must initiate the IKE negotiation and bring up the tunnel. Specify start for AWS to initiate the IKE negotiation.

Valid Values: add | start

Default: add

Type: String

Required: No

**TunnelInsideCidr**

The range of inside IPv4 addresses for the tunnel. Any specified CIDR blocks must be unique across all VPN connections that use the same virtual private gateway.

Constraints: A size /30 CIDR block from the 169.254.0.0/16 range. The following CIDR blocks are reserved and cannot be used:

- 169.254.0.0/30
- 169.254.1.0/30
- 169.254.2.0/30
- 169.254.3.0/30

- `169.254.4.0/30`
- `169.254.5.0/30`
- `169.254.169.252/30`

Type: String

Required: No

**TunnelInsideIpv6Cidr**

The range of inside IPv6 addresses for the tunnel. Any specified CIDR blocks must be unique across all VPN connections that use the same transit gateway.

Constraints: A size /126 CIDR block from the local `fd00::/8` range.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Monitoring

Describes the monitoring of an instance.

## Contents

**state**

Indicates whether detailed monitoring is enabled. Otherwise, basic monitoring is enabled.

Type: String

Valid Values: `disabled | disabling | enabled | pending`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# MovingAddressStatus

> **Note**
>
> This action is deprecated.

Describes the status of a moving Elastic IP address.

## Contents

**moveStatus**

The status of the Elastic IP address that's being moved or restored.

Type: String

Valid Values: `movingToVpc | restoringToClassic`

Required: No

**publicIp**

The Elastic IP address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NatGateway

Describes a NAT gateway.

## Contents

**AttachedApplianceSet.N**

The proxy appliances attached to the NAT Gateway for filtering and inspecting traffic to prevent data exfiltration.

Type: Array of NatGatewayAttachedAppliance objects

Required: No

**autoProvisionZones**

For regional NAT gateways only: Indicates whether AWS automatically manages AZ coverage. When enabled, the NAT gateway associates EIPs in all AZs where your VPC has subnets to handle outbound NAT traffic, expands to new AZs when you create subnets there, and retracts from AZs where you've removed all subnets. When disabled, you must manually manage which AZs the NAT gateway supports and their corresponding EIPs.

A regional NAT gateway is a single NAT Gateway that works across multiple availability zones (AZs) in your VPC, providing redundancy, scalability and availability across all the AZs in a Region.

For more information, see Regional NAT gateways for automatic multi-AZ expansion in the *Amazon VPC User Guide*.

Type: String

Valid Values: `enabled | disabled`

Required: No

**autoScalingIps**

For regional NAT gateways only: Indicates whether AWS automatically allocates additional Elastic IP addresses (EIPs) in an AZ when the NAT gateway needs more ports due to increased concurrent connections to a single destination from that AZ.

For more information, see Regional NAT gateways for automatic multi-AZ expansion in the *Amazon VPC User Guide*.

Type: String

Valid Values: `enabled | disabled`

Required: No

**availabilityMode**

Indicates whether this is a zonal (single-AZ) or regional (multi-AZ) NAT gateway.

A zonal NAT gateway is a NAT Gateway that provides redundancy and scalability within a single availability zone. A regional NAT gateway is a single NAT Gateway that works across multiple availability zones (AZs) in your VPC, providing redundancy, scalability and availability across all the AZs in a Region.

For more information, see Regional NAT gateways for automatic multi-AZ expansion in the *Amazon VPC User Guide*.

Type: String

Valid Values: `zonal | regional`

Required: No

**connectivityType**

Indicates whether the NAT gateway supports public or private connectivity.

Type: String

Valid Values: `private | public`

Required: No

**createTime**

The date and time the NAT gateway was created.

Type: Timestamp

Required: No

**deleteTime**

The date and time the NAT gateway was deleted, if applicable.

Type: Timestamp

Required: No

**failureCode**

If the NAT gateway could not be created, specifies the error code for the failure. (`InsufficientFreeAddressesInSubnet` | `Gateway.NotAttached` | `InvalidAllocationID.NotFound` | `Resource.AlreadyAssociated` | `InternalError` | `InvalidSubnetID.NotFound`)

Type: String

Required: No

**failureMessage**

If the NAT gateway could not be created, specifies the error message for the failure, that corresponds to the error code.

- For InsufficientFreeAddressesInSubnet: "Subnet has insufficient free addresses to create this NAT gateway"
- For Gateway.NotAttached: "Network vpc-xxxxxxxx has no Internet gateway attached"
- For InvalidAllocationID.NotFound: "Elastic IP address eipalloc-xxxxxxxx could not be associated with this NAT gateway"
- For Resource.AlreadyAssociated: "Elastic IP address eipalloc-xxxxxxxx is already associated"
- For InternalError: "Network interface eni-xxxxxxxx, created and used internally by this NAT gateway is in an invalid state. Please try again."
- For InvalidSubnetID.NotFound: "The specified subnet subnet-xxxxxxxx does not exist or could not be found."

Type: String

Required: No

**NatGatewayAddressSet.N**

Information about the IP addresses and network interface associated with the NAT gateway.

Type: Array of NatGatewayAddress objects

Required: No

**natGatewayId**

The ID of the NAT gateway.

Type: String

Required: No

**provisionedBandwidth**

Reserved. If you need to sustain traffic greater than the documented limits, contact AWS Support.

Type: ProvisionedBandwidth object

Required: No

**routeTableId**

For regional NAT gateways only, this is the ID of the NAT gateway.

Type: String

Required: No

**state**

The state of the NAT gateway.

- `pending`: The NAT gateway is being created and is not ready to process traffic.
- `failed`: The NAT gateway could not be created. Check the `failureCode` and `failureMessage` fields for the reason.
- `available`: The NAT gateway is able to process traffic. This status remains until you delete the NAT gateway, and does not indicate the health of the NAT gateway.
- `deleting`: The NAT gateway is in the process of being terminated and may still be processing traffic.
- `deleted`: The NAT gateway has been terminated and is no longer processing traffic.

Type: String

Valid Values: `pending | failed | available | deleting | deleted`

Required: No

**subnetId**

The ID of the subnet in which the NAT gateway is located.

Type: String

Required: No

**TagSet.N**

The tags for the NAT gateway.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC in which the NAT gateway is located.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NatGatewayAddress

Describes the IP addresses and network interface associated with a NAT gateway.

## Contents

**allocationId**

[Public NAT gateway only] The allocation ID of the Elastic IP address that's associated with the NAT gateway.

Type: String

Required: No

**associationId**

[Public NAT gateway only] The association ID of the Elastic IP address that's associated with the NAT gateway.

Type: String

Required: No

**availabilityZone**

The Availability Zone where this Elastic IP address (EIP) is being used to handle outbound NAT traffic.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone where this Elastic IP address (EIP) is being used to handle outbound NAT traffic. Use this instead of AvailabilityZone for consistent identification of AZs across AWS Regions.

Type: String

Required: No

**failureMessage**

The address failure message.

Type: String

Required: No

**isPrimary**

Defines if the IP address is the primary address.

Type: Boolean

Required: No

**networkInterfaceId**

The ID of the network interface associated with the NAT gateway.

Type: String

Required: No

**privateIp**

The private IP address associated with the NAT gateway.

Type: String

Required: No

**publicIp**

[Public NAT gateway only] The Elastic IP address associated with the NAT gateway.

Type: String

Required: No

**status**

The address status.

Type: String

Valid Values: `assigning | unassigning | associating | disassociating | succeeded | failed`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NatGatewayAttachedAppliance

Information about an appliance attached to a NAT Gateway, providing managed security solutions for traffic filtering and inspection.

## Contents

**applianceArn**

The Amazon Resource Name (ARN) of the attached appliance, identifying the specific proxy or security appliance resource.

Type: String

Required: No

**attachmentState**

The current attachment state of the appliance.

Type: String

Valid Values: `attaching | attached | detaching | detached | attach-failed | detach-failed`

Required: No

**failureCode**

The failure code if the appliance attachment or modification operation failed.

Type: String

Required: No

**failureMessage**

A descriptive message explaining the failure if the appliance attachment or modification operation failed.

Type: String

Required: No

**modificationState**

The current modification state of the appliance.

Type: String

Valid Values: `modifying | completed | failed`

Required: No

**type**

The type of appliance attached to the NAT Gateway. For network firewall proxy functionality, this will be "network-firewall-proxy".

Type: String

Valid Values: `network-firewall-proxy`

Required: No

**vpcEndpointId**

The VPC endpoint ID used to route traffic from application VPCs to the proxy for inspection and filtering.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NativeApplicationOidcOptions

Describes the OpenID Connect (OIDC) options.

## Contents

**authorizationEndpoint**

The authorization endpoint of the IdP.

Type: String

Required: No

**clientId**

The OAuth 2.0 client identifier.

Type: String

Required: No

**issuer**

The OIDC issuer identifier of the IdP.

Type: String

Required: No

**publicSigningKeyEndpoint**

The public signing key endpoint.

Type: String

Required: No

**scope**

The set of user claims to be requested from the IdP.

Type: String

Required: No

**tokenEndpoint**

The token endpoint of the IdP.

Type: String

Required: No

**userInfoEndpoint**

The user info endpoint of the IdP.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkAcl

Describes a network ACL.

## Contents

**AssociationSet.N**

Any associations between the network ACL and your subnets

Type: Array of NetworkAclAssociation objects

Required: No

**default**

Indicates whether this is the default network ACL for the VPC.

Type: Boolean

Required: No

**EntrySet.N**

The entries (rules) in the network ACL.

Type: Array of NetworkAclEntry objects

Required: No

**networkAclId**

The ID of the network ACL.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the network ACL.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the network ACL.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC for the network ACL.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkAclAssociation

Describes an association between a network ACL and a subnet.

## Contents

**networkAclAssociationId**

The ID of the association between a network ACL and a subnet.

Type: String

Required: No

**networkAclId**

The ID of the network ACL.

Type: String

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkAclEntry

Describes an entry in a network ACL.

## Contents

**cidrBlock**

The IPv4 network range to allow or deny, in CIDR notation.

Type: String

Required: No

**egress**

Indicates whether the rule is an egress rule (applied to traffic leaving the subnet).

Type: Boolean

Required: No

**icmpTypeCode**

ICMP protocol: The ICMP type and code.

Type: IcmpTypeCode object

Required: No

**ipv6CidrBlock**

The IPv6 network range to allow or deny, in CIDR notation.

Type: String

Required: No

**portRange**

TCP or UDP protocols: The range of ports the rule applies to.

Type: PortRange object

Required: No

**protocol**

The protocol number. A value of "-1" means all protocols.

Type: String

Required: No

**ruleAction**

Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: `allow | deny`

Required: No

**ruleNumber**

The rule number for the entry. ACL entries are processed in ascending order by rule number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkBandwidthGbps

The minimum and maximum amount of network bandwidth, in gigabits per second (Gbps).

> **Note**
>
> Setting the minimum bandwidth does not guarantee that your instance will achieve the minimum bandwidth. Amazon EC2 will identify instance types that support the specified minimum bandwidth, but the actual bandwidth of your instance might go below the specified minimum at times. For more information, see Available instance bandwidth in the *Amazon EC2 User Guide*.

## Contents

**Max** (request), **max** (response)

The maximum amount of network bandwidth, in Gbps. If this parameter is not specified, there is no maximum limit.

Type: Double

Required: No

**Min** (request), **min** (response)

The minimum amount of network bandwidth, in Gbps. If this parameter is not specified, there is no minimum limit.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# NetworkBandwidthGbpsRequest

The minimum and maximum amount of network bandwidth, in gigabits per second (Gbps).

> **Note**
>
> Setting the minimum bandwidth does not guarantee that your instance will achieve the minimum bandwidth. Amazon EC2 will identify instance types that support the specified minimum bandwidth, but the actual bandwidth of your instance might go below the specified minimum at times. For more information, see Available instance bandwidth in the *Amazon EC2 User Guide*.

## Contents

**Max**

The maximum amount of network bandwidth, in Gbps. To specify no maximum limit, omit this parameter.

Type: Double

Required: No

**Min**

The minimum amount of network bandwidth, in Gbps. To specify no minimum limit, omit this parameter.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# NetworkCardInfo

Describes the network card support of the instance type.

## Contents

**additionalFlexibleNetworkInterfaces**

The number of additional network interfaces that can be attached to an instance when using flexible Elastic Network Adapter (ENA) queues. This number is in addition to the base number specified by `maximumNetworkInterfaces`.

Type: Integer

Required: No

**baselineBandwidthInGbps**

The baseline network performance of the network card, in Gbps.

Type: Double

Required: No

**defaultEnaQueueCountPerInterface**

The default number of the ENA queues for each interface.

Type: Integer

Required: No

**maximumEnaQueueCount**

The maximum number of the ENA queues.

Type: Integer

Required: No

**maximumEnaQueueCountPerInterface**

The maximum number of the ENA queues for each interface.

Type: Integer

Required: No

**maximumNetworkInterfaces**

The maximum number of network interfaces for the network card.

Type: Integer

Required: No

**networkCardIndex**

The index of the network card.

Type: Integer

Required: No

**networkPerformance**

The network performance of the network card.

Type: String

Required: No

**peakBandwidthInGbps**

The peak (burst) network performance of the network card, in Gbps.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInfo

Describes the networking features of the instance type.

## Contents

**BandwidthWeightings.N**

A list of valid settings for configurable bandwidth weighting for the instance type, if supported.

Type: Array of strings

Valid Values: `default | vpc-1 | ebs-1`

Required: No

**connectionTrackingConfiguration**

Indicates conntrack information for the instance type

Type: DefaultConnectionTrackingConfiguration object

Required: No

**defaultNetworkCardIndex**

The index of the default network card, starting at 0.

Type: Integer

Required: No

**efaInfo**

Describes the Elastic Fabric Adapters for the instance type.

Type: EfaInfo object

Required: No

**efaSupported**

Indicates whether Elastic Fabric Adapter (EFA) is supported.

Type: Boolean

Required: No

**enaSrdSupported**

Indicates whether the instance type supports ENA Express. ENA Express uses AWS Scalable Reliable Datagram (SRD) technology to increase the maximum bandwidth used per stream and minimize tail latency of network traffic between EC2 instances.

Type: Boolean

Required: No

**enaSupport**

Indicates whether Elastic Network Adapter (ENA) is supported.

Type: String

Valid Values: `unsupported | supported | required`

Required: No

**encryptionInTransitSupported**

Indicates whether the instance type automatically encrypts in-transit traffic between instances.

Type: Boolean

Required: No

**flexibleEnaQueuesSupport**

Indicates whether changing the number of ENA queues is supported.

Type: String

Valid Values: `unsupported | supported`

Required: No

**ipv4AddressesPerInterface**

The maximum number of IPv4 addresses per network interface.

Type: Integer

Required: No

**ipv4AddressesPerSecondaryInterface**

The maximum number of IPv4 addresses per secondary interface.

Type: Integer

Required: No

**ipv6AddressesPerInterface**

The maximum number of IPv6 addresses per network interface.

Type: Integer

Required: No

**ipv6Supported**

Indicates whether IPv6 is supported.

Type: Boolean

Required: No

**maximumNetworkCards**

The maximum number of physical network cards that can be allocated to the instance.

Type: Integer

Required: No

**maximumNetworkInterfaces**

The maximum number of network interfaces for the instance type.

Type: Integer

Required: No

**maximumSecondaryNetworkInterfaces**

The maximum number of secondary interfaces for the instance type.

Type: Integer

Required: No

**NetworkCards.N**

Describes the network cards for the instance type.

Type: Array of NetworkCardInfo objects

Required: No

**networkPerformance**

The network performance.

Type: String

Required: No

**secondaryNetworkSupported**

Indicates whether secondary interface attachments from secondary network are supported.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInsightsAccessScope

Describes a Network Access Scope.

## Contents

**createdDate**

The creation date.

Type: Timestamp

Required: No

**networkInsightsAccessScopeArn**

The Amazon Resource Name (ARN) of the Network Access Scope.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**networkInsightsAccessScopeId**

The ID of the Network Access Scope.

Type: String

Required: No

**TagSet.N**

The tags.

Type: Array of Tag objects

Required: No

**updatedDate**

The last updated date.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInsightsAccessScopeAnalysis

Describes a Network Access Scope analysis.

## Contents

**analyzedEniCount**

The number of network interfaces analyzed.

Type: Integer

Required: No

**endDate**

The analysis end date.

Type: Timestamp

Required: No

**findingsFound**

Indicates whether there are findings.

Type: String

Valid Values: `true | false | unknown`

Required: No

**networkInsightsAccessScopeAnalysisArn**

The Amazon Resource Name (ARN) of the Network Access Scope analysis.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**networkInsightsAccessScopeAnalysisId**

The ID of the Network Access Scope analysis.

Type: String

Required: No

**networkInsightsAccessScopeId**

The ID of the Network Access Scope.

Type: String

Required: No

**startDate**

The analysis start date.

Type: Timestamp

Required: No

**status**

The status.

Type: String

Valid Values: `running | succeeded | failed`

Required: No

**statusMessage**

The status message.

Type: String

Required: No

**TagSet.N**

The tags.

Type: Array of Tag objects

Required: No

**warningMessage**

The warning message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInsightsAccessScopeContent

Describes the Network Access Scope content.

## Contents

**ExcludePathSet.N**

The paths to exclude.

Type: Array of AccessScopePath objects

Required: No

**MatchPathSet.N**

The paths to match.

Type: Array of AccessScopePath objects

Required: No

**networkInsightsAccessScopeId**

The ID of the Network Access Scope.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInsightsAnalysis

Describes a network insights analysis.

## Contents

**AdditionalAccountSet.N**

The member accounts that contain resources that the path can traverse.

Type: Array of strings

Required: No

**AlternatePathHintSet.N**

Potential intermediate components.

Type: Array of AlternatePathHint objects

Required: No

**ExplanationSet.N**

The explanations. For more information, see Reachability Analyzer explanation codes.

Type: Array of Explanation objects

Required: No

**FilterInArnSet.N**

The Amazon Resource Names (ARN) of the resources that the path must traverse.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**FilterOutArnSet.N**

The Amazon Resource Names (ARN) of the resources that the path must ignore.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ForwardPathComponentSet.N**

The components in the path from source to destination.

Type: Array of PathComponent objects

Required: No

**networkInsightsAnalysisArn**

The Amazon Resource Name (ARN) of the network insights analysis.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**networkInsightsAnalysisId**

The ID of the network insights analysis.

Type: String

Required: No

**networkInsightsPathId**

The ID of the path.

Type: String

Required: No

**networkPathFound**

Indicates whether the destination is reachable from the source.

Type: Boolean

Required: No

**ReturnPathComponentSet.N**

The components in the path from destination to source.

Type: Array of PathComponent objects

Required: No

**startDate**

The time the analysis started.

Type: Timestamp

Required: No

**status**

The status of the network insights analysis.

Type: String

Valid Values: `running | succeeded | failed`

Required: No

**statusMessage**

The status message, if the status is `failed`.

Type: String

Required: No

**SuggestedAccountSet.N**

Potential intermediate accounts.

Type: Array of strings

Required: No

**TagSet.N**

The tags.

Type: Array of Tag objects

Required: No

**warningMessage**

The warning message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInsightsPath

Describes a path.

## Contents

**createdDate**

The time stamp when the path was created.

Type: Timestamp

Required: No

**destination**

The ID of the destination.

Type: String

Required: No

**destinationArn**

The Amazon Resource Name (ARN) of the destination.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**destinationIp**

The IP address of the destination.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**destinationPort**

The destination port.

Type: Integer

Required: No

**filterAtDestination**

Scopes the analysis to network paths that match specific filters at the destination.

Type: PathFilter object

Required: No

**filterAtSource**

Scopes the analysis to network paths that match specific filters at the source.

Type: PathFilter object

Required: No

**networkInsightsPathArn**

The Amazon Resource Name (ARN) of the path.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**networkInsightsPathId**

The ID of the path.

Type: String

Required: No

**protocol**

The protocol.

Type: String

Valid Values: `tcp | udp`

Required: No

**source**

The ID of the source.

Type: String

Required: No

**sourceArn**

The Amazon Resource Name (ARN) of the source.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**sourceIp**

The IP address of the source.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**TagSet.N**

The tags associated with the path.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInterface

Describes a network interface.

## Contents

**AssociatedSubnetSet.N**

The subnets associated with this network interface.

Type: Array of strings

Required: No

**association**

The association information for an Elastic IP address (IPv4) associated with the network interface.

Type: NetworkInterfaceAssociation object

Required: No

**attachment**

The network interface attachment.

Type: NetworkInterfaceAttachment object

Required: No

**availabilityZone**

The Availability Zone.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**connectionTrackingConfiguration**

A security group connection tracking configuration that enables you to set the timeout for connection tracking on an Elastic network interface. For more information, see Connection tracking timeouts in the *Amazon EC2 User Guide*.

Type: ConnectionTrackingConfiguration object

Required: No

**denyAllIgwTraffic**

Indicates whether a network interface with an IPv6 address is unreachable from the public internet. If the value is `true`, inbound traffic from the internet is dropped and you cannot assign an elastic IP address to the network interface. The network interface is reachable from peered VPCs and resources connected through a transit gateway, including on-premises networks.

Type: Boolean

Required: No

**description**

A description.

Type: String

Required: No

**GroupSet.N**

Any security groups for the network interface.

Type: Array of GroupIdentifier objects

Required: No

**interfaceType**

The type of network interface.

Type: String

Valid Values: `api_gateway_managed | aws_codestar_connections_managed | branch | ec2_instance_connect_endpoint | efa | efa-only | efs | evs | gateway_load_balancer | gateway_load_balancer_endpoint | global_accelerator_managed | interface | iot_rules_managed | lambda | load_balancer | nat_gateway | network_load_balancer | quicksight | transit_gateway | trunk | vpc_endpoint`

Required: No

**Ipv4PrefixSet.N**

The IPv4 prefixes that are assigned to the network interface.

Type: Array of Ipv4PrefixSpecification objects

Required: No

**ipv6Address**

The IPv6 globally unique address associated with the network interface.

Type: String

Required: No

**Ipv6AddressesSet.N**

The IPv6 addresses associated with the network interface.

Type: Array of NetworkInterfaceIpv6Address objects

Required: No

**ipv6Native**

Indicates whether this is an IPv6 only network interface.

Type: Boolean

Required: No

**Ipv6PrefixSet.N**

The IPv6 prefixes that are assigned to the network interface.

Type: Array of Ipv6PrefixSpecification objects

Required: No

**macAddress**

The MAC address.

Type: String

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**operator**

The service provider that manages the network interface.

Type: OperatorResponse object

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**ownerId**

The AWS account ID of the owner of the network interface.

Type: String

Required: No

**privateDnsName**

The private hostname. For more information, see EC2 instance hostnames, DNS names, and domains in the *Amazon EC2 User Guide*.

Type: String

Required: No

**privateIpAddress**

The IPv4 address of the network interface within the subnet.

Type: String

Required: No

**PrivateIpAddressesSet.N**

The private IPv4 addresses associated with the network interface.

Type: Array of NetworkInterfacePrivateIpAddress objects

Required: No

**publicDnsName**

A public hostname. For more information, see EC2 instance hostnames, DNS names, and domains in the *Amazon EC2 User Guide*.

Type: String

Required: No

**publicIpDnsNameOptions**

Public hostname type options. For more information, see EC2 instance hostnames, DNS names, and domains in the *Amazon EC2 User Guide*.

Type: PublicIpDnsNameOptions object

Required: No

**requesterId**

The alias or AWS account ID of the principal or service that created the network interface.

Type: String

Required: No

**requesterManaged**

Indicates whether the network interface is being managed by AWS.

Type: Boolean

Required: No

**sourceDestCheck**

Indicates whether source/destination checking is enabled.

Type: Boolean

Required: No

**status**

The status of the network interface.

Type: String

Valid Values: `available | associated | attaching | in-use | detaching`

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the network interface.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInterfaceAssociation

Describes association information for an Elastic IP address (IPv4 only), or a Carrier IP address (for a network interface which resides in a subnet in a Wavelength Zone).

## Contents

**allocationId**

The allocation ID.

Type: String

Required: No

**associationId**

The association ID.

Type: String

Required: No

**carrierIp**

The carrier IP address associated with the network interface.

This option is only available when the network interface is in a subnet which is associated with a Wavelength Zone.

Type: String

Required: No

**customerOwnedIp**

The customer-owned IP address associated with the network interface.

Type: String

Required: No

**ipOwnerId**

The ID of the Elastic IP address owner.

Type: String

Required: No

**publicDnsName**

The public DNS name.

Type: String

Required: No

**publicIp**

The address of the Elastic IP address bound to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInterfaceAttachment

Describes a network interface attachment.

## Contents

**attachmentId**

The ID of the network interface attachment.

Type: String

Required: No

**attachTime**

The timestamp indicating when the attachment initiated.

Type: Timestamp

Required: No

**deleteOnTermination**

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

**deviceIndex**

The device index of the network interface attachment on the instance.

Type: Integer

Required: No

**enaQueueCount**

The number of ENA queues created with the instance.

Type: Integer

Required: No

**enaSrdSpecification**

Configures ENA Express for the network interface that this action attaches to the instance.

Type: AttachmentEnaSrdSpecification object

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

**instanceOwnerId**

The AWS account ID of the owner of the instance.

Type: String

Required: No

**networkCardIndex**

The index of the network card.

Type: Integer

Required: No

**status**

The attachment state.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInterfaceAttachmentChanges

Describes an attachment change.

## Contents

**AttachmentId**

The ID of the network interface attachment.

Type: String

Required: No

**DefaultEnaQueueCount**

The default number of the ENA queues.

Type: Boolean

Required: No

**DeleteOnTermination**

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

**EnaQueueCount**

The number of ENA queues to be created with the instance.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInterfaceCount

The minimum and maximum number of network interfaces.

## Contents

**Max** (request), **max** (response)

The maximum number of network interfaces. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

**Min** (request), **min** (response)

The minimum number of network interfaces. If this parameter is not specified, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInterfaceCountRequest

The minimum and maximum number of network interfaces.

## Contents

**Max**

The maximum number of network interfaces. To specify no maximum limit, omit this parameter.

Type: Integer

Required: No

**Min**

The minimum number of network interfaces. To specify no minimum limit, omit this parameter.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInterfaceIpv6Address

Describes an IPv6 address associated with a network interface.

## Contents

**ipv6Address**

The IPv6 address.

Type: String

Required: No

**isPrimaryIpv6**

Determines if an IPv6 address associated with a network interface is the primary IPv6 address. When you enable an IPv6 GUA address to be a primary IPv6, the first IPv6 GUA will be made the primary IPv6 address until the instance is terminated or the network interface is detached. For more information, see ModifyNetworkInterfaceAttribute.

Type: Boolean

Required: No

**publicIpv6DnsName**

An IPv6-enabled public hostname for a network interface. Requests from within the VPC or from the internet resolve to the IPv6 GUA of the network interface. For more information, see EC2 instance hostnames, DNS names, and domains in the *Amazon EC2 User Guide*.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# NetworkInterfacePermission

Describes a permission for a network interface.

## Contents

**awsAccountId**

The AWS account ID.

Type: String

Required: No

**awsService**

The AWS service.

Type: String

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**networkInterfacePermissionId**

The ID of the network interface permission.

Type: String

Required: No

**permission**

The type of permission.

Type: String

Valid Values: `INSTANCE-ATTACH | EIP-ASSOCIATE`

Required: No

**permissionState**

Information about the state of the permission.

Type: NetworkInterfacePermissionState object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInterfacePermissionState

Describes the state of a network interface permission.

## Contents

**state**

The state of the permission.

Type: String

Valid Values: `pending | granted | revoking | revoked`

Required: No

**statusMessage**

A status message, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NetworkInterfacePrivateIpAddress

Describes the private IPv4 address of a network interface.

## Contents

**association**

The association information for an Elastic IP address (IPv4) associated with the network interface.

Type: NetworkInterfaceAssociation object

Required: No

**primary**

Indicates whether this IPv4 address is the primary private IPv4 address of the network interface.

Type: Boolean

Required: No

**privateDnsName**

The private DNS name.

Type: String

Required: No

**privateIpAddress**

The private IPv4 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NeuronDeviceCoreInfo

Describes the cores available to the neuron accelerator.

## Contents

**count**

The number of cores available to the neuron accelerator.

Type: Integer

Required: No

**version**

The version of the neuron accelerator.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NeuronDeviceInfo

Describes the neuron accelerators for the instance type.

## Contents

**coreInfo**

Describes the cores available to each neuron accelerator.

Type: NeuronDeviceCoreInfo object

Required: No

**count**

The number of neuron accelerators for the instance type.

Type: Integer

Required: No

**memoryInfo**

Describes the memory available to each neuron accelerator.

Type: NeuronDeviceMemoryInfo object

Required: No

**name**

The name of the neuron accelerator.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NeuronDeviceMemoryInfo

Describes the memory available to the neuron accelerator.

## Contents

**sizeInMiB**

The size of the memory available to the neuron accelerator, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NeuronInfo

Describes the neuron accelerators for the instance type.

## Contents

**NeuronDevices.N**

Describes the neuron accelerators for the instance type.

Type: Array of NeuronDeviceInfo objects

Required: No

**totalNeuronDeviceMemoryInMiB**

The total size of the memory for the neuron accelerators for the instance type, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NewDhcpConfiguration

Describes a DHCP configuration option.

## Contents

**Key**

The name of a DHCP option.

Type: String

Required: No

**Value.N**

The values for the DHCP option.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# NitroTpmInfo

Describes the supported NitroTPM versions for the instance type.

## Contents

**SupportedVersions.N**

Indicates the supported NitroTPM versions.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# OidcOptions

Describes the options for an OpenID Connect-compatible user-identity trust provider.

## Contents

**authorizationEndpoint**

The OIDC authorization endpoint.

Type: String

Required: No

**clientId**

The client identifier.

Type: String

Required: No

**clientSecret**

The client secret.

Type: String

Required: No

**issuer**

The OIDC issuer.

Type: String

Required: No

**scope**

The OpenID Connect (OIDC) scope specified.

Type: String

Required: No

**tokenEndpoint**

The OIDC token endpoint.

Type: String

Required: No

**userInfoEndpoint**

The OIDC user info endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# OnDemandOptions

Describes the configuration of On-Demand Instances in an EC2 Fleet.

## Contents

**allocationStrategy**

The strategy that determines the order of the launch template overrides to use in fulfilling On-Demand capacity.

`lowest-price` - EC2 Fleet uses price to determine the order, launching the lowest price first.

`prioritized` - EC2 Fleet uses the priority that you assigned to each launch template override, launching the highest priority first.

Default: `lowest-price`

Type: String

Valid Values: `lowest-price | prioritized`

Required: No

**capacityReservationOptions**

The strategy for using unused Capacity Reservations for fulfilling On-Demand capacity.

Supported only for fleets of type `instant`.

Type: CapacityReservationOptions object

Required: No

**maxTotalPrice**

The maximum amount per hour for On-Demand Instances that you're willing to pay.

> **Note**
>
> If your fleet includes T instances that are configured as `unlimited`, and if their average CPU usage exceeds the baseline utilization, you will incur a charge for surplus credits. The `maxTotalPrice` does not account for surplus credits, and, if you use surplus

credits, your final cost might be higher than what you specified for `maxTotalPrice`. For more information, see Surplus credits can incur charges in the *Amazon EC2 User Guide*.

Type: String

Required: No

**minTargetCapacity**

The minimum target capacity for On-Demand Instances in the fleet. If this minimum capacity isn't reached, no instances are launched.

Constraints: Maximum value of `1000`. Supported only for fleets of type `instant`.

At least one of the following must be specified: `SingleAvailabilityZone` | `SingleInstanceType`

Type: Integer

Required: No

**singleAvailabilityZone**

Indicates that the fleet launches all On-Demand Instances into a single Availability Zone.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

**singleInstanceType**

Indicates that the fleet uses a single instance type to launch all On-Demand Instances in the fleet.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# OnDemandOptionsRequest

Describes the configuration of On-Demand Instances in an EC2 Fleet.

## Contents

**AllocationStrategy**

The strategy that determines the order of the launch template overrides to use in fulfilling On-Demand capacity.

`lowest-price` - EC2 Fleet uses price to determine the order, launching the lowest price first.

`prioritized` - EC2 Fleet uses the priority that you assigned to each launch template override, launching the highest priority first.

Default: `lowest-price`

Type: String

Valid Values: `lowest-price | prioritized`

Required: No

**CapacityReservationOptions**

The strategy for using unused Capacity Reservations for fulfilling On-Demand capacity.

Supported only for fleets of type `instant`.

Type: CapacityReservationOptionsRequest object

Required: No

**MaxTotalPrice**

The maximum amount per hour for On-Demand Instances that you're willing to pay.

> **Note**
>
> If your fleet includes T instances that are configured as `unlimited`, and if their average CPU usage exceeds the baseline utilization, you will incur a charge for surplus credits. The `MaxTotalPrice` does not account for surplus credits, and, if you use surplus

credits, your final cost might be higher than what you specified for `MaxTotalPrice`. For more information, see Surplus credits can incur charges in the *Amazon EC2 User Guide*.

Type: String

Required: No

**MinTargetCapacity**

The minimum target capacity for On-Demand Instances in the fleet. If this minimum capacity isn't reached, no instances are launched.

Constraints: Maximum value of `1000`. Supported only for fleets of type `instant`.

At least one of the following must be specified: `SingleAvailabilityZone` | `SingleInstanceType`

Type: Integer

Required: No

**SingleAvailabilityZone**

Indicates that the fleet launches all On-Demand Instances into a single Availability Zone.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

**SingleInstanceType**

Indicates that the fleet uses a single instance type to launch all On-Demand Instances in the fleet.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# OperatorRequest

The service provider that manages the resource.

## Contents

**Principal**

The service provider that manages the resource.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# OperatorResponse

Describes whether the resource is managed by a service provider and, if so, describes the service provider that manages it.

## Contents

**hiddenByDefault**

If `true`, the resource is hidden by default based on the managed resource visibility settings for the account.

Type: Boolean

Required: No

**managed**

If `true`, the resource is managed by a service provider.

Type: Boolean

Required: No

**principal**

If `managed` is `true`, then the principal is returned. The principal is the service provider that manages the resource.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# OutpostLag

Describes an Outpost link aggregation group (LAG).

## Contents

**LocalGatewayVirtualInterfaceIdSet.N**

The IDs of the local gateway virtual interfaces associated with the Outpost LAG.

Type: Array of strings

Required: No

**outpostArn**

The Amazon Resource Number (ARN) of the Outpost LAG.

Type: String

Required: No

**outpostLagId**

The ID of the Outpost LAG.

Type: String

Required: No

**ownerId**

The ID of the Outpost LAG owner.

Type: String

Required: No

**ServiceLinkVirtualInterfaceIdSet.N**

The service link virtual interface IDs associated with the Outpost LAG.

Type: Array of strings

Required: No

**state**

The current state of the Outpost LAG.

Type: String

Required: No

**TagSet.N**

The tags associated with the Outpost LAG.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PacketHeaderStatement

Describes a packet header statement.

## Contents

**DestinationAddressSet.N**

The destination addresses.

Type: Array of strings

Required: No

**DestinationPortSet.N**

The destination ports.

Type: Array of strings

Required: No

**DestinationPrefixListSet.N**

The destination prefix lists.

Type: Array of strings

Required: No

**ProtocolSet.N**

The protocols.

Type: Array of strings

Valid Values: `tcp | udp`

Required: No

**SourceAddressSet.N**

The source addresses.

Type: Array of strings

Required: No

**SourcePortSet.N**

The source ports.

Type: Array of strings

Required: No

**SourcePrefixListSet.N**

The source prefix lists.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PacketHeaderStatementRequest

Describes a packet header statement.

## Contents

**DestinationAddress.N**

The destination addresses.

Type: Array of strings

Required: No

**DestinationPort.N**

The destination ports.

Type: Array of strings

Required: No

**DestinationPrefixList.N**

The destination prefix lists.

Type: Array of strings

Required: No

**Protocol.N**

The protocols.

Type: Array of strings

Valid Values: `tcp | udp`

Required: No

**SourceAddress.N**

The source addresses.

Type: Array of strings

Required: No

**SourcePort.N**

The source ports.

Type: Array of strings

Required: No

**SourcePrefixList.N**

The source prefix lists.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PathComponent

Describes a path component.

## Contents

**aclRule**

The network ACL rule.

Type: AnalysisAclRule object

Required: No

**AdditionalDetailSet.N**

The additional details.

Type: Array of AdditionalDetail objects

Required: No

**attachedTo**

The resource to which the path component is attached.

Type: AnalysisComponent object

Required: No

**component**

The component.

Type: AnalysisComponent object

Required: No

**destinationVpc**

The destination VPC.

Type: AnalysisComponent object

Required: No

**elasticLoadBalancerListener**

The load balancer listener.

Type: AnalysisComponent object

Required: No

**ExplanationSet.N**

The explanation codes.

Type: Array of Explanation objects

Required: No

**firewallStatefulRule**

The Network Firewall stateful rule.

Type: FirewallStatefulRule object

Required: No

**firewallStatelessRule**

The Network Firewall stateless rule.

Type: FirewallStatelessRule object

Required: No

**inboundHeader**

The inbound header.

Type: AnalysisPacketHeader object

Required: No

**outboundHeader**

The outbound header.

Type: AnalysisPacketHeader object

Required: No

**routeTableRoute**

The route table route.

Type: AnalysisRouteTableRoute object

Required: No

**securityGroupRule**

The security group rule.

Type: AnalysisSecurityGroupRule object

Required: No

**sequenceNumber**

The sequence number.

Type: Integer

Required: No

**serviceName**

The name of the VPC endpoint service.

Type: String

Required: No

**sourceVpc**

The source VPC.

Type: AnalysisComponent object

Required: No

**subnet**

The subnet.

Type: AnalysisComponent object

Required: No

**transitGateway**

The transit gateway.

Type: AnalysisComponent object

Required: No

**transitGatewayRouteTableRoute**

The route in a transit gateway route table.

Type: TransitGatewayRouteTableRoute object

Required: No

**vpc**

The component VPC.

Type: AnalysisComponent object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PathFilter

Describes a set of filters for a path analysis. Use path filters to scope the analysis when there can be multiple resulting paths.

## Contents

**destinationAddress**

The destination IPv4 address.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**destinationPortRange**

The destination port range.

Type: FilterPortRange object

Required: No

**sourceAddress**

The source IPv4 address.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**sourcePortRange**

The source port range.

Type: FilterPortRange object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PathRequestFilter

Describes a set of filters for a path analysis. Use path filters to scope the analysis when there can be multiple resulting paths.

## Contents

**DestinationAddress**

The destination IPv4 address.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**DestinationPortRange**

The destination port range.

Type: RequestFilterPortRange object

Required: No

**SourceAddress**

The source IPv4 address.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**SourcePortRange**

The source port range.

Type: RequestFilterPortRange object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PathStatement

Describes a path statement.

## Contents

**packetHeaderStatement**

The packet header statement.

Type: PacketHeaderStatement object

Required: No

**resourceStatement**

The resource statement.

Type: ResourceStatement object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PathStatementRequest

Describes a path statement.

## Contents

**PacketHeaderStatement**

The packet header statement.

Type: PacketHeaderStatementRequest object

Required: No

**ResourceStatement**

The resource statement.

Type: ResourceStatementRequest object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PciId

Describes the data that identifies an Amazon FPGA image (AFI) on the PCI bus.

## Contents

**DeviceId**

The ID of the device.

Type: String

Required: No

**SubsystemId**

The ID of the subsystem.

Type: String

Required: No

**SubsystemVendorId**

The ID of the vendor for the subsystem.

Type: String

Required: No

**VendorId**

The ID of the vendor.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PeeringAttachmentStatus

The status of the transit gateway peering attachment.

## Contents

**code**

The status code.

Type: String

Required: No

**message**

The status message, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PeeringConnectionOptions

Describes the VPC peering connection options.

## Contents

**allowDnsResolutionFromRemoteVpc**

If true, the public DNS hostnames of instances in the specified VPC resolve to private IP addresses when queried from instances in the peer VPC.

Type: Boolean

Required: No

**allowEgressFromLocalClassicLinkToRemoteVpc**

Deprecated.

Type: Boolean

Required: No

**allowEgressFromLocalVpcToRemoteClassicLink**

Deprecated.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PeeringConnectionOptionsRequest

The VPC peering connection options.

## Contents

**AllowDnsResolutionFromRemoteVpc**

If true, enables a local VPC to resolve public DNS hostnames to private IP addresses when queried from instances in the peer VPC.

Type: Boolean

Required: No

**AllowEgressFromLocalClassicLinkToRemoteVpc**

Deprecated.

Type: Boolean

Required: No

**AllowEgressFromLocalVpcToRemoteClassicLink**

Deprecated.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PeeringTgwInfo

Information about the transit gateway in the peering attachment.

## Contents

**coreNetworkId**

The ID of the core network where the transit gateway peer is located.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the transit gateway.

Type: String

Required: No

**region**

The Region of the transit gateway.

Type: String

Required: No

**transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PerformanceFactorReference

Specify an instance family to use as the baseline reference for CPU performance. All instance types that match your specified attributes will be compared against the CPU performance of the referenced instance family, regardless of CPU manufacturer or architecture.

> **Note**
>
> Currently, only one instance family can be specified in the list.

## Contents

**InstanceFamily** (request), **instanceFamily** (response)

The instance family to use as a baseline reference.

> **Note**
>
> Ensure that you specify the correct value for the instance family. The instance family is everything before the period (`.`) in the instance type name. For example, in the instance type `c6i.large`, the instance family is `c6i`, not `c6`. For more information, see Amazon EC2 instance type naming conventions in *Amazon EC2 Instance Types*.

The following instance families are *not supported* for performance protection:

- `c1`
- `g3 | g3s`
- `hpc7g`
- `m1 | m2`
- `mac1 | mac2 | mac2-m1ultra | mac2-m2 | mac2-m2pro`
- `p3dn | p4d | p5`
- `t1`
- `u-12tb1 | u-18tb1 | u-24tb1 | u-3tb1 | u-6tb1 | u-9tb1 | u7i-12tb | u7in-16tb | u7in-24tb | u7in-32tb`

If you enable performance protection by specifying a supported instance family, the returned instance types will exclude the above unsupported instance families.

If you specify an unsupported instance family as a value for baseline performance, the API returns an empty response for GetInstanceTypesFromInstanceRequirements and an exception for CreateFleet, RequestSpotFleet, ModifyFleet, and ModifySpotFleetRequest.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PerformanceFactorReferenceRequest

Specify an instance family to use as the baseline reference for CPU performance. All instance types that match your specified attributes will be compared against the CPU performance of the referenced instance family, regardless of CPU manufacturer or architecture.

> **Note**
>
> Currently, only one instance family can be specified in the list.

## Contents

### InstanceFamily

The instance family to use as a baseline reference.

> **Note**
>
> Ensure that you specify the correct value for the instance family. The instance family is everything before the period (`.`) in the instance type name. For example, in the instance type `c6i.large`, the instance family is `c6i`, not `c6`. For more information, see Amazon EC2 instance type naming conventions in *Amazon EC2 Instance Types*.

The following instance families are *not supported* for performance protection:

- `c1`
- `g3 | g3s`
- `hpc7g`
- `m1 | m2`
- `mac1 | mac2 | mac2-m1ultra | mac2-m2 | mac2-m2pro`
- `p3dn | p4d | p5`
- `t1`
- `u-12tb1 | u-18tb1 | u-24tb1 | u-3tb1 | u-6tb1 | u-9tb1 | u7i-12tb | u7in-16tb | u7in-24tb | u7in-32tb`

If you enable performance protection by specifying a supported instance family, the returned instance types will exclude the above unsupported instance families.

If you specify an unsupported instance family as a value for baseline performance, the API returns an empty response for GetInstanceTypesFromInstanceRequirements and an exception for CreateFleet, RequestSpotFleet, ModifyFleet, and ModifySpotFleetRequest.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase1DHGroupNumbersListValue

The Diffie-Hellmann group number for phase 1 IKE negotiations.

## Contents

**value**

The Diffie-Hellmann group number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase1DHGroupNumbersRequestListValue

Specifies a Diffie-Hellman group number for the VPN tunnel for phase 1 IKE negotiations.

## Contents

### Value

The Diffie-Hellmann group number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase1EncryptionAlgorithmsListValue

The encryption algorithm for phase 1 IKE negotiations.

## Contents

**value**

The value for the encryption algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase1EncryptionAlgorithmsRequestListValue

Specifies the encryption algorithm for the VPN tunnel for phase 1 IKE negotiations.

## Contents

### Value

The value for the encryption algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase1IntegrityAlgorithmsListValue

The integrity algorithm for phase 1 IKE negotiations.

## Contents

**value**

The value for the integrity algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase1IntegrityAlgorithmsRequestListValue

Specifies the integrity algorithm for the VPN tunnel for phase 1 IKE negotiations.

## Contents

### Value

The value for the integrity algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase2DHGroupNumbersListValue

The Diffie-Hellmann group number for phase 2 IKE negotiations.

## Contents

**value**

The Diffie-Hellmann group number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase2DHGroupNumbersRequestListValue

Specifies a Diffie-Hellman group number for the VPN tunnel for phase 2 IKE negotiations.

## Contents

### Value

The Diffie-Hellmann group number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase2EncryptionAlgorithmsListValue

The encryption algorithm for phase 2 IKE negotiations.

## Contents

**value**

The encryption algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase2EncryptionAlgorithmsRequestListValue

Specifies the encryption algorithm for the VPN tunnel for phase 2 IKE negotiations.

## Contents

### Value

The encryption algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase2IntegrityAlgorithmsListValue

The integrity algorithm for phase 2 IKE negotiations.

## Contents

**value**

The integrity algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Phase2IntegrityAlgorithmsRequestListValue

Specifies the integrity algorithm for the VPN tunnel for phase 2 IKE negotiations.

## Contents

**Value**

The integrity algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Placement

Describes the placement of an instance.

## Contents

**Affinity** (request), **affinity** (response)

The affinity setting for the instance on the Dedicated Host.

This parameter is not supported for CreateFleet or ImportInstance.

Type: String

Required: No

**AvailabilityZone** (request), **availabilityZone** (response)

The Availability Zone of the instance.

On input, you can specify `AvailabilityZone` or `AvailabilityZoneId`, but not both. If you specify neither one, Amazon EC2 automatically selects an Availability Zone for you.

This parameter is not supported for CreateFleet.

Type: String

Required: No

**AvailabilityZoneId** (request), **availabilityZoneId** (response)

The ID of the Availability Zone of the instance.

On input, you can specify `AvailabilityZone` or `AvailabilityZoneId`, but not both. If you specify neither one, Amazon EC2 automatically selects an Availability Zone for you.

This parameter is not supported for CreateFleet.

Type: String

Required: No

**GroupId** (request), **groupId** (response)

The ID of the placement group that the instance is in.

On input, you can specify `GroupId` or `GroupName`, but not both.

Type: String

Required: No

**GroupName** (request), **groupName** (response)

The name of the placement group that the instance is in.

On input, you can specify `GroupId` or `GroupName`, but not both.

Type: String

Required: No

**HostId** (request), **hostId** (response)

The ID of the Dedicated Host on which the instance resides.

This parameter is not supported for CreateFleet or ImportInstance.

Type: String

Required: No

**HostResourceGroupArn** (request), **hostResourceGroupArn** (response)

The ARN of the host resource group in which to launch the instances.

On input, if you specify this parameter, either omit the **Tenancy** parameter or set it to `host`.

This parameter is not supported for CreateFleet.

Type: String

Required: No

**PartitionNumber** (request), **partitionNumber** (response)

The number of the partition that the instance is in. Valid only if the placement group strategy is set to `partition`.

This parameter is not supported for CreateFleet.

Type: Integer

Required: No

**SpreadDomain** (request), **spreadDomain** (response)

Reserved for future use.

Type: String

Required: No

**Tenancy** (request), **tenancy** (response)

The tenancy of the instance. An instance with a tenancy of `dedicated` runs on single-tenant hardware.

This parameter is not supported for CreateFleet. The `host` tenancy is not supported for ImportInstance or for T3 instances that are configured for the `unlimited` CPU credit option.

Type: String

Valid Values: `default | dedicated | host`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PlacementGroup

Describes a placement group.

## Contents

**groupArn**

The Amazon Resource Name (ARN) of the placement group.

Type: String

Required: No

**groupId**

The ID of the placement group.

Type: String

Required: No

**groupName**

The name of the placement group.

Type: String

Required: No

**linkedGroupId**

Reserved for future use.

Type: String

Required: No

**operator**

The service provider that manages the Placement Group.

Type: OperatorResponse object

Required: No

**partitionCount**

The number of partitions. Valid only if **strategy** is set to `partition`.

Type: Integer

Required: No

**spreadLevel**

The spread level for the placement group. *Only* Outpost placement groups can be spread across hosts.

Type: String

Valid Values: `host | rack`

Required: No

**state**

The state of the placement group.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

**strategy**

The placement strategy.

Type: String

Valid Values: `cluster | spread | partition`

Required: No

**TagSet.N**

Any tags applied to the placement group.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PlacementGroupInfo

Describes the placement group support of the instance type.

## Contents

**SupportedStrategies.N**

The supported placement group types.

Type: Array of strings

Valid Values: `cluster | partition | spread`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PlacementResponse

Describes the placement of an instance.

## Contents

**groupName**

The name of the placement group that the instance is in.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PoolCidrBlock

Describes a CIDR block for an address pool.

## Contents

**poolCidrBlock**

The CIDR block.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PortRange

Describes a range of ports.

## Contents

**From** (request), **from** (response)

The first port in the range.

Type: Integer

Required: No

**To** (request), **to** (response)

The last port in the range.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PrefixList

Describes prefixes for AWS services.

## Contents

**CidrSet.N**

The IP address range of the AWS service.

Type: Array of strings

Required: No

**prefixListId**

The ID of the prefix.

Type: String

Required: No

**prefixListName**

The name of the prefix.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PrefixListAssociation

Describes the resource with which a prefix list is associated.

## Contents

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceOwner**

The owner of the resource.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PrefixListEntry

Describes a prefix list entry.

## Contents

**cidr**

The CIDR block.

Type: String

Required: No

**description**

The description.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PrefixListId

Describes a prefix list ID.

## Contents

**Description** (request), **description** (response)

A description for the security group rule that references this prefix list ID.

Constraints: Up to 255 characters in length. Allowed characters are a-z, A-Z, 0-9, spaces, and ._-:/()#,@[]+=;{}!$*

Type: String

Required: No

**PrefixListId** (request), **prefixListId** (response)

The ID of the prefix.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PriceSchedule

Describes the price for a Reserved Instance.

## Contents

**active**

The current price schedule, as determined by the term remaining for the Reserved Instance in the listing.

A specific price schedule is always in effect, but only one price schedule can be active at any time. Take, for example, a Reserved Instance listing that has five months remaining in its term. When you specify price schedules for five months and two months, this means that schedule 1, covering the first three months of the remaining term, will be active during months 5, 4, and 3. Then schedule 2, covering the last two months of the term, will be active for months 2 and 1.

Type: Boolean

Required: No

**currencyCode**

The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

**price**

The fixed price for the term.

Type: Double

Required: No

**term**

The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PriceScheduleSpecification

Describes the price for a Reserved Instance.

## Contents

**CurrencyCode**

The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

**Price**

The fixed price for the term.

Type: Double

Required: No

**Term**

The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PricingDetail

Describes a Reserved Instance offering.

## Contents

**count**

The number of reservations available for the price.

Type: Integer

Required: No

**price**

The price per instance.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PrincipalIdFormat

PrincipalIdFormat description

## Contents

**arn**

PrincipalIdFormatARN description

Type: String

Required: No

**StatusSet.N**

PrincipalIdFormatStatuses description

Type: Array of IdFormat objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PrivateDnsDetails

Information about the Private DNS name for interface endpoints.

## Contents

**privateDnsName**

The private DNS name assigned to the VPC endpoint service.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PrivateDnsNameConfiguration

Information about the private DNS name for the service endpoint.

## Contents

**name**

The name of the record subdomain the service provider needs to create. The service provider adds the `value` text to the `name`.

Type: String

Required: No

**state**

The verification state of the VPC endpoint service.

Consumers of the endpoint service can use the private name only when the state is `verified`.

Type: String

Valid Values: `pendingVerification | verified | failed`

Required: No

**type**

The endpoint service verification type, for example TXT.

Type: String

Required: No

**value**

The value the service provider adds to the private DNS name domain record before verification.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PrivateDnsNameOptionsOnLaunch

Describes the options for instance hostnames.

## Contents

**enableResourceNameDnsAAAARecord**

Indicates whether to respond to DNS queries for instance hostname with DNS AAAA records.

Type: Boolean

Required: No

**enableResourceNameDnsARecord**

Indicates whether to respond to DNS queries for instance hostnames with DNS A records.

Type: Boolean

Required: No

**hostnameType**

The type of hostname for EC2 instances. For IPv4 only subnets, an instance DNS name must be based on the instance IPv4 address. For IPv6 only subnets, an instance DNS name must be based on the instance ID. For dual-stack subnets, you can specify whether DNS names use the instance IPv4 address or the instance ID.

Type: String

Valid Values: `ip-name | resource-name`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# PrivateDnsNameOptionsRequest

Describes the options for instance hostnames.

## Contents

**EnableResourceNameDnsAAAARecord**

Indicates whether to respond to DNS queries for instance hostnames with DNS AAAA records.

Type: Boolean

Required: No

**EnableResourceNameDnsARecord**

Indicates whether to respond to DNS queries for instance hostnames with DNS A records.

Type: Boolean

Required: No

**HostnameType**

The type of hostname for EC2 instances. For IPv4 only subnets, an instance DNS name must be based on the instance IPv4 address. For IPv6 only subnets, an instance DNS name must be based on the instance ID. For dual-stack subnets, you can specify whether DNS names use the instance IPv4 address or the instance ID.

Type: String

Valid Values: `ip-name | resource-name`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# PrivateDnsNameOptionsResponse

Describes the options for instance hostnames.

## Contents

**enableResourceNameDnsAAAARecord**

Indicates whether to respond to DNS queries for instance hostnames with DNS AAAA records.

Type: Boolean

Required: No

**enableResourceNameDnsARecord**

Indicates whether to respond to DNS queries for instance hostnames with DNS A records.

Type: Boolean

Required: No

**hostnameType**

The type of hostname to assign to an instance.

Type: String

Valid Values: `ip-name | resource-name`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PrivateIpAddressSpecification

Describes a secondary private IPv4 address for a network interface.

## Contents

**Primary** (request), **primary** (response)

Indicates whether the private IPv4 address is the primary private IPv4 address. Only one IPv4 address can be designated as primary.

Type: Boolean

Required: No

**PrivateIpAddress** (request), **privateIpAddress** (response)

The private IPv4 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ProcessorInfo

Describes the processor used by the instance type.

## Contents

**manufacturer**

The manufacturer of the processor.

Type: String

Required: No

**SupportedArchitectures.N**

The architectures supported by the instance type.

Type: Array of strings

Valid Values: `i386 | x86_64 | arm64 | x86_64_mac | arm64_mac`

Required: No

**SupportedFeatures.N**

Indicates whether the instance type supports AMD SEV-SNP. If the request returns `amd-sev-snp`, AMD SEV-SNP is supported. Otherwise, it is not supported. For more information, see AMD SEV-SNP.

Type: Array of strings

Valid Values: `amd-sev-snp | nested-virtualization`

Required: No

**sustainedClockSpeedInGhz**

The speed of the processor, in GHz.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ProductCode

Describes a product code.

## Contents

**productCode**

The product code.

Type: String

Required: No

**type**

The type of product code.

Type: String

Valid Values: `devpay | marketplace`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PropagatingVgw

Describes a virtual private gateway propagating route.

## Contents

**gatewayId**

The ID of the virtual private gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ProvisionedBandwidth

Reserved. If you need to sustain traffic greater than the documented limits, contact AWS Support.

## Contents

**provisioned**

Reserved.

Type: String

Required: No

**provisionTime**

Reserved.

Type: Timestamp

Required: No

**requested**

Reserved.

Type: String

Required: No

**requestTime**

Reserved.

Type: Timestamp

Required: No

**status**

Reserved.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PtrUpdateStatus

The status of an updated pointer (PTR) record for an Elastic IP address.

## Contents

**reason**

The reason for the PTR record update.

Type: String

Required: No

**status**

The status of the PTR record update.

Type: String

Required: No

**value**

The value for the PTR record update.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PublicIpDnsNameOptions

Public hostname type options. For more information, see EC2 instance hostnames, DNS names, and domains in the *Amazon EC2 User Guide*.

## Contents

**dnsHostnameType**

The public hostname type. For more information, see EC2 instance hostnames, DNS names, and domains in the *Amazon EC2 User Guide*.

Type: String

Required: No

**publicDualStackDnsName**

A dual-stack public hostname for a network interface. Requests from within the VPC resolve to both the private IPv4 address and the IPv6 Global Unicast Address of the network interface. Requests from the internet resolve to both the public IPv4 and the IPv6 GUA address of the network interface.

Type: String

Required: No

**publicIpv4DnsName**

An IPv4-enabled public hostname for a network interface. Requests from within the VPC resolve to the private primary IPv4 address of the network interface. Requests from the internet resolve to the public IPv4 address of the network interface.

Type: String

Required: No

**publicIpv6DnsName**

An IPv6-enabled public hostname for a network interface. Requests from within the VPC or from the internet resolve to the IPv6 GUA of the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PublicIpv4Pool

Describes an IPv4 address pool.

## Contents

**description**

A description of the address pool.

Type: String

Required: No

**networkBorderGroup**

The name of the location from which the address pool is advertised. A network border group is a unique set of Availability Zones or Local Zones from where AWS advertises public IP addresses.

Type: String

Required: No

**PoolAddressRangeSet.N**

The address ranges.

Type: Array of PublicIpv4PoolRange objects

Required: No

**poolId**

The ID of the address pool.

Type: String

Required: No

**TagSet.N**

Any tags for the address pool.

Type: Array of Tag objects

Required: No

**totalAddressCount**

The total number of addresses.

Type: Integer

Required: No

**totalAvailableAddressCount**

The total number of available addresses.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PublicIpv4PoolRange

Describes an address range of an IPv4 address pool.

## Contents

**addressCount**

The number of addresses in the range.

Type: Integer

Required: No

**availableAddressCount**

The number of available addresses in the range.

Type: Integer

Required: No

**firstAddress**

The first IP address in the range.

Type: String

Required: No

**lastAddress**

The last IP address in the range.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Purchase

Describes the result of the purchase.

## Contents

**currencyCode**

The currency in which the `UpfrontPrice` and `HourlyPrice` amounts are specified. At this time, the only supported currency is `USD`.

Type: String

Valid Values: USD

Required: No

**duration**

The duration of the reservation's term in seconds.

Type: Integer

Required: No

**HostIdSet.N**

The IDs of the Dedicated Hosts associated with the reservation.

Type: Array of strings

Required: No

**hostReservationId**

The ID of the reservation.

Type: String

Required: No

**hourlyPrice**

The hourly price of the reservation per hour.

Type: String

Required: No

**instanceFamily**

The instance family on the Dedicated Host that the reservation can be associated with.

Type: String

Required: No

**paymentOption**

The payment option for the reservation.

Type: String

Valid Values: `AllUpfront | PartialUpfront | NoUpfront`

Required: No

**upfrontPrice**

The upfront price of the reservation.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# PurchaseRequest

Describes a request to purchase Scheduled Instances.

## Contents

**InstanceCount**

The number of instances.

Type: Integer

Required: Yes

**PurchaseToken**

The purchase token.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RecurringCharge

Describes a recurring charge.

## Contents

**amount**

The amount of the recurring charge.

Type: Double

Required: No

**frequency**

The frequency of the recurring charge.

Type: String

Valid Values: `Hourly`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReferencedSecurityGroup

Describes the security group that is referenced in the security group rule.

## Contents

**groupId**

The ID of the security group.

Type: String

Required: No

**peeringStatus**

The status of a VPC peering connection, if applicable.

Type: String

Required: No

**userId**

The AWS account ID.

Type: String

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

**vpcPeeringConnectionId**

The ID of the VPC peering connection (if applicable).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Region

Describes a Region.

## Contents

**GeographySet.N**

The geography information for the Region. The geography is returned as a list.

Type: Array of RegionGeography objects

Required: No

**optInStatus**

The Region opt-in status. The possible values are `opt-in-not-required`, `opted-in`, and `not-opted-in`.

Type: String

Required: No

**regionEndpoint**

The Region service endpoint.

Type: String

Required: No

**regionName**

The name of the Region.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RegionalSummary

A summary report for the attribute for a Region.

## Contents

**numberOfMatchedAccounts**

The number of accounts in the Region with the same configuration value for the attribute that is most frequently observed.

Type: Integer

Required: No

**numberOfUnmatchedAccounts**

The number of accounts in the Region with a configuration value different from the most frequently observed value for the attribute.

Type: Integer

Required: No

**regionName**

The AWS Region.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RegionGeography

Describes the geography information for a Region.

## Contents

**name**

The name of the geography, for example, `United States of America`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RegisteredInstance

Describes an Amazon EC2 instance that is enabled for SQL Server High Availability standby detection monitoring.

## Contents

**haStatus**

The SQL Server High Availability status of the instance. Valid values are:

- `processing` - The SQL Server High Availability status for the SQL Server High Availability instance is being updated.
- `active` - The SQL Server High Availability instance is an active node in an SQL Server High Availability cluster.
- `standby` - The SQL Server High Availability instance is a standby failover node in an SQL Server High Availability cluster.
- `invalid` - An error occurred due to misconfigured permissions, or unable to dertemine SQL Server High Availability status for the SQL Server High Availability instance.

Type: String

Valid Values: `processing | active | standby | invalid`

Required: No

**instanceId**

The ID of the SQL Server High Availability instance.

Type: String

Required: No

**lastUpdatedTime**

The date and time when the instance's SQL Server High Availability status was last updated, in the ISO 8601 format in the UTC time zone (`YYYY-MM-DDThh:mm:ss.sssZ`).

Type: Timestamp

Required: No

**processingStatus**

A brief description of the SQL Server High Availability status. If the instance is in the `invalid` High Availability status, this parameter includes the error message.

Type: String

Required: No

**sqlServerCredentials**

The ARN of the AWS Secrets Manager secret containing the SQL Server access credentials for the SQL Server High Availability instance. If not specified, deafult local user credentials will be used by the AWS Systems Manager agent.

Type: String

Required: No

**sqlServerLicenseUsage**

The license type for the SQL Server license. Valid values include:

- `full` - The SQL Server High Availability instance is using a full SQL Server license.
- `waived` - The SQL Server High Availability instance is waived from the SQL Server license.

Type: String

Valid Values: `full | waived`

Required: No

**TagSet.N**

The tags assigned to the SQL Server High Availability instance.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RegisterInstanceTagAttributeRequest

Information about the tag keys to register for the current Region. You can either specify individual tag keys or register all tag keys in the current Region. You must specify either `IncludeAllTagsOfInstance` or `InstanceTagKeys` in the request

## Contents

**IncludeAllTagsOfInstance**

Indicates whether to register all tag keys in the current Region. Specify `true` to register all tag keys.

Type: Boolean

Required: No

**InstanceTagKey.N**

The tag keys to register.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RemoveIpamOperatingRegion

Remove an operating Region from an IPAM. Operating Regions are AWS Regions where the IPAM is allowed to manage IP address CIDRs. IPAM only discovers and monitors resources in the AWS Regions you select as operating Regions.

For more information about operating Regions, see Create an IPAM in the *Amazon VPC IPAM User Guide*

## Contents

**RegionName**

The name of the operating Region you want to remove.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RemoveIpamOrganizationalUnitExclusion

Remove an Organizational Unit (OU) exclusion to your IPAM. If your IPAM is integrated with AWS Organizations and you add an organizational unit (OU) exclusion, IPAM will not manage the IP addresses in accounts in that OU exclusion. There is a limit on the number of exclusions you can create. For more information, see Quotas for your IPAM in the *Amazon VPC IPAM User Guide*.

## Contents

**OrganizationsEntityPath**

An AWS Organizations entity path. Build the path for the OU(s) using AWS Organizations IDs separated by a `/`. Include all child OUs by ending the path with `/*`.

- Example 1
  - Path to a child OU: `o-a1b2c3d4e5/r-f6g7h8i9j0example/ou-ghi0-awsccccc/ou-jkl0-awsddddd/`
  - In this example, `o-a1b2c3d4e5` is the organization ID, `r-f6g7h8i9j0example` is the root ID , `ou-ghi0-awsccccc` is an OU ID, and `ou-jkl0-awsddddd` is a child OU ID.
  - IPAM will not manage the IP addresses in accounts in the child OU.
- Example 2
  - Path where all child OUs will be part of the exclusion: `o-a1b2c3d4e5/r-f6g7h8i9j0example/ou-ghi0-awsccccc/*`
  - In this example, IPAM will not manage the IP addresses in accounts in the OU (`ou-ghi0-awsccccc`) or in accounts in any OUs that are children of the OU.

For more information on how to construct an entity path, see Understand the AWS Organizations entity path in the *AWS Identity and Access Management User Guide*.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RemovePrefixListEntry

An entry for a prefix list.

## Contents

### Cidr

The CIDR block.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReplaceRootVolumeTask

Information about a root volume replacement task.

## Contents

**completeTime**

The time the task completed.

Type: String

Required: No

**deleteReplacedRootVolume**

Indicates whether the original root volume is to be deleted after the root volume replacement task completes.

Type: Boolean

Required: No

**imageId**

The ID of the AMI used to create the replacement root volume.

Type: String

Required: No

**instanceId**

The ID of the instance for which the root volume replacement task was created.

Type: String

Required: No

**replaceRootVolumeTaskId**

The ID of the root volume replacement task.

Type: String

Required: No

**snapshotId**

The ID of the snapshot used to create the replacement root volume.

Type: String

Required: No

**startTime**

The time the task was started.

Type: String

Required: No

**TagSet.N**

The tags assigned to the task.

Type: Array of Tag objects

Required: No

**taskState**

The state of the task. The task can be in one of the following states:

- `pending` - the replacement volume is being created.
- `in-progress` - the original volume is being detached and the replacement volume is being attached.
- `succeeded` - the replacement volume has been successfully attached to the instance and the instance is available.
- `failing` - the replacement task is in the process of failing.
- `failed` - the replacement task has failed but the original root volume is still attached.
- `failing-detached` - the replacement task is in the process of failing. The instance might have no root volume attached.
- `failed-detached` - the replacement task has failed and the instance has no root volume attached.

Type: String

Valid Values: `pending | in-progress | failing | succeeded | failed | failed-detached`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RequestFilterPortRange

Describes a port range.

## Contents

**FromPort**

The first port in the range.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 65535.

Required: No

**ToPort**

The last port in the range.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 65535.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RequestIpamResourceTag

A tag on an IPAM resource.

## Contents

**Key**

The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: String

Required: No

**Value**

The value for the tag.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RequestLaunchTemplateData

The information to include in the launch template.

> **Note**
>
> You must specify at least one parameter for the launch template data.

## Contents

**BlockDeviceMapping.N**

The block device mapping.

Type: Array of LaunchTemplateBlockDeviceMappingRequest objects

Required: No

**CapacityReservationSpecification**

The Capacity Reservation targeting option. If you do not specify this parameter, the instance's Capacity Reservation preference defaults to open, which enables it to run in any open Capacity Reservation that has matching attributes (instance type, platform, Availability Zone).

Type: LaunchTemplateCapacityReservationSpecificationRequest object

Required: No

**CpuOptions**

The CPU options for the instance. For more information, see CPU options for Amazon EC2 instances in the *Amazon EC2 User Guide*.

Type: LaunchTemplateCpuOptionsRequest object

Required: No

**CreditSpecification**

The credit option for CPU usage of the instance. Valid only for T instances.

Type: CreditSpecificationRequest object

Required: No

**DisableApiStop**

Indicates whether to enable the instance for stop protection. For more information, see Enable stop protection for your EC2 instances in the *Amazon EC2 User Guide*.

Type: Boolean

Required: No

**DisableApiTermination**

Indicates whether termination protection is enabled for the instance. The default is `false`, which means that you can terminate the instance using the Amazon EC2 console, command line tools, or API. You can enable termination protection when you launch an instance, while the instance is running, or while the instance is stopped.

Type: Boolean

Required: No

**EbsOptimized**

Indicates whether the instance is optimized for Amazon EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal Amazon EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.

Type: Boolean

Required: No

**ElasticGpuSpecification.N**

Deprecated.

> **Note**
>
> Amazon Elastic Graphics reached end of life on January 8, 2024.

Type: Array of ElasticGpuSpecification objects

Required: No

**ElasticInferenceAccelerator.N**

*This member has been deprecated.*

> **Note**
>
> Amazon Elastic Inference is no longer available.

An elastic inference accelerator to associate with the instance. Elastic inference accelerators are a resource you can attach to your Amazon EC2 instances to accelerate your Deep Learning (DL) inference workloads.

You cannot specify accelerators from different generations in the same request.

Type: Array of LaunchTemplateElasticInferenceAccelerator objects

Required: No

**EnclaveOptions**

Indicates whether the instance is enabled for AWS Nitro Enclaves. For more information, see What is Nitro Enclaves? in the *AWS Nitro Enclaves User Guide*.

You can't enable AWS Nitro Enclaves and hibernation on the same instance.

Type: LaunchTemplateEnclaveOptionsRequest object

Required: No

**HibernationOptions**

Indicates whether an instance is enabled for hibernation. This parameter is valid only if the instance meets the hibernation prerequisites. For more information, see Hibernate your Amazon EC2 instance in the *Amazon EC2 User Guide*.

Type: LaunchTemplateHibernationOptionsRequest object

Required: No

**IamInstanceProfile**

The name or Amazon Resource Name (ARN) of an IAM instance profile.

Type: LaunchTemplateIamInstanceProfileSpecificationRequest object

Required: No

**ImageId**

The ID of the AMI in the format `ami-0ac394d6a3example`.

Alternatively, you can specify a Systems Manager parameter, using one of the following formats. The Systems Manager parameter will resolve to an AMI ID on launch.

To reference a public parameter:

- `resolve:ssm:public-parameter`

To reference a parameter stored in the same account:

- `resolve:ssm:parameter-name`
- `resolve:ssm:parameter-name:version-number`
- `resolve:ssm:parameter-name:label`

To reference a parameter shared from another AWS account:

- `resolve:ssm:parameter-ARN`
- `resolve:ssm:parameter-ARN:version-number`
- `resolve:ssm:parameter-ARN:label`

For more information, see Use a Systems Manager parameter instead of an AMI ID in the *Amazon EC2 User Guide*.

> **Note**
>
> If the launch template will be used for an EC2 Fleet or Spot Fleet, note the following:
>
> - Only EC2 Fleets of type `instant` support specifying a Systems Manager parameter.
> - For EC2 Fleets of type `maintain` or `request`, or for Spot Fleets, you must specify the AMI ID.

Type: String

Required: No

**InstanceInitiatedShutdownBehavior**

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Default: `stop`

Type: String

Valid Values: `stop | terminate`

Required: No

**InstanceMarketOptions**

The market (purchasing) option for the instances.

Type: LaunchTemplateInstanceMarketOptionsRequest object

Required: No

**InstanceRequirements**

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with these attributes.

You must specify `VCpuCount` and `MemoryMiB`. All other attributes are optional. Any unspecified optional attribute is set to its default.

When you specify multiple attributes, you get instance types that satisfy all of the specified attributes. If you specify multiple values for an attribute, you get instance types that satisfy any of the specified values.

To limit the list of instance types from which Amazon EC2 can identify matching instance types, you can use one of the following parameters, but not both in the same request:

- `AllowedInstanceTypes` - The instance types to include in the list. All other instance types are ignored, even if they match your specified attributes.
- `ExcludedInstanceTypes` - The instance types to exclude from the list, even if they match your specified attributes.

> **Note**
>
> If you specify `InstanceRequirements`, you can't specify `InstanceType`.

> Attribute-based instance type selection is only supported when using Auto Scaling groups, EC2 Fleet, and Spot Fleet to launch instances. If you plan to use the launch template in the launch instance wizard, or with the RunInstances API or AWS::EC2::Instance AWS CloudFormation resource, you can't specify `InstanceRequirements`.

For more information, see Specify attributes for instance type selection for EC2 Fleet or Spot Fleet and Spot placement score in the *Amazon EC2 User Guide*.

Type: InstanceRequirementsRequest object

Required: No

**InstanceType**

The instance type. For more information, see Amazon EC2 instance types in the *Amazon EC2 User Guide*.

If you specify `InstanceType`, you can't specify `InstanceRequirements`.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge |`

c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge

| m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge

| t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge

| r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge |

mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge |

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m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium |
r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge
| r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge
| r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large |
c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge
| c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl
| c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large |
g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge
| r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge |
r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge
| r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-
flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge |
r8i-flex.12xlarge | r8i-flex.16xlarge
```

Required: No

**KernelId**

The ID of the kernel.

> **Important**
>
> We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see User provided kernels in the *Amazon Linux 2 User Guide*.

Type: String

Required: No

**KeyName**

The name of the key pair. You can create a key pair using CreateKeyPair or ImportKeyPair.

> **Important**
>
> If you do not specify a key pair, you can't connect to the instance unless you choose an AMI that is configured to allow users another way to log in.

Type: String

Required: No

**LicenseSpecification.N**

The license configurations.

Type: Array of LaunchTemplateLicenseConfigurationRequest objects

Required: No

**MaintenanceOptions**

The maintenance options for the instance.

Type: LaunchTemplateInstanceMaintenanceOptionsRequest object

Required: No

**MetadataOptions**

The metadata options for the instance. For more information, see Configure the Instance Metadata Service options in the *Amazon EC2 User Guide*.

Type: LaunchTemplateInstanceMetadataOptionsRequest object

Required: No

**Monitoring**

The monitoring for the instance.

Type: LaunchTemplatesMonitoringRequest object

Required: No

**NetworkInterface.N**

The network interfaces for the instance.

Type: Array of LaunchTemplateInstanceNetworkInterfaceSpecificationRequest objects

Required: No

**NetworkPerformanceOptions**

Contains launch template settings to boost network performance for the type of workload that runs on your instance.

Type: LaunchTemplateNetworkPerformanceOptionsRequest object

Required: No

**Operator**

The entity that manages the launch template.

Type: OperatorRequest object

Required: No

**Placement**

The placement for the instance.

Type: LaunchTemplatePlacementRequest object

Required: No

**PrivateDnsNameOptions**

The options for the instance hostname. The default values are inherited from the subnet.

Type: LaunchTemplatePrivateDnsNameOptionsRequest object

Required: No

**RamDiskId**

The ID of the RAM disk.

> **Important**
>
> We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see User provided kernels in the *Amazon EC2 User Guide*.

Type: String

Required: No

**SecondaryInterface.N**

The secondary interfaces to associate with instances launched from the template.

Type: Array of LaunchTemplateInstanceSecondaryInterfaceSpecificationRequest objects

Required: No

**SecurityGroup.N**

The names of the security groups. For a nondefault VPC, you must use security group IDs instead.

If you specify a network interface, you must specify any security groups as part of the network interface instead of using this parameter.

Type: Array of strings

Required: No

**SecurityGroupId.N**

The IDs of the security groups.

If you specify a network interface, you must specify any security groups as part of the network interface instead of using this parameter.

Type: Array of strings

Required: No

**TagSpecification.N**

The tags to apply to the resources that are created during instance launch. These tags are not applied to the launch template.

Type: Array of LaunchTemplateTagSpecificationRequest objects

Required: No

**UserData**

The user data to make available to the instance. You must provide base64-encoded text. User data is limited to 16 KB. For more information, see Run commands when you launch an EC2 instance with user data input in the *Amazon EC2 User Guide*.

If you are creating the launch template for use with AWS Batch, the user data must be provided in the MIME multi-part archive format. For more information, see Amazon EC2 user data in launch templates in the *AWS Batch User Guide*.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RequestSpotLaunchSpecification

Describes the launch specification for an instance.

## Contents

**AddressingType**

Deprecated.

Type: String

Required: No

**BlockDeviceMapping.N**

The block device mapping entries. You can't specify both a snapshot ID and an encryption value. This is because only blank volumes can be encrypted on creation. If a snapshot is the basis for a volume, it is not blank and its encryption status is used for the volume encryption status.

Type: Array of BlockDeviceMapping objects

Required: No

**EbsOptimized**

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Default: `false`

Type: Boolean

Required: No

**IamInstanceProfile**

The IAM instance profile.

Type: IamInstanceProfileSpecification object

Required: No

**ImageId**

The ID of the AMI.

Type: String

Required: No

**InstanceType**

The instance type. Only one instance type can be specified.

Type: String

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge

| g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge

| m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge |

z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge

| trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large |

r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge |

`r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge`

Required: No

**KernelId**

The ID of the kernel.

Type: String

Required: No

**KeyName**

The name of the key pair.

Type: String

Required: No

**Monitoring**

Indicates whether basic or detailed monitoring is enabled for the instance.

Default: Disabled

Type: RunInstancesMonitoringEnabled object

Required: No

**NetworkInterface.N**

The network interfaces. If you specify a network interface, you must specify subnet IDs and security group IDs using the network interface.

Type: Array of InstanceNetworkInterfaceSpecification objects

Required: No

**Placement**

The placement information for the instance.

Type: SpotPlacement object

Required: No

**RamdiskId**

The ID of the RAM disk.

Type: String

Required: No

**SecurityGroup.N**

Not supported.

Type: Array of strings

Required: No

**SecurityGroupId.N**

The IDs of the security groups.

Type: Array of strings

Required: No

**SubnetId**

The ID of the subnet in which to launch the instance.

Type: String

Required: No

**UserData**

The base64-encoded user data that instances use when starting up. User data is limited to 16 KB.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Reservation

Describes a launch request for one or more instances, and includes owner, requester, and security group information that applies to all instances in the launch request.

## Contents

**GroupSet.N**

Not supported.

Type: Array of GroupIdentifier objects

Required: No

**InstancesSet.N**

The instances.

Type: Array of Instance objects

Required: No

**ownerId**

The ID of the AWS account that owns the reservation.

Type: String

Required: No

**requesterId**

The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

Required: No

**reservationId**

The ID of the reservation.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservationFleetInstanceSpecification

Information about an instance type to use in a Capacity Reservation Fleet.

## Contents

**AvailabilityZone**

The Availability Zone in which the Capacity Reservation Fleet reserves the capacity. A Capacity Reservation Fleet can't span Availability Zones. All instance type specifications that you specify for the Fleet must use the same Availability Zone.

Type: String

Required: No

**AvailabilityZoneId**

The ID of the Availability Zone in which the Capacity Reservation Fleet reserves the capacity. A Capacity Reservation Fleet can't span Availability Zones. All instance type specifications that you specify for the Fleet must use the same Availability Zone.

Type: String

Required: No

**EbsOptimized**

Indicates whether the Capacity Reservation Fleet supports EBS-optimized instances types. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using EBS-optimized instance types.

Type: Boolean

Required: No

**InstancePlatform**

The type of operating system for which the Capacity Reservation Fleet reserves capacity.

Type: String

Valid Values: `Linux/UNIX | Red Hat Enterprise Linux | SUSE Linux | Windows | Windows with SQL Server | Windows with SQL Server Enterprise | Windows`

with SQL Server Standard | Windows with SQL Server Web | Linux with SQL Server Standard | Linux with SQL Server Web | Linux with SQL Server Enterprise | RHEL with SQL Server Standard | RHEL with SQL Server Enterprise | RHEL with SQL Server Web | RHEL with HA | RHEL with HA and SQL Server Standard | RHEL with HA and SQL Server Enterprise | Ubuntu Pro

Required: No

**InstanceType**

The instance type for which the Capacity Reservation Fleet reserves capacity.

Type: String

Valid Values: a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge

| g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge

| m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge

| x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge

| r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge

| u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large |

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g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge
| r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge |
r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge
| r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-
flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge |
r8i-flex.12xlarge | r8i-flex.16xlarge
```

Required: No

**Priority**

The priority to assign to the instance type. This value is used to determine which of the instance types specified for the Fleet should be prioritized for use. A lower value indicates a high priority. For more information, see Instance type priority in the *Amazon EC2 User Guide*.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

**Weight**

The number of capacity units provided by the specified instance type. This value, together with the total target capacity that you specify for the Fleet determine the number of instances for which the Fleet reserves capacity. Both values are based on units that make sense for your workload. For more information, see Total target capacity in the *Amazon EC2 User Guide*.

Type: Double

Valid Range: Minimum value of 0.001. Maximum value of 99.999.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# ReservationValue

The cost associated with the Reserved Instance.

## Contents

**hourlyPrice**

The hourly rate of the reservation.

Type: String

Required: No

**remainingTotalValue**

The balance of the total value (the sum of remainingUpfrontValue + hourlyPrice * number of hours remaining).

Type: String

Required: No

**remainingUpfrontValue**

The remaining upfront cost of the reservation.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservedCapacityOptions

Defines EC2 Fleet preferences for utilizing reserved capacity when DefaultTargetCapacityType is set to `reserved-capacity`.

## Contents

**ReservationTypeSet.N**

The types of Capacity Reservations used for fulfilling the EC2 Fleet request.

Type: Array of strings

Valid Values: `interruptible-capacity-reservation`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservedCapacityOptionsRequest

Defines EC2 Fleet preferences for utilizing reserved capacity when DefaultTargetCapacityType is set to `reserved-capacity`.

> **Note**
>
> This configuration can only be used if the EC2 Fleet is of type `instant`.

When you specify `ReservedCapacityOptions`, you must also set `DefaultTargetCapacityType` to `reserved-capacity` in the `TargetCapacitySpecification`.

For more information about Interruptible Capacity Reservations, see Launch instances into an Interruptible Capacity Reservation in the *Amazon EC2 User Guide*.

## Contents

**ReservationType.N**

The types of Capacity Reservations to use for fulfilling the EC2 Fleet request.

Type: Array of strings

Valid Values: `interruptible-capacity-reservation`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservedInstanceLimitPrice

Describes the limit price of a Reserved Instance offering.

## Contents

**Amount**

Used for Reserved Instance Marketplace offerings. Specifies the limit price on the total order (instanceCount * price).

Type: Double

Required: No

**CurrencyCode**

The currency in which the `limitPrice` amount is specified. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservedInstanceReservationValue

The total value of the Convertible Reserved Instance.

## Contents

**reservationValue**

The total value of the Convertible Reserved Instance that you are exchanging.

Type: ReservationValue object

Required: No

**reservedInstanceId**

The ID of the Convertible Reserved Instance that you are exchanging.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservedInstances

Describes a Reserved Instance.

## Contents

**availabilityZone**

The Availability Zone in which the Reserved Instance can be used.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**currencyCode**

The currency of the Reserved Instance. It's specified using ISO 4217 standard currency codes. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

**duration**

The duration of the Reserved Instance, in seconds.

Type: Long

Required: No

**end**

The time when the Reserved Instance expires.

Type: Timestamp

Required: No

**fixedPrice**

The purchase price of the Reserved Instance.

Type: Float

Required: No

**instanceCount**

The number of reservations purchased.

Type: Integer

Required: No

**instanceTenancy**

The tenancy of the instance.

Type: String

Valid Values: `default | dedicated | host`

Required: No

**instanceType**

The instance type on which the Reserved Instance can be used.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge`

| c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge

| m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium |

t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge

| m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge |

c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge

| i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge

Required: No

**offeringClass**

The offering class of the Reserved Instance.

Type: String

Valid Values: standard | convertible

Required: No

**offeringType**

The Reserved Instance offering type.

Type: String

Valid Values: Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront

Required: No

**productDescription**

The Reserved Instance product platform description.

Type: String

Valid Values: `Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)`

Required: No

**RecurringCharges.N**

The recurring charge tag assigned to the resource.

Type: Array of RecurringCharge objects

Required: No

**reservedInstancesId**

The ID of the Reserved Instance.

Type: String

Required: No

**scope**

The scope of the Reserved Instance.

Type: String

Valid Values: `Availability Zone | Region`

Required: No

**start**

The date and time the Reserved Instance started.

Type: Timestamp

Required: No

**state**

The state of the Reserved Instance purchase.

Type: String

Valid Values: `payment-pending | active | payment-failed | retired | queued | queued-deleted`

Required: No

**TagSet.N**

Any tags assigned to the resource.

Type: Array of Tag objects

Required: No

**usagePrice**

The usage price of the Reserved Instance, per hour.

Type: Float

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservedInstancesConfiguration

Describes the configuration settings for the modified Reserved Instances.

## Contents

**AvailabilityZone** (request), **availabilityZone** (response)

The Availability Zone for the modified Reserved Instances.

Type: String

Required: No

**AvailabilityZoneId** (request), **availabilityZoneId** (response)

The ID of the Availability Zone.

Type: String

Required: No

**InstanceCount** (request), **instanceCount** (response)

The number of modified Reserved Instances.

> **Note**
>
> This is a required field for a request.

Type: Integer

Required: No

**InstanceType** (request), **instanceType** (response)

The instance type for the modified Reserved Instances.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge`

| c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large

| m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge

| r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge

| r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge |

m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large |

i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge

Required: No

**Platform** (request), **platform** (response)

The network platform of the modified Reserved Instances.

Type: String

Required: No

**Scope** (request), **scope** (response)

Whether the Reserved Instance is applied to instances in a Region or instances in a specific Availability Zone.

Type: String

Valid Values: `Availability Zone | Region`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservedInstancesId

Describes the ID of a Reserved Instance.

## Contents

**reservedInstancesId**

The ID of the Reserved Instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservedInstancesListing

Describes a Reserved Instance listing.

## Contents

**clientToken**

A unique, case-sensitive key supplied by the client to ensure that the request is idempotent. For more information, see Ensuring Idempotency.

Type: String

Required: No

**createDate**

The time the listing was created.

Type: Timestamp

Required: No

**InstanceCounts.N**

The number of instances in this state.

Type: Array of InstanceCount objects

Required: No

**PriceSchedules.N**

The price of the Reserved Instance listing.

Type: Array of PriceSchedule objects

Required: No

**reservedInstancesId**

The ID of the Reserved Instance.

Type: String

Required: No

**reservedInstancesListingId**

The ID of the Reserved Instance listing.

Type: String

Required: No

**status**

The status of the Reserved Instance listing.

Type: String

Valid Values: `active | pending | cancelled | closed`

Required: No

**statusMessage**

The reason for the current status of the Reserved Instance listing. The response can be blank.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the resource.

Type: Array of Tag objects

Required: No

**updateDate**

The last modified timestamp of the listing.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservedInstancesModification

Describes a Reserved Instance modification.

## Contents

**clientToken**

A unique, case-sensitive key supplied by the client to ensure that the request is idempotent. For more information, see Ensuring Idempotency.

Type: String

Required: No

**createDate**

The time when the modification request was created.

Type: Timestamp

Required: No

**effectiveDate**

The time for the modification to become effective.

Type: Timestamp

Required: No

**ModificationResultSet.N**

Contains target configurations along with their corresponding new Reserved Instance IDs.

Type: Array of ReservedInstancesModificationResult objects

Required: No

**reservedInstancesModificationId**

A unique ID for the Reserved Instance modification.

Type: String

Required: No

**ReservedInstancesSet.N**

The IDs of one or more Reserved Instances.

Type: Array of ReservedInstancesId objects

Required: No

**status**

The status of the Reserved Instances modification request.

Type: String

Required: No

**statusMessage**

The reason for the status.

Type: String

Required: No

**updateDate**

The time when the modification request was last updated.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservedInstancesModificationResult

Describes the modification request/s.

## Contents

**reservedInstancesId**

The ID for the Reserved Instances that were created as part of the modification request. This field is only available when the modification is fulfilled.

Type: String

Required: No

**targetConfiguration**

The target Reserved Instances configurations supplied as part of the modification request.

Type: ReservedInstancesConfiguration object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ReservedInstancesOffering

Describes a Reserved Instance offering.

## Contents

**availabilityZone**

The Availability Zone in which the Reserved Instance can be used.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**currencyCode**

The currency of the Reserved Instance offering you are purchasing. It's specified using ISO 4217 standard currency codes. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

**duration**

The duration of the Reserved Instance, in seconds.

Type: Long

Required: No

**fixedPrice**

The purchase price of the Reserved Instance.

Type: Float

Required: No

**instanceTenancy**

The tenancy of the instance.

Type: String

Valid Values: `default | dedicated | host`

Required: No

**instanceType**

The instance type on which the Reserved Instance can be used.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge`

| g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge

| m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge

| x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge

| r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge

| u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large |

`g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge`

Required: No

**marketplace**

Indicates whether the offering is available through the Reserved Instance Marketplace (resale) or AWS. If it's a Reserved Instance Marketplace offering, this is `true`.

Type: Boolean

Required: No

**offeringClass**

If `convertible` it can be exchanged for Reserved Instances of the same or higher monetary value, with different configurations. If `standard`, it is not possible to perform an exchange.

Type: String

Valid Values: `standard | convertible`

Required: No

**offeringType**

The Reserved Instance offering type.

Type: String

Valid Values: `Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront`

Required: No

**PricingDetailsSet.N**

The pricing details of the Reserved Instance offering.

Type: Array of PricingDetail objects

Required: No

**productDescription**

The Reserved Instance product platform description.

Type: String

Valid Values: `Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)`

Required: No

**RecurringCharges.N**

The recurring charge tag assigned to the resource.

Type: Array of RecurringCharge objects

Required: No

**reservedInstancesOfferingId**

The ID of the Reserved Instance offering. This is the offering ID used in GetReservedInstancesExchangeQuote to confirm that an exchange can be made.

Type: String

Required: No

**scope**

Whether the Reserved Instance is applied to instances in a Region or an Availability Zone.

Type: String

Valid Values: `Availability Zone | Region`

Required: No

**usagePrice**

The usage price of the Reserved Instance, per hour.

Type: Float

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ResourceStatement

Describes a resource statement.

## Contents

**ResourceSet.N**

The resources.

Type: Array of strings

Required: No

**ResourceTypeSet.N**

The resource types.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ResourceStatementRequest

Describes a resource statement.

## Contents

**Resource.N**

The resources.

Type: Array of strings

Required: No

**ResourceType.N**

The resource types.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ResourceTypeOption

The options that affect the scope of the response.

## Contents

**OptionName**

The name of the option.

- For `ec2:Instance`:

  Specify `state-name` - The current state of the EC2 instance.

- For `ec2:LaunchTemplate`:

  Specify `version-depth` - The number of launch template versions to check, starting from the most recent version.

Type: String

Valid Values: `state-name | version-depth`

Required: No

**OptionValue.N**

A value for the specified option.

- For `state-name`:
  - Valid values: `pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`
  - Default: All states
- For `version-depth`:
  - Valid values: Integers between 1 and `10000`
  - Default: `10`

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ResourceTypeRequest

A resource type to check for image references. Associated options can also be specified if the resource type is an EC2 instance or launch template.

## Contents

**ResourceType**

The resource type.

Type: String

Valid Values: `ec2:Instance | ec2:LaunchTemplate | ssm:Parameter | imagebuilder:ImageRecipe | imagebuilder:ContainerRecipe`

Required: No

**ResourceTypeOption.N**

The options that affect the scope of the response. Valid only when `ResourceType` is `ec2:Instance` or `ec2:LaunchTemplate`.

Type: Array of ResourceTypeOption objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ResponseError

Describes the error that's returned when you cannot delete a launch template version.

## Contents

**code**

The error code.

Type: String

Valid Values: `launchTemplateIdDoesNotExist | launchTemplateIdMalformed | launchTemplateNameDoesNotExist | launchTemplateNameMalformed | launchTemplateVersionDoesNotExist | unexpectedError`

Required: No

**message**

The error message, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ResponseLaunchTemplateData

The information for a launch template.

## Contents

**BlockDeviceMappingSet.N**

The block device mappings.

Type: Array of LaunchTemplateBlockDeviceMapping objects

Required: No

**capacityReservationSpecification**

Information about the Capacity Reservation targeting option.

Type: LaunchTemplateCapacityReservationSpecificationResponse object

Required: No

**cpuOptions**

The CPU options for the instance. For more information, see CPU options for Amazon EC2 instances in the *Amazon EC2 User Guide*.

Type: LaunchTemplateCpuOptions object

Required: No

**creditSpecification**

The credit option for CPU usage of the instance.

Type: CreditSpecification object

Required: No

**disableApiStop**

Indicates whether the instance is enabled for stop protection. For more information, see Enable stop protection for your EC2 instances in the *Amazon EC2 User Guide*.

Type: Boolean

Required: No

**disableApiTermination**

If set to `true`, indicates that the instance cannot be terminated using the Amazon EC2 console, command line tool, or API.

Type: Boolean

Required: No

**ebsOptimized**

Indicates whether the instance is optimized for Amazon EBS I/O.

Type: Boolean

Required: No

**ElasticGpuSpecificationSet.N**

Deprecated.

> **Note**
> Amazon Elastic Graphics reached end of life on January 8, 2024.

Type: Array of ElasticGpuSpecificationResponse objects

Required: No

**ElasticInferenceAcceleratorSet.N**

> **Note**
> Amazon Elastic Inference is no longer available.

An elastic inference accelerator to associate with the instance. Elastic inference accelerators are a resource you can attach to your Amazon EC2 instances to accelerate your Deep Learning (DL) inference workloads.

You cannot specify accelerators from different generations in the same request.

Type: Array of LaunchTemplateElasticInferenceAcceleratorResponse objects

Required: No

**enclaveOptions**

Indicates whether the instance is enabled for AWS Nitro Enclaves.

Type: LaunchTemplateEnclaveOptions object

Required: No

**hibernationOptions**

Indicates whether an instance is configured for hibernation. For more information, see Hibernate your Amazon EC2 instance in the *Amazon EC2 User Guide*.

Type: LaunchTemplateHibernationOptions object

Required: No

**iamInstanceProfile**

The IAM instance profile.

Type: LaunchTemplateIamInstanceProfileSpecification object

Required: No

**imageId**

The ID of the AMI or a Systems Manager parameter. The Systems Manager parameter will resolve to the ID of the AMI at instance launch.

The value depends on what you specified in the request. The possible values are:

- If an AMI ID was specified in the request, then this is the AMI ID.
- If a Systems Manager parameter was specified in the request, and `ResolveAlias` was configured as `true`, then this is the AMI ID that the parameter is mapped to in the Parameter Store.
- If a Systems Manager parameter was specified in the request, and `ResolveAlias` was configured as `false`, then this is the parameter value.

For more information, see Use a Systems Manager parameter instead of an AMI ID in the *Amazon EC2 User Guide*.

Type: String

Required: No

**instanceInitiatedShutdownBehavior**

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: String

Valid Values: `stop | terminate`

Required: No

**instanceMarketOptions**

The market (purchasing) option for the instances.

Type: LaunchTemplateInstanceMarketOptions object

Required: No

**instanceRequirements**

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with these attributes.

If you specify `InstanceRequirements`, you can't specify `InstanceTypes`.

Type: InstanceRequirements object

Required: No

**instanceType**

The instance type.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge |`

c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge |

m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge

| r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge |

u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge

| c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge |

i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge

Required: No

**kernelId**

The ID of the kernel, if applicable.

Type: String

Required: No

**keyName**

The name of the key pair.

Type: String

Required: No

**LicenseSet.N**

The license configurations.

Type: Array of LaunchTemplateLicenseConfiguration objects

Required: No

**maintenanceOptions**

The maintenance options for your instance.

Type: LaunchTemplateInstanceMaintenanceOptions object

Required: No

**metadataOptions**

The metadata options for the instance. For more information, see Configure the Instance Metadata Service options in the *Amazon EC2 User Guide*.

Type: LaunchTemplateInstanceMetadataOptions object

Required: No

**monitoring**

The monitoring for the instance.

Type: LaunchTemplatesMonitoring object

Required: No

**NetworkInterfaceSet.N**

The network interfaces.

Type: Array of LaunchTemplateInstanceNetworkInterfaceSpecification objects

Required: No

**networkPerformanceOptions**

Contains the launch template settings for network performance options for your instance.

Type: LaunchTemplateNetworkPerformanceOptions object

Required: No

**operator**

The entity that manages the launch template.

Type: OperatorResponse object

Required: No

**placement**

The placement of the instance.

Type: LaunchTemplatePlacement object

Required: No

**privateDnsNameOptions**

The options for the instance hostname.

Type: LaunchTemplatePrivateDnsNameOptions object

Required: No

**ramDiskId**

The ID of the RAM disk, if applicable.

Type: String

Required: No

**SecondaryInterfaceSet.N**

The secondary interfaces associated with the launch template.

Type: Array of LaunchTemplateInstanceSecondaryInterfaceSpecification objects

Required: No

**SecurityGroupIdSet.N**

The security group IDs.

Type: Array of strings

Required: No

**SecurityGroupSet.N**

The security group names.

Type: Array of strings

Required: No

**TagSpecificationSet.N**

The tags that are applied to the resources that are created during instance launch.

Type: Array of LaunchTemplateTagSpecification objects

Required: No

**userData**

The user data for the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RevokedSecurityGroupRule

A security group rule removed with RevokeSecurityGroupEgress or RevokeSecurityGroupIngress.

## Contents

**cidrIpv4**

The IPv4 CIDR of the traffic source.

Type: String

Required: No

**cidrIpv6**

The IPv6 CIDR of the traffic source.

Type: String

Required: No

**description**

A description of the revoked security group rule.

Type: String

Required: No

**fromPort**

The 'from' port number of the security group rule.

Type: Integer

Required: No

**groupId**

A security group ID.

Type: String

Required: No

**ipProtocol**

The security group rule's protocol.

Type: String

Required: No

**isEgress**

Defines if a security group rule is an outbound rule.

Type: Boolean

Required: No

**prefixListId**

The ID of a prefix list that's the traffic source.

Type: String

Required: No

**referencedGroupId**

The ID of a referenced security group.

Type: String

Required: No

**securityGroupRuleId**

A security group rule ID.

Type: String

Required: No

**toPort**

The 'to' port number of the security group rule.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Route

Describes a route in a route table.

## Contents

**carrierGatewayId**

The ID of the carrier gateway.

Type: String

Required: No

**coreNetworkArn**

The Amazon Resource Name (ARN) of the core network.

Type: String

Required: No

**destinationCidrBlock**

The IPv4 CIDR block used for the destination match.

Type: String

Required: No

**destinationIpv6CidrBlock**

The IPv6 CIDR block used for the destination match.

Type: String

Required: No

**destinationPrefixListId**

The prefix of the AWS service.

Type: String

Required: No

**egressOnlyInternetGatewayId**

The ID of the egress-only internet gateway.

Type: String

Required: No

**gatewayId**

The ID of a gateway attached to your VPC.

Type: String

Required: No

**instanceId**

The ID of a NAT instance in your VPC.

Type: String

Required: No

**instanceOwnerId**

The ID of AWS account that owns the instance.

Type: String

Required: No

**ipAddress**

The next hop IP address for routes propagated by VPC Route Server into VPC route tables.

Type: String

Required: No

**localGatewayId**

The ID of the local gateway.

Type: String

Required: No

**natGatewayId**

The ID of a NAT gateway.

Type: String

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**odbNetworkArn**

The Amazon Resource Name (ARN) of the ODB network.

Type: String

Required: No

**origin**

Describes how the route was created.

- `CreateRouteTable` - The route was automatically created when the route table was created.
- `CreateRoute` - The route was manually added to the route table.
- `EnableVgwRoutePropagation` - The route was propagated by route propagation.
- `Advertisement` - The route was created dynamically by Amazon VPC Route Server.

Type: String

Valid Values: `CreateRouteTable | CreateRoute | EnableVgwRoutePropagation`

Required: No

**state**

The state of the route. The `blackhole` state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, or the specified NAT instance has been terminated).

Type: String

Valid Values: `active | blackhole`

Required: No

**transitGatewayId**

The ID of a transit gateway.

Type: String

Required: No

**vpcPeeringConnectionId**

The ID of a VPC peering connection.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RouteServer

Describes a route server and its configuration.

Amazon VPC Route Server simplifies routing for traffic between workloads that are deployed within a VPC and its internet gateways. With this feature, VPC Route Server dynamically updates VPC and internet gateway route tables with your preferred IPv4 or IPv6 routes to achieve routing fault tolerance for those workloads. This enables you to automatically reroute traffic within a VPC, which increases the manageability of VPC routing and interoperability with third-party workloads.

Route server supports the follow route table types:

- VPC route tables not associated with subnets
- Subnet route tables
- Internet gateway route tables

Route server does not support route tables associated with virtual private gateways. To propagate routes into a transit gateway route table, use Transit Gateway Connect.

## Contents

**amazonSideAsn**

The Border Gateway Protocol (BGP) Autonomous System Number (ASN) for the appliance. Valid values are from 1 to 4294967295. We recommend using a private ASN in the 64512–65534 (16-bit ASN) or 4200000000–4294967294 (32-bit ASN) range.

Type: Long

Required: No

**persistRoutesDuration**

The number of minutes a route server will wait after BGP is re-established to unpersist the routes in the FIB and RIB. Value must be in the range of 1-5. The default value is 1. Only valid if `persistRoutesState` is 'enabled'.

If you set the duration to 1 minute, then when your network appliance re-establishes BGP with route server, it has 1 minute to relearn it's adjacent network and advertise those routes to route server before route server resumes normal functionality. In most cases, 1 minute is probably

sufficient. If, however, you have concerns that your BGP network may not be capable of fully re-establishing and re-learning everything in 1 minute, you can increase the duration up to 5 minutes.

Type: Long

Required: No

**persistRoutesState**

The current state of route persistence for the route server.

Type: String

Valid Values: `enabling | enabled | resetting | disabling | disabled | modifying`

Required: No

**routeServerId**

The unique identifier of the route server.

Type: String

Required: No

**snsNotificationsEnabled**

Indicates whether SNS notifications are enabled for the route server. Enabling SNS notifications persists BGP status changes to an SNS topic provisioned by AWS.

Type: Boolean

Required: No

**snsTopicArn**

The ARN of the SNS topic where notifications are published.

Type: String

Required: No

**state**

The current state of the route server.

Type: String

Valid Values: `pending | available | modifying | deleting | deleted`

Required: No

**TagSet.N**

Any tags assigned to the route server.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RouteServerAssociation

Describes the association between a route server and a VPC.

A route server association is the connection established between a route server and a VPC.

## Contents

**routeServerId**

The ID of the associated route server.

Type: String

Required: No

**state**

The current state of the association.

Type: String

Valid Values: `associating | associated | disassociating`

Required: No

**vpcId**

The ID of the associated VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RouteServerBfdStatus

The current status of Bidirectional Forwarding Detection (BFD) for a BGP session.

## Contents

**status**

The operational status of the BFD session.

Type: String

Valid Values: up | down

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RouteServerBgpOptions

The BGP configuration options for a route server peer.

## Contents

**peerAsn**

The Border Gateway Protocol (BGP) Autonomous System Number (ASN) for the appliance. Valid values are from 1 to 4294967295. We recommend using a private ASN in the 64512–65534 (16-bit ASN) or 4200000000–4294967294 (32-bit ASN) range.

Type: Long

Required: No

**peerLivenessDetection**

The liveness detection protocol used for the BGP peer.

The requested liveness detection protocol for the BGP peer.

- `bgp-keepalive`: The standard BGP keep alive mechanism (RFC4271) that is stable but may take longer to fail-over in cases of network impact or router failure.
- `bfd`: An additional Bidirectional Forwarding Detection (BFD) protocol (RFC5880) that enables fast failover by using more sensitive liveness detection.

Defaults to `bgp-keepalive`.

Type: String

Valid Values: `bfd | bgp-keepalive`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RouteServerBgpOptionsRequest

The BGP configuration options requested for a route server peer.

## Contents

**PeerAsn**

The Border Gateway Protocol (BGP) Autonomous System Number (ASN) for the appliance. Valid values are from 1 to 4294967295. We recommend using a private ASN in the 64512–65534 (16-bit ASN) or 4200000000–4294967294 (32-bit ASN) range.

Type: Long

Required: Yes

**PeerLivenessDetection**

The requested liveness detection protocol for the BGP peer.

- `bgp-keepalive`: The standard BGP keep alive mechanism (RFC4271) that is stable but may take longer to fail-over in cases of network impact or router failure.
- `bfd`: An additional Bidirectional Forwarding Detection (BFD) protocol (RFC5880) that enables fast failover by using more sensitive liveness detection.

Defaults to `bgp-keepalive`.

Type: String

Valid Values: `bfd | bgp-keepalive`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RouteServerBgpStatus

The current status of a BGP session.

## Contents

**status**

The operational status of the BGP session. The status enables you to monitor session liveness if you lack monitoring on your router/appliance.

Type: String

Valid Values: `up` | `down`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RouteServerEndpoint

Describes a route server endpoint and its properties.

A route server endpoint is an AWS-managed component inside a subnet that facilitates BGP (Border Gateway Protocol) connections between your route server and your BGP peers.

## Contents

**eniAddress**

The IP address of the Elastic network interface for the endpoint.

Type: String

Required: No

**eniId**

The ID of the Elastic network interface for the endpoint.

Type: String

Required: No

**failureReason**

The reason for any failure in endpoint creation or operation.

Type: String

Required: No

**routeServerEndpointId**

The unique identifier of the route server endpoint.

Type: String

Required: No

**routeServerId**

The ID of the route server associated with this endpoint.

Type: String

Required: No

**state**

The current state of the route server endpoint.

Type: String

Valid Values: `pending | available | deleting | deleted | failing | failed | delete-failed`

Required: No

**subnetId**

The ID of the subnet to place the route server endpoint into.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the route server endpoint.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC containing the endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# RouteServerPeer

Describes a BGP peer configuration for a route server endpoint.

A route server peer is a session between a route server endpoint and the device deployed in AWS (such as a firewall appliance or other network security function running on an EC2 instance). The device must meet these requirements:

- Have an elastic network interface in the VPC
- Support BGP (Border Gateway Protocol)
- Can initiate BGP sessions

## Contents

**bfdStatus**

The current status of the BFD session with this peer.

Type: RouteServerBfdStatus object

Required: No

**bgpOptions**

The BGP configuration options for this peer, including ASN (Autonomous System Number) and BFD (Bidirectional Forwarding Detection) settings.

Type: RouteServerBgpOptions object

Required: No

**bgpStatus**

The current status of the BGP session with this peer.

Type: RouteServerBgpStatus object

Required: No

**endpointEniAddress**

The IP address of the Elastic network interface for the route server endpoint.

Type: String

Required: No

**endpointEniId**

The ID of the Elastic network interface for the route server endpoint.

Type: String

Required: No

**failureReason**

The reason for any failure in peer creation or operation.

Type: String

Required: No

**peerAddress**

The IPv4 address of the peer device.

Type: String

Required: No

**routeServerEndpointId**

The ID of the route server endpoint associated with this peer.

Type: String

Required: No

**routeServerId**

The ID of the route server associated with this peer.

Type: String

Required: No

**routeServerPeerId**

The unique identifier of the route server peer.

Type: String

Required: No

**state**

The current state of the route server peer.

Type: String

Valid Values: `pending | available | deleting | deleted | failing | failed`

Required: No

**subnetId**

The ID of the subnet containing the route server peer.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the route server peer.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC containing the route server peer.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# RouteServerPropagation

Describes the route propagation configuration between a route server and a route table.

When enabled, route server propagation installs the routes in the FIB on the route table you've specified. Route server supports IPv4 and IPv6 route propagation.

## Contents

**routeServerId**

The ID of the route server configured for route propagation.

Type: String

Required: No

**routeTableId**

The ID of the route table configured for route server propagation.

Type: String

Required: No

**state**

The current state of route propagation.

Type: String

Valid Values: `pending | available | deleting`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# RouteServerRoute

Describes a route in the route server's routing database.

## Contents

**AsPathSet.N**

The AS path attributes of the BGP route.

Type: Array of strings

Required: No

**med**

The Multi-Exit Discriminator (MED) value of the BGP route.

Type: Integer

Required: No

**nextHopIp**

The IP address for the next hop.

Type: String

Required: No

**prefix**

The destination CIDR block of the route.

Type: String

Required: No

**RouteInstallationDetailSet.N**

Details about the installation status of this route in route tables.

Type: Array of RouteServerRouteInstallationDetail objects

Required: No

**routeServerEndpointId**

The ID of the route server endpoint that received this route.

Type: String

Required: No

**routeServerPeerId**

The ID of the route server peer that advertised this route.

Type: String

Required: No

**routeStatus**

The current status of the route in the routing database. Values are `in-rib` or `in-fib` depending on if the routes are in the RIB or the FIB database.

The Routing Information Base (RIB) serves as a database that stores all the routing information and network topology data collected by a router or routing system, such as routes learned from BGP peers. The RIB is constantly updated as new routing information is received or existing routes change. This ensures that the route server always has the most current view of the network topology and can make optimal routing decisions.

The Forwarding Information Base (FIB) serves as a forwarding table for what route server has determined are the best-path routes in the RIB after evaluating all available routing information and policies. The FIB routes are installed on the route tables. The FIB is recomputed whenever there are changes to the RIB.

Type: String

Valid Values: `in-rib | in-fib`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RouteServerRouteInstallationDetail

Describes the installation status of a route in a route table.

## Contents

**routeInstallationStatus**

The current installation status of the route in the route table.

Type: String

Valid Values: `installed | rejected`

Required: No

**routeInstallationStatusReason**

The reason for the current installation status of the route.

Type: String

Required: No

**routeTableId**

The ID of the route table where the route is being installed.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RouteTable

Describes a route table.

## Contents

**AssociationSet.N**

The associations between the route table and your subnets or gateways.

Type: Array of RouteTableAssociation objects

Required: No

**ownerId**

The ID of the AWS account that owns the route table.

Type: String

Required: No

**PropagatingVgwSet.N**

Any virtual private gateway (VGW) propagating routes.

Type: Array of PropagatingVgw objects

Required: No

**RouteSet.N**

The routes in the route table.

Type: Array of Route objects

Required: No

**routeTableId**

The ID of the route table.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the route table.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RouteTableAssociation

Describes an association between a route table and a subnet or gateway.

## Contents

**associationState**

The state of the association.

Type: RouteTableAssociationState object

Required: No

**gatewayId**

The ID of the internet gateway or virtual private gateway.

Type: String

Required: No

**main**

Indicates whether this is the main route table.

Type: Boolean

Required: No

**publicIpv4Pool**

The ID of a public IPv4 pool. A public IPv4 pool is a pool of IPv4 addresses that you've brought to AWS with BYOIP.

Type: String

Required: No

**routeTableAssociationId**

The ID of the association.

Type: String

Required: No

**routeTableId**

The ID of the route table.

Type: String

Required: No

**subnetId**

The ID of the subnet. A subnet ID is not returned for an implicit association.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RouteTableAssociationState

Describes the state of an association between a route table and a subnet or gateway.

## Contents

**state**

The state of the association.

Type: String

Valid Values: `associating | associated | disassociating | disassociated | failed`

Required: No

**statusMessage**

The status message, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RuleGroupRuleOptionsPair

Describes the rule options for a stateful rule group.

## Contents

**ruleGroupArn**

The ARN of the rule group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**RuleOptionSet.N**

The rule options.

Type: Array of RuleOption objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RuleGroupTypePair

Describes the type of a stateful rule group.

## Contents

**ruleGroupArn**

The ARN of the rule group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**ruleGroupType**

The rule group type. The possible values are `Domain List` and `Suricata`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RuleOption

Describes additional settings for a stateful rule.

## Contents

**keyword**

The Suricata keyword.

Type: String

Required: No

**SettingSet.N**

The settings for the keyword.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# RunInstancesMonitoringEnabled

Describes the monitoring of an instance.

## Contents

**Enabled** (request), **enabled** (response)

Indicates whether detailed monitoring is enabled. Otherwise, basic monitoring is enabled.

Type: Boolean

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# S3ObjectTag

The tags to apply to the AMI object that will be stored in the Amazon S3 bucket. For more information, see Categorizing your storage using tags in the *Amazon Simple Storage Service User Guide*.

## Contents

**Key**

The key of the tag.

Constraints: Tag keys are case-sensitive and can be up to 128 Unicode characters in length. May not begin with `aws:`.

Type: String

Required: No

**Value**

The value of the tag.

Constraints: Tag values are case-sensitive and can be up to 256 Unicode characters in length.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# S3Storage

Describes the storage parameters for Amazon S3 and Amazon S3 buckets for an instance store-backed AMI.

## Contents

**AWSAccessKeyId** (request), **AWSAccessKeyId** (response)

The access key ID of the owner of the bucket. Before you specify a value for your access key ID, review and follow the guidance in Best Practices for AWS accounts in the *AWS Account ManagementReference Guide*.

Type: String

Required: No

**Bucket** (request), **bucket** (response)

The bucket in which to store the AMI. You can specify a bucket that you already own or a new bucket that Amazon EC2 creates on your behalf. If you specify a bucket that belongs to someone else, Amazon EC2 returns an error.

Type: String

Required: No

**Prefix** (request), **prefix** (response)

The beginning of the file name of the AMI.

Type: String

Required: No

**UploadPolicy** (request), **uploadPolicy** (response)

An Amazon S3 upload policy that gives Amazon EC2 permission to upload items into Amazon S3 on your behalf.

Type: Base64-encoded binary data object

Required: No

**UploadPolicySignature** (request), **uploadPolicySignature** (response)

The signature of the JSON document.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstance

Describes a Scheduled Instance.

## Contents

**availabilityZone**

The Availability Zone.

Type: String

Required: No

**createDate**

The date when the Scheduled Instance was purchased.

Type: Timestamp

Required: No

**hourlyPrice**

The hourly price for a single instance.

Type: String

Required: No

**instanceCount**

The number of instances.

Type: Integer

Required: No

**instanceType**

The instance type.

Type: String

Required: No

**networkPlatform**

The network platform.

Type: String

Required: No

**nextSlotStartTime**

The time for the next schedule to start.

Type: Timestamp

Required: No

**platform**

The platform (`Linux/UNIX` or `Windows`).

Type: String

Required: No

**previousSlotEndTime**

The time that the previous schedule ended or will end.

Type: Timestamp

Required: No

**recurrence**

The schedule recurrence.

Type: ScheduledInstanceRecurrence object

Required: No

**scheduledInstanceId**

The Scheduled Instance ID.

Type: String

Required: No

**slotDurationInHours**

The number of hours in the schedule.

Type: Integer

Required: No

**termEndDate**

The end date for the Scheduled Instance.

Type: Timestamp

Required: No

**termStartDate**

The start date for the Scheduled Instance.

Type: Timestamp

Required: No

**totalScheduledInstanceHours**

The total number of hours for a single instance for the entire term.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstanceAvailability

Describes a schedule that is available for your Scheduled Instances.

## Contents

**availabilityZone**

The Availability Zone.

Type: String

Required: No

**availableInstanceCount**

The number of available instances.

Type: Integer

Required: No

**firstSlotStartTime**

The time period for the first schedule to start.

Type: Timestamp

Required: No

**hourlyPrice**

The hourly price for a single instance.

Type: String

Required: No

**instanceType**

The instance type. You can specify one of the C3, C4, M4, or R3 instance types.

Type: String

Required: No

**maxTermDurationInDays**

The maximum term. The only possible value is 365 days.

Type: Integer

Required: No

**minTermDurationInDays**

The minimum term. The only possible value is 365 days.

Type: Integer

Required: No

**networkPlatform**

The network platform.

Type: String

Required: No

**platform**

The platform (`Linux/UNIX` or `Windows`).

Type: String

Required: No

**purchaseToken**

The purchase token. This token expires in two hours.

Type: String

Required: No

**recurrence**

The schedule recurrence.

Type: ScheduledInstanceRecurrence object

Required: No

**slotDurationInHours**

The number of hours in the schedule.

Type: Integer

Required: No

**totalScheduledInstanceHours**

The total number of hours for a single instance for the entire term.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstanceRecurrence

Describes the recurring schedule for a Scheduled Instance.

## Contents

**frequency**

The frequency (`Daily`, `Weekly`, or `Monthly`).

Type: String

Required: No

**interval**

The interval quantity. The interval unit depends on the value of `frequency`. For example, every 2 weeks or every 2 months.

Type: Integer

Required: No

**OccurrenceDaySet.N**

The days. For a monthly schedule, this is one or more days of the month (1-31). For a weekly schedule, this is one or more days of the week (1-7, where 1 is Sunday).

Type: Array of integers

Required: No

**occurrenceRelativeToEnd**

Indicates whether the occurrence is relative to the end of the specified week or month.

Type: Boolean

Required: No

**occurrenceUnit**

The unit for `occurrenceDaySet` (`DayOfWeek` or `DayOfMonth`).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstanceRecurrenceRequest

Describes the recurring schedule for a Scheduled Instance.

## Contents

**Frequency**

The frequency (`Daily`, `Weekly`, or `Monthly`).

Type: String

Required: No

**Interval**

The interval quantity. The interval unit depends on the value of `Frequency`. For example, every 2 weeks or every 2 months.

Type: Integer

Required: No

**OccurrenceDay.N**

The days. For a monthly schedule, this is one or more days of the month (1-31). For a weekly schedule, this is one or more days of the week (1-7, where 1 is Sunday). You can't specify this value with a daily schedule. If the occurrence is relative to the end of the month, you can specify only a single day.

Type: Array of integers

Required: No

**OccurrenceRelativeToEnd**

Indicates whether the occurrence is relative to the end of the specified week or month. You can't specify this value with a daily schedule.

Type: Boolean

Required: No

**OccurrenceUnit**

The unit for `OccurrenceDays` (`DayOfWeek` or `DayOfMonth`). This value is required for a monthly schedule. You can't specify `DayOfWeek` with a weekly schedule. You can't specify this value with a daily schedule.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstancesBlockDeviceMapping

Describes a block device mapping for a Scheduled Instance.

## Contents

**DeviceName**

The device name (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: No

**Ebs**

Parameters used to set up EBS volumes automatically when the instance is launched.

Type: ScheduledInstancesEbs object

Required: No

**NoDevice**

To omit the device from the block device mapping, specify an empty string.

Type: String

Required: No

**VirtualName**

The virtual device name (`ephemeralN`). Instance store volumes are numbered starting from 0. An instance type with two available instance store volumes can specify mappings for `ephemeral0` and `ephemeral1`. The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.

Constraints: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstancesEbs

Describes an EBS volume for a Scheduled Instance.

## Contents

**DeleteOnTermination**

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Required: No

**Encrypted**

Indicates whether the volume is encrypted. You can attached encrypted volumes only to instances that support them.

Type: Boolean

Required: No

**Iops**

The number of I/O operations per second (IOPS) to provision for a `gp3`, `io1`, or `io2` volume.

Type: Integer

Required: No

**SnapshotId**

The ID of the snapshot.

Type: String

Required: No

**VolumeSize**

The size of the volume, in GiB.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Type: Integer

Required: No

**VolumeType**

The volume type.

Default: gp2

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstancesIamInstanceProfile

Describes an IAM instance profile for a Scheduled Instance.

## Contents

**Arn**

The Amazon Resource Name (ARN).

Type: String

Required: No

**Name**

The name.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstancesIpv6Address

Describes an IPv6 address.

## Contents

### Ipv6Address

The IPv6 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstancesLaunchSpecification

Describes the launch specification for a Scheduled Instance.

If you are launching the Scheduled Instance in EC2-VPC, you must specify the ID of the subnet. You can specify the subnet using either `SubnetId` or `NetworkInterface`.

## Contents

**ImageId**

The ID of the Amazon Machine Image (AMI).

Type: String

Required: Yes

**BlockDeviceMapping.N**

The block device mapping entries.

Type: Array of ScheduledInstancesBlockDeviceMapping objects

Required: No

**EbsOptimized**

Indicates whether the instances are optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.

Default: `false`

Type: Boolean

Required: No

**IamInstanceProfile**

The IAM instance profile.

Type: ScheduledInstancesIamInstanceProfile object

Required: No

**InstanceType**

The instance type.

Type: String

Required: No

**KernelId**

The ID of the kernel.

Type: String

Required: No

**KeyName**

The name of the key pair.

Type: String

Required: No

**Monitoring**

Enable or disable monitoring for the instances.

Type: ScheduledInstancesMonitoring object

Required: No

**NetworkInterface.N**

The network interfaces.

Type: Array of ScheduledInstancesNetworkInterface objects

Required: No

**Placement**

The placement information.

Type: ScheduledInstancesPlacement object

Required: No

**RamdiskId**

The ID of the RAM disk.

Type: String

Required: No

**SecurityGroupId.N**

The IDs of the security groups.

Type: Array of strings

Required: No

**SubnetId**

The ID of the subnet in which to launch the instances.

Type: String

Required: No

**UserData**

The base64-encoded MIME user data.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstancesMonitoring

Describes whether monitoring is enabled for a Scheduled Instance.

## Contents

**Enabled**

Indicates whether monitoring is enabled.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstancesNetworkInterface

Describes a network interface for a Scheduled Instance.

## Contents

**AssociatePublicIpAddress**

Indicates whether to assign a public IPv4 address to instances launched in a VPC. The public IPv4 address can only be assigned to a network interface for eth0, and can only be assigned to a new network interface, not an existing one. You cannot specify more than one network interface in the request. If launching into a default subnet, the default value is `true`.

AWS charges for all public IPv4 addresses, including public IPv4 addresses associated with running instances and Elastic IP addresses. For more information, see the *Public IPv4 Address* tab on the Amazon VPC pricing page.

Type: Boolean

Required: No

**DeleteOnTermination**

Indicates whether to delete the interface when the instance is terminated.

Type: Boolean

Required: No

**Description**

The description.

Type: String

Required: No

**DeviceIndex**

The index of the device for the network interface attachment.

Type: Integer

Required: No

**Group.N**

The IDs of the security groups.

Type: Array of strings

Required: No

**Ipv6Address.N**

The specific IPv6 addresses from the subnet range.

Type: Array of ScheduledInstancesIpv6Address objects

Required: No

**Ipv6AddressCount**

The number of IPv6 addresses to assign to the network interface. The IPv6 addresses are automatically selected from the subnet range.

Type: Integer

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**PrivateIpAddress**

The IPv4 address of the network interface within the subnet.

Type: String

Required: No

**PrivateIpAddressConfig.N**

The private IPv4 addresses.

Type: Array of ScheduledInstancesPrivateIpAddressConfig objects

Required: No

**SecondaryPrivateIpAddressCount**

The number of secondary private IPv4 addresses.

Type: Integer

Required: No

**SubnetId**

The ID of the subnet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstancesPlacement

Describes the placement for a Scheduled Instance.

## Contents

**AvailabilityZone**

The Availability Zone.

Type: String

Required: No

**GroupName**

The name of the placement group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ScheduledInstancesPrivateIpAddressConfig

Describes a private IPv4 address for a Scheduled Instance.

## Contents

**Primary**

Indicates whether this is a primary IPv4 address. Otherwise, this is a secondary IPv4 address.

Type: Boolean

Required: No

**PrivateIpAddress**

The IPv4 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecondaryInterface

Describes a secondary interface.

## Contents

**attachment**

The attachment information for the secondary interface.

Type: SecondaryInterfaceAttachment object

Required: No

**availabilityZone**

The Availability Zone of the secondary interface.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone of the secondary interface.

Type: String

Required: No

**macAddress**

The MAC address of the secondary interface.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the secondary interface.

Type: String

Required: No

**PrivateIpv4AddressSet.N**

The private IPv4 addresses associated with the secondary interface.

Type: Array of SecondaryInterfaceIpv4Address objects

Required: No

**secondaryInterfaceArn**

The Amazon Resource Name (ARN) of the secondary interface.

Type: String

Required: No

**secondaryInterfaceId**

The ID of the secondary interface.

Type: String

Required: No

**secondaryInterfaceType**

The type of secondary interface.

Type: String

Valid Values: `secondary`

Required: No

**secondaryNetworkId**

The ID of the secondary network.

Type: String

Required: No

**secondaryNetworkType**

The type of the secondary network.

Type: String

Valid Values: `rdma`

Required: No

**secondarySubnetId**

The ID of the secondary subnet.

Type: String

Required: No

**sourceDestCheck**

Indicates whether source/destination checking is enabled.

Type: Boolean

Required: No

**status**

The status of the secondary interface.

Type: String

Valid Values: `available | in-use`

Required: No

**TagSet.N**

The tags assigned to the secondary interface.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# SecondaryInterfaceAttachment

Describes the attachment of a secondary interface to an instance.

## Contents

**attachmentId**

The ID of the attachment.

Type: String

Required: No

**attachTime**

The timestamp when the attachment was created.

Type: Timestamp

Required: No

**deleteOnTermination**

Indicates whether the secondary interface is deleted when the instance is terminated.

The only supported value for this field is `true`.

Type: Boolean

Required: No

**deviceIndex**

The device index of the secondary interface.

Type: Integer

Required: No

**instanceId**

The ID of the instance to which the secondary interface is attached.

Type: String

Required: No

**instanceOwnerId**

The AWS account ID of the owner of the instance.

Type: String

Required: No

**networkCardIndex**

The index of the network card.

Type: Integer

Required: No

**status**

The attachment state.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecondaryInterfaceIpv4Address

Describes a private IPv4 address for a secondary interface.

## Contents

**privateIpAddress**

The private IPv4 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecondaryInterfacePrivateIpAddressSpecification

Describes a private IPv4 address specification for a secondary interface.

## Contents

**privateIpAddress**

The private IPv4 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecondaryInterfacePrivateIpAddressSpecificationRequest

Describes a private IPv4 address specification for a secondary interface request.

## Contents

**PrivateIpAddress**

The private IPv4 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecondaryNetwork

Describes a secondary network.

## Contents

**Ipv4CidrBlockAssociationSet.N**

Information about the IPv4 CIDR blocks associated with the secondary network.

Type: Array of SecondaryNetworkIpv4CidrBlockAssociation objects

Required: No

**ownerId**

The ID of the AWS account that owns the secondary network.

Type: String

Required: No

**secondaryNetworkArn**

The Amazon Resource Name (ARN) of the secondary network.

Type: String

Required: No

**secondaryNetworkId**

The ID of the secondary network.

Type: String

Required: No

**state**

The state of the secondary network.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | delete-in-progress | delete-complete | delete-failed`

Required: No

**stateReason**

The reason for the current state of the secondary network.

Type: String

Required: No

**TagSet.N**

The tags assigned to the secondary network.

Type: Array of Tag objects

Required: No

**type**

The type of the secondary network.

Type: String

Valid Values: `rdma`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecondaryNetworkIpv4CidrBlockAssociation

Describes an IPv4 CIDR block associated with a secondary network.

## Contents

**associationId**

The association ID for the IPv4 CIDR block.

Type: String

Required: No

**cidrBlock**

The IPv4 CIDR block.

Type: String

Required: No

**state**

The state of the CIDR block association.

Type: String

Valid Values: `associating | associated | association-failed | disassociating | disassociated | disassociation-failed`

Required: No

**stateReason**

The reason for the current state of the CIDR block association.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecondarySubnet

Describes a secondary subnet.

## Contents

**availabilityZone**

The Availability Zone of the secondary subnet.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone of the secondary subnet.

Type: String

Required: No

**Ipv4CidrBlockAssociationSet.N**

Information about the IPv4 CIDR blocks associated with the secondary subnet.

Type: Array of SecondarySubnetIpv4CidrBlockAssociation objects

Required: No

**ownerId**

The ID of the AWS account that owns the secondary subnet.

Type: String

Required: No

**secondaryNetworkId**

The ID of the secondary network.

Type: String

Required: No

**secondaryNetworkType**

The type of the secondary network.

Type: String

Valid Values: `rdma`

Required: No

**secondarySubnetArn**

The Amazon Resource Name (ARN) of the secondary subnet.

Type: String

Required: No

**secondarySubnetId**

The ID of the secondary subnet.

Type: String

Required: No

**state**

The state of the secondary subnet.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | delete-in-progress | delete-complete | delete-failed`

Required: No

**stateReason**

The reason for the current state of the secondary subnet.

Type: String

Required: No

**TagSet.N**

The tags assigned to the secondary subnet.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecondarySubnetIpv4CidrBlockAssociation

Describes an IPv4 CIDR block associated with a secondary subnet.

## Contents

**associationId**

The association ID for the IPv4 CIDR block.

Type: String

Required: No

**cidrBlock**

The IPv4 CIDR block.

Type: String

Required: No

**state**

The state of the CIDR block association.

Type: String

Valid Values: `associating | associated | association-failed | disassociating | disassociated | disassociation-failed`

Required: No

**stateReason**

The reason for the current state of the CIDR block association.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecureBlobAttributeValue

## Contents

### Value

Type: Base64-encoded binary data object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecurityGroup

Describes a security group.

## Contents

**groupDescription**

A description of the security group.

Type: String

Required: No

**groupId**

The ID of the security group.

Type: String

Required: No

**groupName**

The name of the security group.

Type: String

Required: No

**IpPermissions.N**

The inbound rules associated with the security group.

Type: Array of IpPermission objects

Required: No

**IpPermissionsEgress.N**

The outbound rules associated with the security group.

Type: Array of IpPermission objects

Required: No

**ownerId**

The AWS account ID of the owner of the security group.

Type: String

Required: No

**securityGroupArn**

The ARN of the security group.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the security group.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC for the security group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecurityGroupForVpc

A security group that can be used by interfaces in the VPC.

## Contents

**description**

The security group's description.

Type: String

Required: No

**groupId**

The security group ID.

Type: String

Required: No

**groupName**

The security group name.

Type: String

Required: No

**ownerId**

The security group owner ID.

Type: String

Required: No

**primaryVpcId**

The VPC ID in which the security group was created.

Type: String

Required: No

**TagSet.N**

The security group tags.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecurityGroupIdentifier

Describes a security group.

## Contents

**groupId**

The ID of the security group.

Type: String

Required: No

**groupName**

The name of the security group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecurityGroupReference

Describes a VPC with a security group that references your security group.

## Contents

**groupId**

The ID of your security group.

Type: String

Required: No

**referencingVpcId**

The ID of the VPC with the referencing security group.

Type: String

Required: No

**transitGatewayId**

The ID of the transit gateway (if applicable).

Type: String

Required: No

**vpcPeeringConnectionId**

The ID of the VPC peering connection (if applicable). For more information about security group referencing for peering connections, see Update your security groups to reference peer security groups in the *VPC Peering Guide*.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecurityGroupRule

Describes a security group rule.

## Contents

**cidrIpv4**

The IPv4 CIDR range.

Type: String

Required: No

**cidrIpv6**

The IPv6 CIDR range.

Type: String

Required: No

**description**

The security group rule description.

Type: String

Required: No

**fromPort**

If the protocol is TCP or UDP, this is the start of the port range. If the protocol is ICMP or ICMPv6, this is the ICMP type or -1 (all ICMP types).

Type: Integer

Required: No

**groupId**

The ID of the security group.

Type: String

Required: No

**groupOwnerId**

The ID of the AWS account that owns the security group.

Type: String

Required: No

**ipProtocol**

The IP protocol name (`tcp`, `udp`, `icmp`, `icmpv6`) or number (see Protocol Numbers).

Use `-1` to specify all protocols.

Type: String

Required: No

**isEgress**

Indicates whether the security group rule is an outbound rule.

Type: Boolean

Required: No

**prefixListId**

The ID of the prefix list.

Type: String

Required: No

**referencedGroupInfo**

Describes the security group that is referenced in the rule.

Type: ReferencedSecurityGroup object

Required: No

**securityGroupRuleArn**

The ARN of the security group rule.

Type: String

Required: No

**securityGroupRuleId**

The ID of the security group rule.

Type: String

Required: No

**TagSet.N**

The tags applied to the security group rule.

Type: Array of Tag objects

Required: No

**toPort**

If the protocol is TCP or UDP, this is the end of the port range. If the protocol is ICMP or ICMPv6, this is the ICMP code or -1 (all ICMP codes). If the start port is -1 (all ICMP types), then the end port must be -1 (all ICMP codes).

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecurityGroupRuleDescription

Describes the description of a security group rule.

You can use this when you want to update the security group rule description for either an inbound or outbound rule.

## Contents

**Description**

The description of the security group rule.

Type: String

Required: No

**SecurityGroupRuleId**

The ID of the security group rule.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecurityGroupRuleRequest

Describes a security group rule.

You must specify exactly one of the following parameters, based on the rule type:

- CidrIpv4
- CidrIpv6
- PrefixListId
- ReferencedGroupId

> **Note**
>
> AWS canonicalizes IPv4 and IPv6 CIDRs. For example, if you specify 100.68.0.18/18 for the CIDR block, AWS canonicalizes the CIDR block to 100.68.0.0/18. Any subsequent DescribeSecurityGroups and DescribeSecurityGroupRules calls will return the canonicalized form of the CIDR block. Additionally, if you attempt to add another rule with the non-canonical form of the CIDR (such as 100.68.0.18/18) and there is already a rule for the canonicalized form of the CIDR block (such as 100.68.0.0/18), the API throws an duplicate rule error.

When you modify a rule, you cannot change the rule type. For example, if the rule uses an IPv4 address range, you must use `CidrIpv4` to specify a new IPv4 address range.

## Contents

**CidrIpv4**

The IPv4 CIDR range. To specify a single IPv4 address, use the /32 prefix length.

Type: String

Required: No

**CidrIpv6**

The IPv6 CIDR range. To specify a single IPv6 address, use the /128 prefix length.

Type: String

Required: No

**Description**

The description of the security group rule.

Type: String

Required: No

**FromPort**

If the protocol is TCP or UDP, this is the start of the port range. If the protocol is ICMP or ICMPv6, this is the ICMP type or -1 (all ICMP types).

Type: Integer

Required: No

**IpProtocol**

The IP protocol name (`tcp`, `udp`, `icmp`, `icmpv6`) or number (see Protocol Numbers).

Use `-1` to specify all protocols.

Type: String

Required: No

**PrefixListId**

The ID of the prefix list.

Type: String

Required: No

**ReferencedGroupId**

The ID of the security group that is referenced in the security group rule.

Type: String

Required: No

**ToPort**

If the protocol is TCP or UDP, this is the end of the port range. If the protocol is ICMP or ICMPv6, this is the ICMP code or -1 (all ICMP codes). If the start port is -1 (all ICMP types), then the end port must be -1 (all ICMP codes).

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecurityGroupRuleUpdate

Describes an update to a security group rule.

## Contents

**SecurityGroupRuleId**

The ID of the security group rule.

Type: String

Required: Yes

**SecurityGroupRule**

Information about the security group rule.

Type: SecurityGroupRuleRequest object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SecurityGroupVpcAssociation

A security group association with a VPC that you made with AssociateSecurityGroupVpc.

## Contents

**groupId**

The association's security group ID.

Type: String

Required: No

**groupOwnerId**

The AWS account ID of the owner of the security group.

Type: String

Required: No

**state**

The association's state.

Type: String

Valid Values: `associating | associated | association-failed | disassociating | disassociated | disassociation-failed`

Required: No

**stateReason**

The association's state reason.

Type: String

Required: No

**vpcId**

The association's VPC ID.

Type: String

Required: No

**vpcOwnerId**

The AWS account ID of the owner of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ServiceConfiguration

Describes a service configuration for a VPC endpoint service.

## Contents

**acceptanceRequired**

Indicates whether requests from other AWS accounts to create an endpoint to the service must first be accepted.

Type: Boolean

Required: No

**AvailabilityZoneIdSet.N**

The IDs of the Availability Zones in which the service is available.

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both

Type: Array of strings

Required: No

**AvailabilityZoneSet.N**

The Availability Zones in which the service is available.

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both

Type: Array of strings

Required: No

**BaseEndpointDnsNameSet.N**

The DNS names for the service.

Type: Array of strings

Required: No

**GatewayLoadBalancerArnSet.N**

The Amazon Resource Names (ARNs) of the Gateway Load Balancers for the service.

Type: Array of strings

Required: No

**managesVpcEndpoints**

Indicates whether the service manages its VPC endpoints. Management of the service VPC endpoints using the VPC endpoint API is restricted.

Type: Boolean

Required: No

**NetworkLoadBalancerArnSet.N**

The Amazon Resource Names (ARNs) of the Network Load Balancers for the service.

Type: Array of strings

Required: No

**payerResponsibility**

The payer responsibility.

Type: String

Valid Values: `ServiceOwner`

Required: No

**privateDnsName**

The private DNS name for the service.

Type: String

Required: No

**privateDnsNameConfiguration**

Information about the endpoint service private DNS name configuration.

Type: PrivateDnsNameConfiguration object

Required: No

**remoteAccessEnabled**

Indicates whether consumers can access the service from a Region other than the Region where the service is hosted.

Type: Boolean

Required: No

**serviceId**

The ID of the service.

Type: String

Required: No

**serviceName**

The name of the service.

Type: String

Required: No

**serviceState**

The service state.

Type: String

Valid Values: `Pending | Available | Deleting | Deleted | Failed`

Required: No

**ServiceType.N**

The type of service.

Type: Array of ServiceTypeDetail objects

Required: No

**SupportedIpAddressTypeSet.N**

The supported IP address types.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 2 items.

Valid Values: `ipv4 | ipv6`

Required: No

**SupportedRegionSet.N**

The supported Regions.

Type: Array of SupportedRegionDetail objects

Required: No

**TagSet.N**

The tags assigned to the service.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ServiceDetail

Describes a VPC endpoint service.

## Contents

**acceptanceRequired**

Indicates whether VPC endpoint connection requests to the service must be accepted by the service owner.

Type: Boolean

Required: No

**AvailabilityZoneIdSet.N**

The IDs of the Availability Zones in which the service is available.

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both

Type: Array of strings

Required: No

**AvailabilityZoneSet.N**

The Availability Zones in which the service is available.

Either `AvailabilityZone` or `AvailabilityZoneId` can be specified, but not both

Type: Array of strings

Required: No

**BaseEndpointDnsNameSet.N**

The DNS names for the service.

Type: Array of strings

Required: No

**managesVpcEndpoints**

Indicates whether the service manages its VPC endpoints. Management of the service VPC endpoints using the VPC endpoint API is restricted.

Type: Boolean

Required: No

**owner**

The AWS account ID of the service owner.

Type: String

Required: No

**payerResponsibility**

The payer responsibility.

Type: String

Valid Values: `ServiceOwner`

Required: No

**privateDnsName**

The private DNS name for the service.

Type: String

Required: No

**PrivateDnsNameSet.N**

The private DNS names assigned to the VPC endpoint service.

Type: Array of PrivateDnsDetails objects

Required: No

**privateDnsNameVerificationState**

The verification state of the VPC endpoint service.

Consumers of the endpoint service cannot use the private name when the state is not `verified`.

Type: String

Valid Values: `pendingVerification | verified | failed`

Required: No

**serviceId**

The ID of the endpoint service.

Type: String

Required: No

**serviceName**

The name of the service.

Type: String

Required: No

**serviceRegion**

The Region where the service is hosted.

Type: String

Required: No

**ServiceType.N**

The type of service.

Type: Array of ServiceTypeDetail objects

Required: No

**SupportedIpAddressTypeSet.N**

The supported IP address types.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 2 items.

Valid Values: `ipv4 | ipv6`

Required: No

**TagSet.N**

The tags assigned to the service.

Type: Array of Tag objects

Required: No

**vpcEndpointPolicySupported**

Indicates whether the service supports endpoint policies.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ServiceLinkVirtualInterface

Describes the service link virtual interfaces that establish connectivity between AWS Outpost and on-premises networks.

## Contents

**configurationState**

The current state of the service link virtual interface.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

**localAddress**

The IPv4 address assigned to the local gateway virtual interface on the Outpost side.

Type: String

Required: No

**outpostArn**

The Outpost Amazon Resource Number (ARN) for the service link virtual interface.

Type: String

Required: No

**outpostId**

The Outpost ID for the service link virtual interface.

Type: String

Required: No

**outpostLagId**

The link aggregation group (LAG) ID for the service link virtual interface.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the service link virtual interface..

Type: String

Required: No

**peerAddress**

The IPv4 peer address for the service link virtual interface.

Type: String

Required: No

**peerBgpAsn**

The ASN for the Border Gateway Protocol (BGP) associated with the service link virtual interface.

Type: Long

Required: No

**serviceLinkVirtualInterfaceArn**

The Amazon Resource Number (ARN) for the service link virtual interface.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**serviceLinkVirtualInterfaceId**

The ID of the service link virtual interface.

Type: String

Required: No

**TagSet.N**

The tags associated with the service link virtual interface.

Type: Array of Tag objects

Required: No

**vlan**

The virtual local area network for the service link virtual interface.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ServiceTypeDetail

Describes the type of service for a VPC endpoint.

## Contents

**serviceType**

The type of service.

Type: String

Valid Values: `Interface | Gateway | GatewayLoadBalancer`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SlotDateTimeRangeRequest

Describes the time period for a Scheduled Instance to start its first schedule. The time period must span less than one day.

## Contents

**EarliestTime**

The earliest date and time, in UTC, for the Scheduled Instance to start.

Type: Timestamp

Required: Yes

**LatestTime**

The latest date and time, in UTC, for the Scheduled Instance to start. This value must be later than or equal to the earliest date and at most three months in the future.

Type: Timestamp

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SlotStartTimeRangeRequest

Describes the time period for a Scheduled Instance to start its first schedule.

## Contents

**EarliestTime**

The earliest date and time, in UTC, for the Scheduled Instance to start.

Type: Timestamp

Required: No

**LatestTime**

The latest date and time, in UTC, for the Scheduled Instance to start.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Snapshot

Describes a snapshot.

## Contents

**availabilityZone**

The Availability Zone or Local Zone of the snapshot. For example, `us-west-1a` (Availability Zone) or `us-west-2-lax-1a` (Local Zone).

Type: String

Required: No

**completionDurationMinutes**

> **Note**
> Only for snapshot copies created with time-based snapshot copy operations.

The completion duration requested for the time-based snapshot copy operation.

Type: Integer

Required: No

**completionTime**

The time stamp when the snapshot was completed.

Type: Timestamp

Required: No

**dataEncryptionKeyId**

The data encryption key identifier for the snapshot. This value is a unique identifier that corresponds to the data encryption key that was used to encrypt the original volume or snapshot copy. Because data encryption keys are inherited by volumes created from snapshots, and vice versa, if snapshots share the same data encryption key identifier, then they belong to the same volume/snapshot lineage. This parameter is only returned by DescribeSnapshots.

Type: String

Required: No

**description**

The description for the snapshot.

Type: String

Required: No

**encrypted**

Indicates whether the snapshot is encrypted.

Type: Boolean

Required: No

**fullSnapshotSizeInBytes**

The full size of the snapshot, in bytes.

> **Important**
>
> This is **not** the incremental size of the snapshot. This is the full snapshot size and represents the size of all the blocks that were written to the source volume at the time the snapshot was created.

Type: Long

Required: No

**kmsKeyId**

The Amazon Resource Name (ARN) of the AWS KMS key that was used to protect the volume encryption key for the parent volume.

Type: String

Required: No

**outpostArn**

The ARN of the Outpost on which the snapshot is stored. For more information, see Amazon EBS local snapshots on Outposts in the *Amazon EBS User Guide*.

Type: String

Required: No

**ownerAlias**

The AWS owner alias, from an Amazon-maintained list (`amazon`). This is not the user-configured AWS account alias set using the IAM console.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the EBS snapshot.

Type: String

Required: No

**progress**

The progress of the snapshot, as a percentage.

Type: String

Required: No

**restoreExpiryTime**

Only for archived snapshots that are temporarily restored. Indicates the date and time when a temporarily restored snapshot will be automatically re-archived.

Type: Timestamp

Required: No

**snapshotId**

The ID of the snapshot. Each snapshot receives a unique identifier when it is created.

Type: String

Required: No

**sseType**

Reserved for future use.

Type: String

Valid Values: `sse-ebs | sse-kms | none`

Required: No

**startTime**

The time stamp when the snapshot was initiated.

Type: Timestamp

Required: No

**status**

The snapshot state.

Type: String

Valid Values: `pending | completed | error | recoverable | recovering`

Required: No

**statusMessage**

Encrypted Amazon EBS snapshots are copied asynchronously. If a snapshot copy operation fails (for example, if the proper AWS KMS permissions are not obtained) this field displays error state details to help you diagnose why the error occurred. This parameter is only returned by DescribeSnapshots.

Type: String

Required: No

**storageTier**

The storage tier in which the snapshot is stored. `standard` indicates that the snapshot is stored in the standard snapshot storage tier and that it is ready for use. `archive` indicates that the snapshot is currently archived and that it must be restored before it can be used.

Type: String

Valid Values: `archive | standard`

Required: No

**TagSet.N**

Any tags assigned to the snapshot.

Type: Array of Tag objects

Required: No

**transferType**

> **Note**
> Only for snapshot copies.

Indicates whether the snapshot copy was created with a standard or time-based snapshot copy operation. Time-based snapshot copy operations complete within the completion duration specified in the request. Standard snapshot copy operations are completed on a best-effort basis.

- `standard` - The snapshot copy was created with a standard snapshot copy operation.
- `time-based` - The snapshot copy was created with a time-based snapshot copy operation.

Type: String

Valid Values: `time-based | standard`

Required: No

**volumeId**

The ID of the volume that was used to create the snapshot. Snapshots created by a copy snapshot operation have an arbitrary volume ID that you should not use for any purpose.

Type: String

Required: No

**volumeSize**

The size of the volume, in GiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SnapshotDetail

Describes the snapshot created from the imported disk.

## Contents

**description**

A description for the snapshot.

Type: String

Required: No

**deviceName**

The block device mapping for the snapshot.

Type: String

Required: No

**diskImageSize**

The size of the disk in the snapshot, in GiB.

Type: Double

Required: No

**format**

The format of the disk image from which the snapshot is created.

Type: String

Required: No

**progress**

The percentage of progress for the task.

Type: String

Required: No

**snapshotId**

The snapshot ID of the disk being imported.

Type: String

Required: No

**status**

A brief status of the snapshot creation.

Type: String

Required: No

**statusMessage**

A detailed status message for the snapshot creation.

Type: String

Required: No

**url**

The URL used to access the disk image.

Type: String

Required: No

**userBucket**

The Amazon S3 bucket for the disk image.

Type: UserBucketDetails object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SnapshotDiskContainer

The disk container object for the import snapshot request.

## Contents

**Description**

The description of the disk image being imported.

Type: String

Required: No

**Format**

The format of the disk image being imported.

Valid values: `VHD` | `VMDK` | `RAW`

Type: String

Required: No

**Url**

The URL to the Amazon S3-based disk image being imported. It can either be a https URL (https://..) or an Amazon S3 URL (s3://..).

Type: String

Required: No

**UserBucket**

The Amazon S3 bucket for the disk image.

Type: UserBucket object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SnapshotInfo

Information about a snapshot.

## Contents

**availabilityZone**

The Availability Zone or Local Zone of the snapshots. For example, `us-west-1a` (Availability Zone) or `us-west-2-lax-1a` (Local Zone).

Type: String

Required: No

**description**

Description specified by the CreateSnapshotRequest that has been applied to all snapshots.

Type: String

Required: No

**encrypted**

Indicates whether the snapshot is encrypted.

Type: Boolean

Required: No

**outpostArn**

The ARN of the Outpost on which the snapshot is stored. For more information, see Amazon EBS local snapshots on Outposts in the *Amazon EBS User Guide*.

Type: String

Required: No

**ownerId**

Account id used when creating this snapshot.

Type: String

Required: No

**progress**

Progress this snapshot has made towards completing.

Type: String

Required: No

**snapshotId**

Snapshot id that can be used to describe this snapshot.

Type: String

Required: No

**sseType**

Reserved for future use.

Type: String

Valid Values: `sse-ebs | sse-kms | none`

Required: No

**startTime**

Time this snapshot was started. This is the same for all snapshots initiated by the same request.

Type: Timestamp

Required: No

**state**

Current state of the snapshot.

Type: String

Valid Values: `pending | completed | error | recoverable | recovering`

Required: No

**TagSet.N**

Tags associated with this snapshot.

Type: Array of Tag objects

Required: No

**volumeId**

Source volume from which this snapshot was created.

Type: String

Required: No

**volumeSize**

Size of the volume from which this snapshot was created.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SnapshotRecycleBinInfo

Information about a snapshot that is currently in the Recycle Bin.

## Contents

**description**

The description for the snapshot.

Type: String

Required: No

**recycleBinEnterTime**

The date and time when the snapshot entered the Recycle Bin.

Type: Timestamp

Required: No

**recycleBinExitTime**

The date and time when the snapshot is to be permanently deleted from the Recycle Bin.

Type: Timestamp

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

**volumeId**

The ID of the volume from which the snapshot was created.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SnapshotTaskDetail

Details about the import snapshot task.

## Contents

**description**

The description of the disk image being imported.

Type: String

Required: No

**diskImageSize**

The size of the disk in the snapshot, in GiB.

Type: Double

Required: No

**encrypted**

Indicates whether the snapshot is encrypted.

Type: Boolean

Required: No

**format**

The format of the disk image from which the snapshot is created.

Type: String

Required: No

**kmsKeyId**

The identifier for the KMS key that was used to create the encrypted snapshot.

Type: String

Required: No

**progress**

The percentage of completion for the import snapshot task.

Type: String

Required: No

**snapshotId**

The snapshot ID of the disk being imported.

Type: String

Required: No

**status**

A brief status for the import snapshot task.

Type: String

Required: No

**statusMessage**

A detailed status message for the import snapshot task.

Type: String

Required: No

**url**

The URL of the disk image from which the snapshot is created.

Type: String

Required: No

**userBucket**

The Amazon S3 bucket for the disk image.

Type: UserBucketDetails object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SnapshotTierStatus

Provides information about a snapshot's storage tier.

## Contents

**archivalCompleteTime**

The date and time when the last archive process was completed.

Type: Timestamp

Required: No

**lastTieringOperationStatus**

The status of the last archive or restore process.

Type: String

Valid Values: `archival-in-progress | archival-completed | archival-failed | temporary-restore-in-progress | temporary-restore-completed | temporary-restore-failed | permanent-restore-in-progress | permanent-restore-completed | permanent-restore-failed`

Required: No

**lastTieringOperationStatusDetail**

A message describing the status of the last archive or restore process.

Type: String

Required: No

**lastTieringProgress**

The progress of the last archive or restore process, as a percentage.

Type: Integer

Required: No

**lastTieringStartTime**

The date and time when the last archive or restore process was started.

Type: Timestamp

Required: No

**ownerId**

The ID of the AWS account that owns the snapshot.

Type: String

Required: No

**restoreExpiryTime**

Only for archived snapshots that are temporarily restored. Indicates the date and time when a temporarily restored snapshot will be automatically re-archived.

Type: Timestamp

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

**status**

The state of the snapshot.

Type: String

Valid Values: `pending | completed | error | recoverable | recovering`

Required: No

**storageTier**

The storage tier in which the snapshot is stored. `standard` indicates that the snapshot is stored in the standard snapshot storage tier and that it is ready for use. `archive` indicates that the snapshot is currently archived and that it must be restored before it can be used.

Type: String

Valid Values: `archive | standard`

Required: No

**TagSet.N**

The tags that are assigned to the snapshot.

Type: Array of Tag objects

Required: No

**volumeId**

The ID of the volume from which the snapshot was created.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotCapacityRebalance

The Spot Instance replacement strategy to use when Amazon EC2 emits a signal that your Spot Instance is at an elevated risk of being interrupted. For more information, see Capacity rebalancing in the *Amazon EC2 User Guide*.

## Contents

**ReplacementStrategy** (request), **replacementStrategy** (response)

The replacement strategy to use. Only available for fleets of type `maintain`.

`launch` - Spot Fleet launches a new replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet. Spot Fleet does not terminate the instances that receive a rebalance notification. You can terminate the old instances, or you can leave them running. You are charged for all instances while they are running.

`launch-before-terminate` - Spot Fleet launches a new replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet, and then, after a delay that you specify (in `TerminationDelay`), terminates the instances that received a rebalance notification.

Type: String

Valid Values: `launch | launch-before-terminate`

Required: No

**TerminationDelay** (request), **terminationDelay** (response)

The amount of time (in seconds) that Amazon EC2 waits before terminating the old Spot Instance after launching a new replacement Spot Instance.

Required when `ReplacementStrategy` is set to `launch-before-terminate`.

Not valid when `ReplacementStrategy` is set to `launch`.

Valid values: Minimum value of `120` seconds. Maximum value of `7200` seconds.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotDatafeedSubscription

Describes the data feed for a Spot Instance.

## Contents

**bucket**

The name of the Amazon S3 bucket where the Spot Instance data feed is located.

Type: String

Required: No

**fault**

The fault codes for the Spot Instance request, if any.

Type: SpotInstanceStateFault object

Required: No

**ownerId**

The AWS account ID of the account.

Type: String

Required: No

**prefix**

The prefix for the data feed files.

Type: String

Required: No

**state**

The state of the Spot Instance data feed subscription.

Type: String

Valid Values: `Active | Inactive`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotFleetLaunchSpecification

Describes the launch specification for one or more Spot Instances. If you include On-Demand capacity in your fleet request or want to specify an EFA network device, you can't use `SpotFleetLaunchSpecification`; you must use LaunchTemplateConfig.

## Contents

**AddressingType** (request), **addressingType** (response)

Deprecated.

Type: String

Required: No

**BlockDeviceMapping.N**

One or more block devices that are mapped to the Spot Instances. You can't specify both a snapshot ID and an encryption value. This is because only blank volumes can be encrypted on creation. If a snapshot is the basis for a volume, it is not blank and its encryption status is used for the volume encryption status.

Type: Array of BlockDeviceMapping objects

Required: No

**EbsOptimized** (request), **ebsOptimized** (response)

Indicates whether the instances are optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Default: `false`

Type: Boolean

Required: No

**GroupSet.N**

The security groups.

If you specify a network interface, you must specify any security groups as part of the network interface instead of using this parameter.

Type: Array of GroupIdentifier objects

Required: No

**IamInstanceProfile** (request), **iamInstanceProfile** (response)

The IAM instance profile.

Type: IamInstanceProfileSpecification object

Required: No

**ImageId** (request), **imageId** (response)

The ID of the AMI.

Type: String

Required: No

**InstanceRequirements** (request), **instanceRequirements** (response)

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

> **Note**
>
> If you specify `InstanceRequirements`, you can't specify `InstanceType`.

Type: InstanceRequirements object

Required: No

**InstanceType** (request), **instanceType** (response)

The instance type.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge |`

c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge |

is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large |

r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge |

m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge | r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge

| m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge | r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge

| i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge | f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge

Required: No

**KernelId** (request), **kernelId** (response)

The ID of the kernel.

Type: String

Required: No

**KeyName** (request), **keyName** (response)

The name of the key pair.

Type: String

Required: No

**Monitoring** (request), **monitoring** (response)

Enable or disable monitoring for the instances.

Type: SpotFleetMonitoring object

Required: No

**NetworkInterfaceSet.N**

The network interfaces.

> **Note**
>
> `SpotFleetLaunchSpecification` does not support Elastic Fabric Adapter (EFA). You must use LaunchTemplateConfig instead.

Type: Array of InstanceNetworkInterfaceSpecification objects

Required: No

**Placement** (request), **placement** (response)

The placement information.

Type: SpotPlacement object

Required: No

**RamdiskId** (request), **ramdiskId** (response)

The ID of the RAM disk. Some kernels require additional drivers at launch. Check the kernel requirements for information about whether you need to specify a RAM disk. To find kernel requirements, refer to the AWS Resource Center and search for the kernel ID.

Type: String

Required: No

**SpotPrice** (request), **spotPrice** (response)

The maximum price per unit hour that you are willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your instances will be interrupted more frequently than if you do not specify this parameter.

Type: String

Required: No

**SubnetId** (request), **subnetId** (response)

The IDs of the subnets in which to launch the instances. To specify multiple subnets, separate them using commas; for example, "subnet-1234abcdeexample1, subnet-0987cdef6example2".

If you specify a network interface, you must specify any subnets as part of the network interface instead of using this parameter.

Type: String

Required: No

**TagSpecificationSet.N**

The tags to apply during creation.

Type: Array of SpotFleetTagSpecification objects

Required: No

**UserData** (request), **userData** (response)

The base64-encoded user data that instances use when starting up. User data is limited to 16 KB.

Type: String

Required: No

**WeightedCapacity** (request), **weightedCapacity** (response)

The number of units provided by the specified instance type. These are the same units that you chose to set the target capacity in terms of instances, or a performance characteristic such as vCPUs, memory, or I/O.

If the target capacity divided by this value is not a whole number, Amazon EC2 rounds the number of instances to the next whole number. If this value is not specified, the default is 1.

> **Note**
>
> When specifying weights, the price used in the `lowestPrice` and `priceCapacityOptimized` allocation strategies is per *unit* hour (where the instance price is divided by the specified weight). However, if all the specified weights are above the requested `TargetCapacity`, resulting in only 1 instance being launched, the price used is per *instance* hour.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotFleetMonitoring

Describes whether monitoring is enabled.

## Contents

**Enabled** (request), **enabled** (response)

Enables monitoring for the instance.

Default: `false`

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotFleetRequestConfig

Describes a Spot Fleet request.

## Contents

**activityStatus**

The progress of the Spot Fleet request. If there is an error, the status is `error`. After all requests are placed, the status is `pending_fulfillment`. If the size of the fleet is equal to or greater than its target capacity, the status is `fulfilled`. If the size of the fleet is decreased, the status is `pending_termination` while Spot Instances are terminating.

Type: String

Valid Values: `error | pending_fulfillment | pending_termination | fulfilled`

Required: No

**createTime**

The creation date and time of the request.

Type: Timestamp

Required: No

**spotFleetRequestConfig**

The configuration of the Spot Fleet request.

Type: SpotFleetRequestConfigData object

Required: No

**spotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

Required: No

**spotFleetRequestState**

The state of the Spot Fleet request.

Type: String

Valid Values: `submitted | active | cancelled | failed | cancelled_running | cancelled_terminating | modifying`

Required: No

**TagSet.N**

The tags for a Spot Fleet resource.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotFleetRequestConfigData

Describes the configuration of a Spot Fleet request.

## Contents

**IamFleetRole** (request), **iamFleetRole** (response)

The Amazon Resource Name (ARN) of an AWS Identity and Access Management (IAM) role that grants the Spot Fleet the permission to request, launch, terminate, and tag instances on your behalf. For more information, see Spot Fleet prerequisites in the *Amazon EC2 User Guide*. Spot Fleet can terminate Spot Instances on your behalf when you cancel its Spot Fleet request using CancelSpotFleetRequests or when the Spot Fleet request expires, if you set `TerminateInstancesWithExpiration`.

Type: String

Required: Yes

**TargetCapacity** (request), **targetCapacity** (response)

The number of units to request for the Spot Fleet. You can choose to set the target capacity in terms of instances or a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O. If the request type is `maintain`, you can specify a target capacity of 0 and add capacity later.

Type: Integer

Required: Yes

**AllocationStrategy** (request), **allocationStrategy** (response)

The strategy that determines how to allocate the target Spot Instance capacity across the Spot Instance pools specified by the Spot Fleet launch configuration. For more information, see Allocation strategies for Spot Instances in the *Amazon EC2 User Guide*.

priceCapacityOptimized (recommended)

Spot Fleet identifies the pools with the highest capacity availability for the number of instances that are launching. This means that we will request Spot Instances from the pools that we believe have the lowest chance of interruption in the near term. Spot Fleet then requests Spot Instances from the lowest priced of these pools.

capacityOptimized

Spot Fleet identifies the pools with the highest capacity availability for the number of instances that are launching. This means that we will request Spot Instances from the pools that we believe have the lowest chance of interruption in the near term. To give certain instance types a higher chance of launching first, use `capacityOptimizedPrioritized`. Set a priority for each instance type by using the `Priority` parameter for `LaunchTemplateOverrides`. You can assign the same priority to different `LaunchTemplateOverrides`. EC2 implements the priorities on a best-effort basis, but optimizes for capacity first. `capacityOptimizedPrioritized` is supported only if your Spot Fleet uses a launch template. Note that if the `OnDemandAllocationStrategy` is set to `prioritized`, the same priority is applied when fulfilling On-Demand capacity.

diversified

Spot Fleet requests instances from all of the Spot Instance pools that you specify.

lowestPrice (not recommended)

> **Important**
>
> We don't recommend the `lowestPrice` allocation strategy because it has the highest risk of interruption for your Spot Instances.

Spot Fleet requests instances from the lowest priced Spot Instance pool that has available capacity. If the lowest priced pool doesn't have available capacity, the Spot Instances come from the next lowest priced pool that has available capacity. If a pool runs out of capacity before fulfilling your desired capacity, Spot Fleet will continue to fulfill your request by drawing from the next lowest priced pool. To ensure that your desired capacity is met, you might receive Spot Instances from several pools. Because this strategy only considers instance price and not capacity availability, it might lead to high interruption rates.

Default: `lowestPrice`

Type: String

Valid Values: `lowestPrice | diversified | capacityOptimized | capacityOptimizedPrioritized | priceCapacityOptimized`

Required: No

**ClientToken** (request), **clientToken** (response)

A unique, case-sensitive identifier that you provide to ensure the idempotency of your listings. This helps to avoid duplicate listings. For more information, see Ensuring Idempotency.

Type: String

Required: No

**Context** (request), **context** (response)

Reserved.

Type: String

Required: No

**ExcessCapacityTerminationPolicy** (request), **excessCapacityTerminationPolicy** (response)

Indicates whether running instances should be terminated if you decrease the target capacity of the Spot Fleet request below the current size of the Spot Fleet.

Supported only for fleets of type `maintain`.

Type: String

Valid Values: `noTermination | default`

Required: No

**FulfilledCapacity** (request), **fulfilledCapacity** (response)

The number of units fulfilled by this request compared to the set target capacity. You cannot set this value.

Type: Double

Required: No

**InstanceInterruptionBehavior** (request), **instanceInterruptionBehavior** (response)

The behavior when a Spot Instance is interrupted. The default is `terminate`.

Type: String

Valid Values: `hibernate | stop | terminate`

Required: No

**InstancePoolsToUseCount** (request), **instancePoolsToUseCount** (response)

The number of Spot pools across which to allocate your target Spot capacity. Valid only when Spot **AllocationStrategy** is set to `lowest-price`. Spot Fleet selects the cheapest Spot pools and evenly allocates your target Spot capacity across the number of Spot pools that you specify.

Note that Spot Fleet attempts to draw Spot Instances from the number of pools that you specify on a best effort basis. If a pool runs out of Spot capacity before fulfilling your target capacity, Spot Fleet will continue to fulfill your request by drawing from the next cheapest pool. To ensure that your target capacity is met, you might receive Spot Instances from more than the number of pools that you specified. Similarly, if most of the pools have no Spot capacity, you might receive your full target capacity from fewer than the number of pools that you specified.

Type: Integer

Required: No

**LaunchSpecifications.N**

The launch specifications for the Spot Fleet request. If you specify `LaunchSpecifications`, you can't specify `LaunchTemplateConfigs`. If you include On-Demand capacity in your request, you must use `LaunchTemplateConfigs`.

> **Note**
>
> If an AMI specified in a launch specification is deregistered or disabled, no new instances can be launched from the AMI. For fleets of type `maintain`, the target capacity will not be maintained.

Type: Array of SpotFleetLaunchSpecification objects

Required: No

**LaunchTemplateConfigs.N**

The launch template and overrides. If you specify `LaunchTemplateConfigs`, you can't specify `LaunchSpecifications`. If you include On-Demand capacity in your request, you must use `LaunchTemplateConfigs`.

Type: Array of LaunchTemplateConfig objects

Required: No

**LoadBalancersConfig** (request), **loadBalancersConfig** (response)

One or more Classic Load Balancers and target groups to attach to the Spot Fleet request. Spot Fleet registers the running Spot Instances with the specified Classic Load Balancers and target groups.

With Network Load Balancers, Spot Fleet cannot register instances that have the following instance types: C1, CC1, CC2, CG1, CG2, CR1, CS1, G1, G2, HI1, HS1, M1, M2, M3, and T1.

Type: LoadBalancersConfig object

Required: No

**OnDemandAllocationStrategy** (request), **onDemandAllocationStrategy** (response)

The order of the launch template overrides to use in fulfilling On-Demand capacity. If you specify `lowestPrice`, Spot Fleet uses price to determine the order, launching the lowest price first. If you specify `prioritized`, Spot Fleet uses the priority that you assign to each Spot Fleet launch template override, launching the highest priority first. If you do not specify a value, Spot Fleet defaults to `lowestPrice`.

Type: String

Valid Values: `lowestPrice | prioritized`

Required: No

**OnDemandFulfilledCapacity** (request), **onDemandFulfilledCapacity** (response)

The number of On-Demand units fulfilled by this request compared to the set target On-Demand capacity.

Type: Double

Required: No

**OnDemandMaxTotalPrice** (request), **onDemandMaxTotalPrice** (response)

The maximum amount per hour for On-Demand Instances that you're willing to pay. You can use the `onDemandMaxTotalPrice` parameter, the `spotMaxTotalPrice` parameter, or both parameters to ensure that your fleet cost does not exceed your budget. If you set a maximum

price per hour for the On-Demand Instances and Spot Instances in your request, Spot Fleet will launch instances until it reaches the maximum amount you're willing to pay. When the maximum amount you're willing to pay is reached, the fleet stops launching instances even if it hasn't met the target capacity.

> **Note**
>
> If your fleet includes T instances that are configured as `unlimited`, and if their average CPU usage exceeds the baseline utilization, you will incur a charge for surplus credits. The `onDemandMaxTotalPrice` does not account for surplus credits, and, if you use surplus credits, your final cost might be higher than what you specified for `onDemandMaxTotalPrice`. For more information, see Surplus credits can incur charges in the *Amazon EC2 User Guide*.

Type: String

Required: No

**OnDemandTargetCapacity** (request), **onDemandTargetCapacity** (response)

The number of On-Demand units to request. You can choose to set the target capacity in terms of instances or a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O. If the request type is `maintain`, you can specify a target capacity of 0 and add capacity later.

Type: Integer

Required: No

**ReplaceUnhealthyInstances** (request), **replaceUnhealthyInstances** (response)

Indicates whether Spot Fleet should replace unhealthy instances.

Type: Boolean

Required: No

**SpotMaintenanceStrategies** (request), **spotMaintenanceStrategies** (response)

The strategies for managing your Spot Instances that are at an elevated risk of being interrupted.

Type: SpotMaintenanceStrategies object

Required: No

**SpotMaxTotalPrice** (request), **spotMaxTotalPrice** (response)

The maximum amount per hour for Spot Instances that you're willing to pay. You can use the `spotMaxTotalPrice` parameter, the `onDemandMaxTotalPrice` parameter, or both parameters to ensure that your fleet cost does not exceed your budget. If you set a maximum price per hour for the On-Demand Instances and Spot Instances in your request, Spot Fleet will launch instances until it reaches the maximum amount you're willing to pay. When the maximum amount you're willing to pay is reached, the fleet stops launching instances even if it hasn't met the target capacity.

> **Note**
>
> If your fleet includes T instances that are configured as `unlimited`, and if their average CPU usage exceeds the baseline utilization, you will incur a charge for surplus credits. The `spotMaxTotalPrice` does not account for surplus credits, and, if you use surplus credits, your final cost might be higher than what you specified for `spotMaxTotalPrice`. For more information, see Surplus credits can incur charges in the *Amazon EC2 User Guide*.

Type: String

Required: No

**SpotPrice** (request), **spotPrice** (response)

The maximum price per unit hour that you are willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your instances will be interrupted more frequently than if you do not specify this parameter.

Type: String

Required: No

**TagSpecification.N**

The key-value pair for tagging the Spot Fleet request on creation. The value for `ResourceType` must be `spot-fleet-request`, otherwise the Spot Fleet request fails. To tag instances at launch, specify the tags in the launch template (valid only if you use `LaunchTemplateConfigs`) or in the `SpotFleetTagSpecification` (valid only if you use `LaunchSpecifications`). For information about tagging after launch, see Tag your resources.

Type: Array of TagSpecification objects

Required: No

**TargetCapacityUnitType** (request), **targetCapacityUnitType** (response)

The unit for the target capacity. You can specify this parameter only when using attribute-based instance type selection.

Default: `units` (the number of instances)

Type: String

Valid Values: `vcpu | memory-mib | units`

Required: No

**TerminateInstancesWithExpiration** (request), **terminateInstancesWithExpiration** (response)

Indicates whether running Spot Instances are terminated when the Spot Fleet request expires.

Type: Boolean

Required: No

**Type** (request), **type** (response)

The type of request. Indicates whether the Spot Fleet only requests the target capacity or also attempts to maintain it. When this value is `request`, the Spot Fleet only places the required requests. It does not attempt to replenish Spot Instances if capacity is diminished, nor does it submit requests in alternative Spot pools if capacity is not available. When this value is `maintain`, the Spot Fleet maintains the target capacity. The Spot Fleet places the required requests to meet capacity and automatically replenishes any interrupted instances. Default: `maintain`. `instant` is listed but is not used by Spot Fleet.

Type: String

Valid Values: `request | maintain | instant`

Required: No

**ValidFrom** (request), **validFrom** (response)

The start date and time of the request, in UTC format (*YYYY-MM-DD*T*HH*:*MM*:*SS*Z). By default, Amazon EC2 starts fulfilling the request immediately.

Type: Timestamp

Required: No

**ValidUntil** (request), **validUntil** (response)

The end date and time of the request, in UTC format (*YYYY-MM-DD*T*HH*:*MM*:*SS*Z). After the end date and time, no new Spot Instance requests are placed or able to fulfill the request. If no value is specified, the Spot Fleet request remains until you cancel it.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotFleetTagSpecification

The tags for a Spot Fleet resource.

## Contents

**ResourceType** (request), **resourceType** (response)

The type of resource. Currently, the only resource type that is supported is `instance`. To tag the Spot Fleet request on creation, use the `TagSpecifications` parameter in `SpotFleetRequestConfigData` .

Type: String

Valid Values: `capacity-reservation | client-vpn-endpoint | customer-gateway | carrier-gateway | coip-pool | declarative-policies-report | dedicated-host | dhcp-options | egress-only-internet-gateway | elastic-ip | elastic-gpu | export-image-task | export-instance-task | fleet | fpga-image | host-reservation | image | image-usage-report | import-image-task | import-snapshot-task | instance | instance-event-window | internet-gateway | ipam | ipam-pool | ipam-scope | ipv4pool-ec2 | ipv6pool-ec2 | key-pair | launch-template | local-gateway | local-gateway-route-table | local-gateway-virtual-interface | local-gateway-virtual-interface-group | local-gateway-route-table-vpc-association | local-gateway-route-table-virtual-interface-group-association | natgateway | network-acl | network-interface | network-insights-analysis | network-insights-path | network-insights-access-scope | network-insights-access-scope-analysis | outpost-lag | placement-group | prefix-list | replace-root-volume-task | reserved-instances | route-table | security-group | security-group-rule | service-link-virtual-interface | snapshot | spot-fleet-request | spot-instances-request | subnet | subnet-cidr-reservation | traffic-mirror-filter | traffic-mirror-session | traffic-mirror-target | transit-gateway | transit-gateway-attachment | transit-gateway-connect-peer | transit-gateway-multicast-domain | transit-gateway-policy-table | transit-gateway-metering-policy | transit-gateway-route-table | transit-gateway-route-table-announcement | volume | vpc | vpc-endpoint | vpc-endpoint-connection | vpc-endpoint-service | vpc-endpoint-service-permission | vpc-peering-connection |`

`vpn-connection | vpn-gateway | vpc-flow-log | capacity-reservation-fleet | traffic-mirror-filter-rule | vpc-endpoint-connection-device-type | verified-access-instance | verified-access-group | verified-access-endpoint | verified-access-policy | verified-access-trust-provider | vpn-connection-device-type | vpc-block-public-access-exclusion | vpc-encryption-control | route-server | route-server-endpoint | route-server-peer | ipam-resource-discovery | ipam-resource-discovery-association | instance-connect-endpoint | verified-access-endpoint-target | ipam-external-resource-verification-token | capacity-block | mac-modification-task | ipam-prefix-list-resolver | ipam-policy | ipam-prefix-list-resolver-target | secondary-interface | secondary-network | secondary-subnet | capacity-manager-data-export | vpn-concentrator | ipam-pool-allocation | capacity-reservation-cancellation-quote`

Required: No

**Tag.N**

The tags.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotInstanceRequest

Describes a Spot Instance request.

## Contents

**actualBlockHourlyPrice**

Deprecated.

Type: String

Required: No

**availabilityZoneGroup**

The Availability Zone group. If you specify the same Availability Zone group for all Spot Instance requests, all Spot Instances are launched in the same Availability Zone.

Type: String

Required: No

**blockDurationMinutes**

Deprecated.

Type: Integer

Required: No

**createTime**

The date and time when the Spot Instance request was created, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

Required: No

**fault**

The fault codes for the Spot Instance request, if any.

Type: SpotInstanceStateFault object

Required: No

**instanceId**

The instance ID, if an instance has been launched to fulfill the Spot Instance request.

Type: String

Required: No

**instanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted.

Type: String

Valid Values: `hibernate | stop | terminate`

Required: No

**launchedAvailabilityZone**

The Availability Zone in which the request is launched.

Either `launchedAvailabilityZone` or `launchedAvailabilityZoneId` can be specified, but not both

Type: String

Required: No

**launchedAvailabilityZoneId**

The ID of the Availability Zone in which the request is launched.

Either `launchedAvailabilityZone` or `launchedAvailabilityZoneId` can be specified, but not both

Type: String

Required: No

**launchGroup**

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Type: String

Required: No

**launchSpecification**

Additional information for launching instances.

Type: LaunchSpecification object

Required: No

**productDescription**

The product description associated with the Spot Instance.

Type: String

Valid Values: `Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)`

Required: No

**spotInstanceRequestId**

The ID of the Spot Instance request.

Type: String

Required: No

**spotPrice**

The maximum price per unit hour that you are willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your instances will be interrupted more frequently than if you do not specify this parameter.

Type: String

Required: No

**state**

The state of the Spot Instance request. Spot request status information helps track your Spot Instance requests. For more information, see Spot request status in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `open | active | closed | cancelled | failed`

Required: No

**status**

The status code and status message describing the Spot Instance request.

Type: SpotInstanceStatus object

Required: No

**TagSet.N**

Any tags assigned to the resource.

Type: Array of Tag objects

Required: No

**type**

The Spot Instance request type.

Type: String

Valid Values: `one-time | persistent`

Required: No

**validFrom**

The start date of the request, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z). The request becomes active at this date and time.

Type: Timestamp

Required: No

**validUntil**

The end date of the request, in UTC format (*YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

- For a persistent request, the request remains active until the `validUntil` date and time is reached. Otherwise, the request remains active until you cancel it.
- For a one-time request, the request remains active until all instances launch, the request is canceled, or the `validUntil` date and time is reached. By default, the request is valid for 7 days from the date the request was created.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotInstanceStateFault

Describes a Spot Instance state change.

## Contents

**code**

The reason code for the Spot Instance state change.

Type: String

Required: No

**message**

The message for the Spot Instance state change.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotInstanceStatus

Describes the status of a Spot Instance request.

## Contents

**code**

The status code. For a list of status codes, see Spot request status codes in the *Amazon EC2 User Guide*.

Type: String

Required: No

**message**

The description for the status code.

Type: String

Required: No

**updateTime**

The date and time of the most recent status update, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotMaintenanceStrategies

The strategies for managing your Spot Instances that are at an elevated risk of being interrupted.

## Contents

**CapacityRebalance** (request), **capacityRebalance** (response)

The Spot Instance replacement strategy to use when Amazon EC2 emits a signal that your Spot Instance is at an elevated risk of being interrupted. For more information, see Capacity rebalancing in the *Amazon EC2 User Guide*.

Type: SpotCapacityRebalance object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotMarketOptions

The options for Spot Instances.

## Contents

**BlockDurationMinutes**

Deprecated.

Type: Integer

Required: No

**InstanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted.

If `Configured` (for `HibernationOptions`) is set to `true`, the `InstanceInterruptionBehavior` parameter is automatically set to `hibernate`. If you set it to `stop` or `terminate`, you'll get an error.

If `Configured` (for `HibernationOptions`) is set to `false` or `null`, the `InstanceInterruptionBehavior` parameter is automatically set to `terminate`. You can also set it to `stop` or `hibernate`.

For more information, see Interruption behavior in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `hibernate | stop | terminate`

Required: No

**MaxPrice**

The maximum hourly price that you're willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your Spot Instances will be interrupted more frequently than if you do not specify this parameter.

If you specify a maximum price, it must be more than USD $0.001. Specifying a value below USD $0.001 will result in an `InvalidParameterValue` error message.

Type: String

Required: No

**SpotInstanceType**

The Spot Instance request type. For RunInstances, persistent Spot Instance requests are only supported when the instance interruption behavior is either `hibernate` or `stop`.

Type: String

Valid Values: `one-time | persistent`

Required: No

**ValidUntil**

The end date of the request, in UTC format (*YYYY-MM-DD*T*HH*:*MM*:*SS*Z). Supported only for persistent requests.

- For a persistent request, the request remains active until the `ValidUntil` date and time is reached. Otherwise, the request remains active until you cancel it.
- For a one-time request, `ValidUntil` is not supported. The request remains active until all instances launch or you cancel the request.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotOptions

Describes the configuration of Spot Instances in an EC2 Fleet.

## Contents

**allocationStrategy**

The strategy that determines how to allocate the target Spot Instance capacity across the Spot Instance pools specified by the EC2 Fleet launch configuration. For more information, see Allocation strategies for Spot Instances in the *Amazon EC2 User Guide*.

price-capacity-optimized (recommended)

EC2 Fleet identifies the pools with the highest capacity availability for the number of instances that are launching. This means that we will request Spot Instances from the pools that we believe have the lowest chance of interruption in the near term. EC2 Fleet then requests Spot Instances from the lowest priced of these pools.

capacity-optimized

EC2 Fleet identifies the pools with the highest capacity availability for the number of instances that are launching. This means that we will request Spot Instances from the pools that we believe have the lowest chance of interruption in the near term. To give certain instance types a higher chance of launching first, use `capacity-optimized-prioritized`. Set a priority for each instance type by using the `Priority` parameter for `LaunchTemplateOverrides`. You can assign the same priority to different `LaunchTemplateOverrides`. EC2 implements the priorities on a best-effort basis, but optimizes for capacity first. `capacity-optimized-prioritized` is supported only if your EC2 Fleet uses a launch template. Note that if the On-Demand `AllocationStrategy` is set to `prioritized`, the same priority is applied when fulfilling On-Demand capacity.

diversified

EC2 Fleet requests instances from all of the Spot Instance pools that you specify.

lowest-price (not recommended)

> **Important**
>
> We don't recommend the `lowest-price` allocation strategy because it has the highest risk of interruption for your Spot Instances.

EC2 Fleet requests instances from the lowest priced Spot Instance pool that has available capacity. If the lowest priced pool doesn't have available capacity, the Spot Instances come from the next lowest priced pool that has available capacity. If a pool runs out of capacity before fulfilling your desired capacity, EC2 Fleet will continue to fulfill your request by drawing from the next lowest priced pool. To ensure that your desired capacity is met, you might receive Spot Instances from several pools. Because this strategy only considers instance price and not capacity availability, it might lead to high interruption rates.

Default: `lowest-price`

Type: String

Valid Values: `lowest-price | diversified | capacity-optimized | capacity-optimized-prioritized | price-capacity-optimized`

Required: No

**instanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted.

Default: `terminate`

Type: String

Valid Values: `hibernate | stop | terminate`

Required: No

**instancePoolsToUseCount**

The number of Spot pools across which to allocate your target Spot capacity. Supported only when `AllocationStrategy` is set to `lowest-price`. EC2 Fleet selects the cheapest Spot pools and evenly allocates your target Spot capacity across the number of Spot pools that you specify.

Note that EC2 Fleet attempts to draw Spot Instances from the number of pools that you specify on a best effort basis. If a pool runs out of Spot capacity before fulfilling your target capacity, EC2 Fleet will continue to fulfill your request by drawing from the next cheapest pool. To ensure that your target capacity is met, you might receive Spot Instances from more than the number of pools that you specified. Similarly, if most of the pools have no Spot capacity, you might receive your full target capacity from fewer than the number of pools that you specified.

Type: Integer

Required: No

**maintenanceStrategies**

The strategies for managing your workloads on your Spot Instances that will be interrupted. Currently only the capacity rebalance strategy is available.

Type: FleetSpotMaintenanceStrategies object

Required: No

**maxTotalPrice**

The maximum amount per hour for Spot Instances that you're willing to pay. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your Spot Instances will be interrupted more frequently than if you do not specify this parameter.

> **Note**
>
> If your fleet includes T instances that are configured as `unlimited`, and if their average CPU usage exceeds the baseline utilization, you will incur a charge for surplus credits. The `maxTotalPrice` does not account for surplus credits, and, if you use surplus credits, your final cost might be higher than what you specified for `maxTotalPrice`. For more information, see Surplus credits can incur charges in the *Amazon EC2 User Guide*.

Type: String

Required: No

**minTargetCapacity**

The minimum target capacity for Spot Instances in the fleet. If this minimum capacity isn't reached, no instances are launched.

Constraints: Maximum value of `1000`. Supported only for fleets of type `instant`.

At least one of the following must be specified: `SingleAvailabilityZone` | `SingleInstanceType`

Type: Integer

Required: No

**singleAvailabilityZone**

Indicates that the fleet launches all Spot Instances into a single Availability Zone.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

**singleInstanceType**

Indicates that the fleet uses a single instance type to launch all Spot Instances in the fleet.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotOptionsRequest

Describes the configuration of Spot Instances in an EC2 Fleet request.

## Contents

### AllocationStrategy

The strategy that determines how to allocate the target Spot Instance capacity across the Spot Instance pools specified by the EC2 Fleet launch configuration. For more information, see Allocation strategies for Spot Instances in the *Amazon EC2 User Guide*.

price-capacity-optimized (recommended)

EC2 Fleet identifies the pools with the highest capacity availability for the number of instances that are launching. This means that we will request Spot Instances from the pools that we believe have the lowest chance of interruption in the near term. EC2 Fleet then requests Spot Instances from the lowest priced of these pools.

capacity-optimized

EC2 Fleet identifies the pools with the highest capacity availability for the number of instances that are launching. This means that we will request Spot Instances from the pools that we believe have the lowest chance of interruption in the near term. To give certain instance types a higher chance of launching first, use `capacity-optimized-prioritized`. Set a priority for each instance type by using the `Priority` parameter for `LaunchTemplateOverrides`. You can assign the same priority to different `LaunchTemplateOverrides`. EC2 implements the priorities on a best-effort basis, but optimizes for capacity first. `capacity-optimized-prioritized` is supported only if your EC2 Fleet uses a launch template. Note that if the On-Demand `AllocationStrategy` is set to `prioritized`, the same priority is applied when fulfilling On-Demand capacity.

diversified

EC2 Fleet requests instances from all of the Spot Instance pools that you specify.

lowest-price (not recommended)

> **Important**
>
> We don't recommend the `lowest-price` allocation strategy because it has the highest risk of interruption for your Spot Instances.

EC2 Fleet requests instances from the lowest priced Spot Instance pool that has available capacity. If the lowest priced pool doesn't have available capacity, the Spot Instances come from the next lowest priced pool that has available capacity. If a pool runs out of capacity before fulfilling your desired capacity, EC2 Fleet will continue to fulfill your request by drawing from the next lowest priced pool. To ensure that your desired capacity is met, you might receive Spot Instances from several pools. Because this strategy only considers instance price and not capacity availability, it might lead to high interruption rates.

Default: `lowest-price`

Type: String

Valid Values: `lowest-price | diversified | capacity-optimized | capacity-optimized-prioritized | price-capacity-optimized`

Required: No

**InstanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted.

Default: `terminate`

Type: String

Valid Values: `hibernate | stop | terminate`

Required: No

**InstancePoolsToUseCount**

The number of Spot pools across which to allocate your target Spot capacity. Supported only when Spot `AllocationStrategy` is set to `lowest-price`. EC2 Fleet selects the cheapest Spot pools and evenly allocates your target Spot capacity across the number of Spot pools that you specify.

Note that EC2 Fleet attempts to draw Spot Instances from the number of pools that you specify on a best effort basis. If a pool runs out of Spot capacity before fulfilling your target capacity, EC2 Fleet will continue to fulfill your request by drawing from the next cheapest pool. To ensure that your target capacity is met, you might receive Spot Instances from more than the number of pools that you specified. Similarly, if most of the pools have no Spot capacity, you might receive your full target capacity from fewer than the number of pools that you specified.

Type: Integer

Required: No

**MaintenanceStrategies**

The strategies for managing your Spot Instances that are at an elevated risk of being interrupted.

Type: FleetSpotMaintenanceStrategiesRequest object

Required: No

**MaxTotalPrice**

The maximum amount per hour for Spot Instances that you're willing to pay. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your Spot Instances will be interrupted more frequently than if you do not specify this parameter.

> **Note**
>
> If your fleet includes T instances that are configured as `unlimited`, and if their average CPU usage exceeds the baseline utilization, you will incur a charge for surplus credits. The `MaxTotalPrice` does not account for surplus credits, and, if you use surplus credits, your final cost might be higher than what you specified for `MaxTotalPrice`. For more information, see Surplus credits can incur charges in the *Amazon EC2 User Guide*.

Type: String

Required: No

**MinTargetCapacity**

The minimum target capacity for Spot Instances in the fleet. If this minimum capacity isn't reached, no instances are launched.

Constraints: Maximum value of `1000`. Supported only for fleets of type `instant`.

At least one of the following must be specified: `SingleAvailabilityZone` | `SingleInstanceType`

Type: Integer

Required: No

**SingleAvailabilityZone**

Indicates that the fleet launches all Spot Instances into a single Availability Zone.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

**SingleInstanceType**

Indicates that the fleet uses a single instance type to launch all Spot Instances in the fleet.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotPlacement

Describes Spot Instance placement.

## Contents

**AvailabilityZone** (request), **availabilityZone** (response)

The Availability Zone. For example, `us-east-2a`.

[Spot Fleet only] To specify multiple Availability Zones, separate them using commas; for example, "`us-east-2a`, `us-east-2b`".

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: String

Required: No

**AvailabilityZoneId** (request), **availabilityZoneId** (response)

The ID of the Availability Zone. For example, `use2-az1`.

[Spot Fleet only] To specify multiple Availability Zones, separate them using commas; for example, "`use2-az1`, `use2-bz1`".

Either `AvailabilityZone` or `AvailabilityZoneId` must be specified in the request, but not both.

Type: String

Required: No

**GroupName** (request), **groupName** (response)

The name of the placement group.

Type: String

Required: No

**Tenancy** (request), **tenancy** (response)

The tenancy of the instance (if the instance is running in a VPC). An instance with a tenancy of `dedicated` runs on single-tenant hardware. The `host` tenancy is not supported for Spot Instances.

Type: String

Valid Values: `default | dedicated | host`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SpotPlacementScore

The Spot placement score for this Region or Availability Zone. The score is calculated based on the assumption that the `capacity-optimized` allocation strategy is used and that all of the Availability Zones in the Region can be used.

## Contents

**availabilityZoneId**

The Availability Zone.

Type: String

Required: No

**region**

The Region.

Type: String

Required: No

**score**

The placement score, on a scale from `1` to `10`. A score of `10` indicates that your Spot request is highly likely to succeed in this Region or Availability Zone. A score of `1` indicates that your Spot request is not likely to succeed.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# SpotPrice

The maximum price per unit hour that you are willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your instances will be interrupted more frequently than if you do not specify this parameter.

## Contents

**availabilityZone**

The Availability Zone.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**instanceType**

The instance type.

Type: String

Valid Values: `a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge`

| c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6g.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gd.metal | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | c6i.metal | cc1.4xlarge | cc2.8xlarge | cg1.4xlarge | cr1.8xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge | g5g.xlarge | g5g.2xlarge | g5g.4xlarge | g5g.8xlarge | g5g.16xlarge | g5g.metal | hi1.4xlarge | hpc6a.48xlarge | hs1.8xlarge | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | im4gn.large | im4gn.xlarge | im4gn.2xlarge | im4gn.4xlarge | im4gn.8xlarge | im4gn.16xlarge | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | is4gen.medium | is4gen.large | is4gen.xlarge | is4gen.2xlarge | is4gen.4xlarge | is4gen.8xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m5.large | m5.xlarge |

m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | m6a.large | m6a.xlarge | m6a.2xlarge | m6a.4xlarge | m6a.8xlarge | m6a.12xlarge | m6a.16xlarge | m6a.24xlarge | m6a.32xlarge | m6a.48xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | m6i.metal | mac1.metal | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | r6g.medium | r6g.large | r6g.xlarge |

r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6g.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | r6gd.metal | r6i.large | r6i.xlarge | r6i.2xlarge | r6i.4xlarge | r6i.8xlarge | r6i.12xlarge | r6i.16xlarge | r6i.24xlarge | r6i.32xlarge | r6i.metal | t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | x2iezn.2xlarge | x2iezn.4xlarge | x2iezn.6xlarge | x2iezn.8xlarge | x2iezn.12xlarge | x2iezn.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | x2idn.16xlarge | x2idn.24xlarge | x2idn.32xlarge | x2iedn.xlarge | x2iedn.2xlarge | x2iedn.4xlarge | x2iedn.8xlarge | x2iedn.16xlarge | x2iedn.24xlarge | x2iedn.32xlarge | c6a.large | c6a.xlarge | c6a.2xlarge | c6a.4xlarge | c6a.8xlarge | c6a.12xlarge | c6a.16xlarge | c6a.24xlarge | c6a.32xlarge | c6a.48xlarge | c6a.metal | m6a.metal | i4i.large | i4i.xlarge | i4i.2xlarge | i4i.4xlarge | i4i.8xlarge | i4i.16xlarge | i4i.32xlarge | i4i.metal | x2idn.metal | x2iedn.metal | c7g.medium | c7g.large | c7g.xlarge | c7g.2xlarge | c7g.4xlarge | c7g.8xlarge | c7g.12xlarge | c7g.16xlarge | mac2.metal | c6id.large | c6id.xlarge | c6id.2xlarge | c6id.4xlarge | c6id.8xlarge | c6id.12xlarge | c6id.16xlarge | c6id.24xlarge | c6id.32xlarge | c6id.metal | m6id.large | m6id.xlarge | m6id.2xlarge | m6id.4xlarge | m6id.8xlarge | m6id.12xlarge | m6id.16xlarge | m6id.24xlarge | m6id.32xlarge | m6id.metal | r6id.large | r6id.xlarge | r6id.2xlarge | r6id.4xlarge | r6id.8xlarge | r6id.12xlarge | r6id.16xlarge | r6id.24xlarge | r6id.32xlarge | r6id.metal | r6a.large | r6a.xlarge | r6a.2xlarge | r6a.4xlarge | r6a.8xlarge | r6a.12xlarge

| r6a.16xlarge | r6a.24xlarge | r6a.32xlarge | r6a.48xlarge | r6a.metal | p4de.24xlarge | u-3tb1.56xlarge | u-18tb1.112xlarge | u-24tb1.112xlarge | trn1.2xlarge | trn1.32xlarge | hpc6id.32xlarge | c6in.large | c6in.xlarge | c6in.2xlarge | c6in.4xlarge | c6in.8xlarge | c6in.12xlarge | c6in.16xlarge | c6in.24xlarge | c6in.32xlarge | m6in.large | m6in.xlarge | m6in.2xlarge | m6in.4xlarge | m6in.8xlarge | m6in.12xlarge | m6in.16xlarge | m6in.24xlarge | m6in.32xlarge | m6idn.large | m6idn.xlarge | m6idn.2xlarge | m6idn.4xlarge | m6idn.8xlarge | m6idn.12xlarge | m6idn.16xlarge | m6idn.24xlarge | m6idn.32xlarge | r6in.large | r6in.xlarge | r6in.2xlarge | r6in.4xlarge | r6in.8xlarge | r6in.12xlarge | r6in.16xlarge | r6in.24xlarge | r6in.32xlarge | r6idn.large | r6idn.xlarge | r6idn.2xlarge | r6idn.4xlarge | r6idn.8xlarge | r6idn.12xlarge | r6idn.16xlarge | r6idn.24xlarge | r6idn.32xlarge | c7g.metal | m7g.medium | m7g.large | m7g.xlarge | m7g.2xlarge | m7g.4xlarge | m7g.8xlarge | m7g.12xlarge | m7g.16xlarge | m7g.metal | r7g.medium | r7g.large | r7g.xlarge | r7g.2xlarge | r7g.4xlarge | r7g.8xlarge | r7g.12xlarge | r7g.16xlarge | r7g.metal | c6in.metal | m6in.metal | m6idn.metal | r6in.metal | r6idn.metal | inf2.xlarge | inf2.8xlarge | inf2.24xlarge | inf2.48xlarge | trn1n.32xlarge | i4g.large | i4g.xlarge | i4g.2xlarge | i4g.4xlarge | i4g.8xlarge | i4g.16xlarge | hpc7g.4xlarge | hpc7g.8xlarge | hpc7g.16xlarge | c7gn.medium | c7gn.large | c7gn.xlarge | c7gn.2xlarge | c7gn.4xlarge | c7gn.8xlarge | c7gn.12xlarge | c7gn.16xlarge | p5.48xlarge | m7i.large | m7i.xlarge | m7i.2xlarge | m7i.4xlarge | m7i.8xlarge | m7i.12xlarge | m7i.16xlarge | m7i.24xlarge | m7i.48xlarge | m7i-flex.large | m7i-flex.xlarge | m7i-flex.2xlarge | m7i-flex.4xlarge | m7i-flex.8xlarge | m7a.medium | m7a.large | m7a.xlarge | m7a.2xlarge | m7a.4xlarge | m7a.8xlarge | m7a.12xlarge | m7a.16xlarge | m7a.24xlarge | m7a.32xlarge | m7a.48xlarge | m7a.metal-48xl | hpc7a.12xlarge | hpc7a.24xlarge | hpc7a.48xlarge | hpc7a.96xlarge | c7gd.medium | c7gd.large | c7gd.xlarge | c7gd.2xlarge | c7gd.4xlarge | c7gd.8xlarge | c7gd.12xlarge | c7gd.16xlarge | m7gd.medium | m7gd.large | m7gd.xlarge | m7gd.2xlarge | m7gd.4xlarge | m7gd.8xlarge | m7gd.12xlarge | m7gd.16xlarge | r7gd.medium | r7gd.large | r7gd.xlarge | r7gd.2xlarge | r7gd.4xlarge | r7gd.8xlarge | r7gd.12xlarge | r7gd.16xlarge | r7a.medium | r7a.large | r7a.xlarge | r7a.2xlarge | r7a.4xlarge | r7a.8xlarge |

r7a.12xlarge | r7a.16xlarge | r7a.24xlarge | r7a.32xlarge | r7a.48xlarge | c7i.large | c7i.xlarge | c7i.2xlarge | c7i.4xlarge | c7i.8xlarge | c7i.12xlarge | c7i.16xlarge | c7i.24xlarge | c7i.48xlarge | mac2-m2pro.metal | r7iz.large | r7iz.xlarge | r7iz.2xlarge | r7iz.4xlarge | r7iz.8xlarge | r7iz.12xlarge | r7iz.16xlarge | r7iz.32xlarge | c7a.medium | c7a.large | c7a.xlarge | c7a.2xlarge | c7a.4xlarge | c7a.8xlarge | c7a.12xlarge | c7a.16xlarge | c7a.24xlarge | c7a.32xlarge | c7a.48xlarge | c7a.metal-48xl | r7a.metal-48xl | r7i.large | r7i.xlarge | r7i.2xlarge | r7i.4xlarge | r7i.8xlarge | r7i.12xlarge | r7i.16xlarge | r7i.24xlarge | r7i.48xlarge | dl2q.24xlarge | mac2-m2.metal | i4i.12xlarge | i4i.24xlarge | c7i.metal-24xl | c7i.metal-48xl | m7i.metal-24xl | m7i.metal-48xl | r7i.metal-24xl | r7i.metal-48xl | r7iz.metal-16xl | r7iz.metal-32xl | c7gd.metal | m7gd.metal | r7gd.metal | g6.xlarge | g6.2xlarge | g6.4xlarge | g6.8xlarge | g6.12xlarge | g6.16xlarge | g6.24xlarge | g6.48xlarge | gr6.4xlarge | gr6.8xlarge | c7i-flex.large | c7i-flex.xlarge | c7i-flex.2xlarge | c7i-flex.4xlarge | c7i-flex.8xlarge | u7i-12tb.224xlarge | u7in-16tb.224xlarge | u7in-24tb.224xlarge | u7in-32tb.224xlarge | u7ib-12tb.224xlarge | c7gn.metal | r8g.medium | r8g.large | r8g.xlarge | r8g.2xlarge | r8g.4xlarge | r8g.8xlarge | r8g.12xlarge | r8g.16xlarge | r8g.24xlarge | r8g.48xlarge | r8g.metal-24xl | r8g.metal-48xl | mac2-m1ultra.metal | g6e.xlarge | g6e.2xlarge | g6e.4xlarge | g6e.8xlarge | g6e.12xlarge | g6e.16xlarge | g6e.24xlarge | g6e.48xlarge | c8g.medium | c8g.large | c8g.xlarge | c8g.2xlarge | c8g.4xlarge | c8g.8xlarge | c8g.12xlarge | c8g.16xlarge | c8g.24xlarge | c8g.48xlarge | c8g.metal-24xl | c8g.metal-48xl | m8g.medium | m8g.large | m8g.xlarge | m8g.2xlarge | m8g.4xlarge | m8g.8xlarge | m8g.12xlarge | m8g.16xlarge | m8g.24xlarge | m8g.48xlarge | m8g.metal-24xl | m8g.metal-48xl | x8g.medium | x8g.large | x8g.xlarge | x8g.2xlarge | x8g.4xlarge | x8g.8xlarge | x8g.12xlarge | x8g.16xlarge | x8g.24xlarge | x8g.48xlarge | x8g.metal-24xl | x8g.metal-48xl | i7ie.large | i7ie.xlarge | i7ie.2xlarge | i7ie.3xlarge | i7ie.6xlarge | i7ie.12xlarge | i7ie.18xlarge | i7ie.24xlarge | i7ie.48xlarge | i8g.large | i8g.xlarge | i8g.2xlarge | i8g.4xlarge | i8g.8xlarge | i8g.12xlarge | i8g.16xlarge | i8g.24xlarge | i8g.metal-24xl | u7i-6tb.112xlarge | u7i-8tb.112xlarge | u7inh-32tb.480xlarge | p5e.48xlarge | p5en.48xlarge

| f2.12xlarge | f2.48xlarge | trn2.48xlarge | c7i-flex.12xlarge | c7i-flex.16xlarge | m7i-flex.12xlarge | m7i-flex.16xlarge | i7ie.metal-24xl | i7ie.metal-48xl | i8g.48xlarge | c8gd.medium | c8gd.large | c8gd.xlarge | c8gd.2xlarge | c8gd.4xlarge | c8gd.8xlarge | c8gd.12xlarge | c8gd.16xlarge | c8gd.24xlarge | c8gd.48xlarge | c8gd.metal-24xl | c8gd.metal-48xl | i7i.large | i7i.xlarge | i7i.2xlarge | i7i.4xlarge | i7i.8xlarge | i7i.12xlarge | i7i.16xlarge | i7i.24xlarge | i7i.48xlarge | i7i.metal-24xl | i7i.metal-48xl | p6-b200.48xlarge | m8gd.medium | m8gd.large | m8gd.xlarge | m8gd.2xlarge | m8gd.4xlarge | m8gd.8xlarge | m8gd.12xlarge | m8gd.16xlarge | m8gd.24xlarge | m8gd.48xlarge | m8gd.metal-24xl | m8gd.metal-48xl | r8gd.medium | r8gd.large | r8gd.xlarge | r8gd.2xlarge | r8gd.4xlarge | r8gd.8xlarge | r8gd.12xlarge | r8gd.16xlarge | r8gd.24xlarge | r8gd.48xlarge | r8gd.metal-24xl | r8gd.metal-48xl | c8gn.medium | c8gn.large | c8gn.xlarge | c8gn.2xlarge | c8gn.4xlarge | c8gn.8xlarge | c8gn.12xlarge | c8gn.16xlarge | c8gn.24xlarge | c8gn.48xlarge | c8gn.metal-24xl | c8gn.metal-48xl | f2.6xlarge | p6e-gb200.36xlarge | g6f.large | g6f.xlarge | g6f.2xlarge | g6f.4xlarge | gr6f.4xlarge | p5.4xlarge | r8i.large | r8i.xlarge | r8i.2xlarge | r8i.4xlarge | r8i.8xlarge | r8i.12xlarge | r8i.16xlarge | r8i.24xlarge | r8i.32xlarge | r8i.48xlarge | r8i.96xlarge | r8i.metal-48xl | r8i.metal-96xl | r8i-flex.large | r8i-flex.xlarge | r8i-flex.2xlarge | r8i-flex.4xlarge | r8i-flex.8xlarge | r8i-flex.12xlarge | r8i-flex.16xlarge

Required: No

**productDescription**

A general description of the AMI.

Type: String

Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

Required: No

**spotPrice**

The maximum price per unit hour that you are willing to pay for a Spot Instance. We do not recommend using this parameter because it can lead to increased interruptions. If you do not specify this parameter, you will pay the current Spot price.

> **Important**
>
> If you specify a maximum price, your instances will be interrupted more frequently than if you do not specify this parameter.

Type: String

Required: No

**timestamp**

The date and time the request was created, in UTC format (for example, *YYYY-MM-DD*T*HH*:*MM*:*SS*Z).

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# StaleIpPermission

Describes a stale rule in a security group.

## Contents

**fromPort**

If the protocol is TCP or UDP, this is the start of the port range. If the protocol is ICMP or ICMPv6, this is the ICMP type or -1 (all ICMP types).

Type: Integer

Required: No

**Groups.N**

The security group pairs. Returns the ID of the referenced security group and VPC, and the ID and status of the VPC peering connection.

Type: Array of UserIdGroupPair objects

Required: No

**ipProtocol**

The IP protocol name (`tcp`, `udp`, `icmp`, `icmpv6`) or number (see Protocol Numbers).

Type: String

Required: No

**IpRanges.N**

The IP ranges. Not applicable for stale security group rules.

Type: Array of strings

Required: No

**PrefixListIds.N**

The prefix list IDs. Not applicable for stale security group rules.

Type: Array of strings

Required: No

**toPort**

If the protocol is TCP or UDP, this is the end of the port range. If the protocol is ICMP or ICMPv6, this is the ICMP code or -1 (all ICMP codes).

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# StaleSecurityGroup

Describes a stale security group (a security group that contains stale rules).

## Contents

**description**

The description of the security group.

Type: String

Required: No

**groupId**

The ID of the security group.

Type: String

Required: No

**groupName**

The name of the security group.

Type: String

Required: No

**StaleIpPermissions.N**

Information about the stale inbound rules in the security group.

Type: Array of StaleIpPermission objects

Required: No

**StaleIpPermissionsEgress.N**

Information about the stale outbound rules in the security group.

Type: Array of StaleIpPermission objects

Required: No

**vpcId**

The ID of the VPC for the security group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# StateReason

Describes a state change.

## Contents

**code**

The reason code for the state change.

Type: String

Required: No

**message**

The message for the state change.

- `Server.InsufficientInstanceCapacity`: There was insufficient capacity available to satisfy the launch request.
- `Server.InternalError`: An internal error caused the instance to terminate during launch.
- `Server.ScheduledStop`: The instance was stopped due to a scheduled retirement.
- `Server.SpotInstanceShutdown`: The instance was stopped because the number of Spot requests with a maximum price equal to or higher than the Spot price exceeded available capacity or because of an increase in the Spot price.
- `Server.SpotInstanceTermination`: The instance was terminated because the number of Spot requests with a maximum price equal to or higher than the Spot price exceeded available capacity or because of an increase in the Spot price.
- `Client.InstanceInitiatedShutdown`: The instance was shut down from the operating system of the instance.
- `Client.InstanceTerminated`: The instance was terminated or rebooted during AMI creation.
- `Client.InternalError`: A client error caused the instance to terminate during launch.
- `Client.InvalidSnapshot.NotFound`: The specified snapshot was not found.
- `Client.UserInitiatedHibernate`: Hibernation was initiated on the instance.
- `Client.UserInitiatedShutdown`: The instance was shut down using the Amazon EC2 API.
- `Client.VolumeLimitExceeded`: The limit on the number of EBS volumes or total storage was exceeded. Decrease usage or request an increase in your account limits.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Storage

Describes the storage location for an instance store-backed AMI.

## Contents

**S3** (request), **S3** (response)

An Amazon S3 storage location.

Type: S3Storage object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# StorageLocation

Describes a storage location in Amazon S3.

## Contents

**Bucket**

The name of the S3 bucket.

Type: String

Required: No

**Key**

The key.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# StoreImageTaskResult

The information about the AMI store task, including the progress of the task.

## Contents

**amiId**

The ID of the AMI that is being stored.

Type: String

Required: No

**bucket**

The name of the Amazon S3 bucket that contains the stored AMI object.

Type: String

Required: No

**progressPercentage**

The progress of the task as a percentage.

Type: Integer

Required: No

**s3objectKey**

The name of the stored AMI object in the bucket.

Type: String

Required: No

**storeTaskFailureReason**

If the tasks fails, the reason for the failure is returned. If the task succeeds, `null` is returned.

Type: String

Required: No

**storeTaskState**

The state of the store task (`InProgress`, `Completed`, or `Failed`).

Type: String

Required: No

**taskStartTime**

The time the task started.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Subnet

Describes a subnet.

## Contents

**assignIpv6AddressOnCreation**

Indicates whether a network interface created in this subnet (including a network interface created by RunInstances) receives an IPv6 address.

Type: Boolean

Required: No

**availabilityZone**

The Availability Zone of the subnet.

Type: String

Required: No

**availabilityZoneId**

The AZ ID of the subnet.

Type: String

Required: No

**availableIpAddressCount**

The number of unused private IPv4 addresses in the subnet. The IPv4 addresses for any stopped instances are considered unavailable.

Type: Integer

Required: No

**blockPublicAccessStates**

The state of VPC Block Public Access (BPA).

Type: BlockPublicAccessStates object

Required: No

**cidrBlock**

The IPv4 CIDR block assigned to the subnet.

Type: String

Required: No

**customerOwnedIpv4Pool**

The customer-owned IPv4 address pool associated with the subnet.

Type: String

Required: No

**defaultForAz**

Indicates whether this is the default subnet for the Availability Zone.

Type: Boolean

Required: No

**enableDns64**

Indicates whether DNS queries made to the Amazon-provided DNS Resolver in this subnet should return synthetic IPv6 addresses for IPv4-only destinations.

Type: Boolean

Required: No

**enableLniAtDeviceIndex**

Indicates the device position for local network interfaces in this subnet. For example, 1 indicates local network interfaces in this subnet are the secondary network interface (eth1).

Type: Integer

Required: No

**Ipv6CidrBlockAssociationSet.N**

Information about the IPv6 CIDR blocks associated with the subnet.

Type: Array of SubnetIpv6CidrBlockAssociation objects

Required: No

**ipv6Native**

Indicates whether this is an IPv6 only subnet.

Type: Boolean

Required: No

**mapCustomerOwnedIpOnLaunch**

Indicates whether a network interface created in this subnet (including a network interface created by RunInstances) receives a customer-owned IPv4 address.

Type: Boolean

Required: No

**mapPublicIpOnLaunch**

Indicates whether instances launched in this subnet receive a public IPv4 address.

AWS charges for all public IPv4 addresses, including public IPv4 addresses associated with running instances and Elastic IP addresses. For more information, see the *Public IPv4 Address* tab on the Amazon VPC pricing page.

Type: Boolean

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the subnet.

Type: String

Required: No

**privateDnsNameOptionsOnLaunch**

The type of hostnames to assign to instances in the subnet at launch. An instance hostname is based on the IPv4 address or ID of the instance.

Type: PrivateDnsNameOptionsOnLaunch object

Required: No

**state**

The current state of the subnet.

- `failed`: The underlying infrastructure to support the subnet failed to provision as expected.
- `failed-insufficient-capacity`: The underlying infrastructure to support the subnet failed to provision due to a shortage of EC2 instance capacity.

Type: String

Valid Values: `pending | available | unavailable | failed | failed-insufficient-capacity`

Required: No

**subnetArn**

The Amazon Resource Name (ARN) of the subnet.

Type: String

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the subnet.

Type: Array of Tag objects

Required: No

**type**

Indicates if this is a subnet used with Amazon Elastic VMware Service (EVS). Possible values are `Elastic VMware Service` or no value. For more information about Amazon EVS, see *Amazon Elastic VMware Service API Reference*.

Type: String

Required: No

**vpcId**

The ID of the VPC the subnet is in.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SubnetAssociation

Describes the subnet association with the transit gateway multicast domain.

## Contents

**state**

The state of the subnet association.

Type: String

Valid Values: `pendingAcceptance | associating | associated | disassociating | disassociated | rejected | failed`

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SubnetCidrBlockState

Describes the state of a CIDR block.

## Contents

**state**

The state of a CIDR block.

Type: String

Valid Values: `associating | associated | disassociating | disassociated | failing | failed`

Required: No

**statusMessage**

A message about the status of the CIDR block, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SubnetCidrReservation

Describes a subnet CIDR reservation.

## Contents

**cidr**

The CIDR that has been reserved.

Type: String

Required: No

**description**

The description assigned to the subnet CIDR reservation.

Type: String

Required: No

**ownerId**

The ID of the account that owns the subnet CIDR reservation.

Type: String

Required: No

**reservationType**

The type of reservation.

Type: String

Valid Values: `prefix | explicit`

Required: No

**subnetCidrReservationId**

The ID of the subnet CIDR reservation.

Type: String

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

**TagSet.N**

The tags assigned to the subnet CIDR reservation.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SubnetConfiguration

Describes the configuration of a subnet for a VPC endpoint.

## Contents

**Ipv4**

The IPv4 address to assign to the endpoint network interface in the subnet. You must provide an IPv4 address if the VPC endpoint supports IPv4.

If you specify an IPv4 address when modifying a VPC endpoint, we replace the existing endpoint network interface with a new endpoint network interface with this IP address. This process temporarily disconnects the subnet and the VPC endpoint.

Type: String

Required: No

**Ipv6**

The IPv6 address to assign to the endpoint network interface in the subnet. You must provide an IPv6 address if the VPC endpoint supports IPv6.

If you specify an IPv6 address when modifying a VPC endpoint, we replace the existing endpoint network interface with a new endpoint network interface with this IP address. This process temporarily disconnects the subnet and the VPC endpoint.

Type: String

Required: No

**SubnetId**

The ID of the subnet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SubnetIpPrefixes

Prefixes of the subnet IP.

## Contents

**IpPrefixSet.N**

Array of SubnetIpPrefixes objects.

Type: Array of strings

Required: No

**subnetId**

ID of the subnet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SubnetIpv6CidrBlockAssociation

Describes an association between a subnet and an IPv6 CIDR block.

## Contents

**associationId**

The ID of the association.

Type: String

Required: No

**ipSource**

The source that allocated the IP address space. `byoip` or `amazon` indicates public IP address space allocated by Amazon or space that you have allocated with Bring your own IP (BYOIP). `none` indicates private space.

Type: String

Valid Values: `amazon | byoip | none`

Required: No

**ipv6AddressAttribute**

Public IPv6 addresses are those advertised on the internet from AWS. Private IP addresses are not and cannot be advertised on the internet from AWS.

Type: String

Valid Values: `public | private`

Required: No

**ipv6CidrBlock**

The IPv6 CIDR block.

Type: String

Required: No

**ipv6CidrBlockState**

The state of the CIDR block.

Type: SubnetCidrBlockState object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Subscription

Describes an Infrastructure Performance subscription.

## Contents

**destination**

The Region or Availability Zone that's the target for the subscription. For example, `eu-west-1`.

Type: String

Required: No

**metric**

The metric used for the subscription.

Type: String

Valid Values: `aggregate-latency`

Required: No

**period**

The data aggregation time for the subscription.

Type: String

Valid Values: `five-minutes | fifteen-minutes | one-hour | three-hours | one-day | one-week`

Required: No

**source**

The Region or Availability Zone that's the source for the subscription. For example, `us-east-1`.

Type: String

Required: No

**statistic**

The statistic used for the subscription.

Type: String

Valid Values: `p50`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SuccessfulInstanceCreditSpecificationItem

Describes the burstable performance instance whose credit option for CPU usage was successfully modified.

## Contents

**instanceId**

The ID of the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SuccessfulQueuedPurchaseDeletion

Describes a Reserved Instance whose queued purchase was successfully deleted.

## Contents

**reservedInstancesId**

The ID of the Reserved Instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# SupportedRegionDetail

Describes a supported Region.

## Contents

**region**

The Region code.

Type: String

Required: No

**serviceState**

The service state. The possible values are `Pending`, `Available`, `Deleting`, `Deleted`, `Failed`, and `Closed`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Tag

Describes a tag.

## Contents

**Key** (request), **key** (response)

The key of the tag.

Constraints: Tag keys are case-sensitive and accept a maximum of 127 Unicode characters. May not begin with `aws:`.

Type: String

Required: No

**Value** (request), **value** (response)

The value of the tag.

Constraints: Tag values are case-sensitive and accept a maximum of 256 Unicode characters.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TagDescription

Describes a tag.

## Contents

**key**

The tag key.

Type: String

Required: No

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceType**

The resource type.

Type: String

Valid Values: `capacity-reservation | client-vpn-endpoint | customer-gateway | carrier-gateway | coip-pool | declarative-policies-report | dedicated-host | dhcp-options | egress-only-internet-gateway | elastic-ip | elastic-gpu | export-image-task | export-instance-task | fleet | fpga-image | host-reservation | image | image-usage-report | import-image-task | import-snapshot-task | instance | instance-event-window | internet-gateway | ipam | ipam-pool | ipam-scope | ipv4pool-ec2 | ipv6pool-ec2 | key-pair | launch-template | local-gateway | local-gateway-route-table | local-gateway-virtual-interface | local-gateway-virtual-interface-group | local-gateway-route-table-vpc-association | local-gateway-route-table-virtual-interface-group-association | natgateway | network-acl | network-interface | network-insights-analysis | network-insights-path | network-insights-access-scope | network-insights-access-scope-analysis | outpost-lag | placement-group | prefix-`

list | replace-root-volume-task | reserved-instances | route-table | security-group | security-group-rule | service-link-virtual-interface | snapshot | spot-fleet-request | spot-instances-request | subnet | subnet-cidr-reservation | traffic-mirror-filter | traffic-mirror-session | traffic-mirror-target | transit-gateway | transit-gateway-attachment | transit-gateway-connect-peer | transit-gateway-multicast-domain | transit-gateway-policy-table | transit-gateway-metering-policy | transit-gateway-route-table | transit-gateway-route-table-announcement | volume | vpc | vpc-endpoint | vpc-endpoint-connection | vpc-endpoint-service | vpc-endpoint-service-permission | vpc-peering-connection | vpn-connection | vpn-gateway | vpc-flow-log | capacity-reservation-fleet | traffic-mirror-filter-rule | vpc-endpoint-connection-device-type | verified-access-instance | verified-access-group | verified-access-endpoint | verified-access-policy | verified-access-trust-provider | vpn-connection-device-type | vpc-block-public-access-exclusion | vpc-encryption-control | route-server | route-server-endpoint | route-server-peer | ipam-resource-discovery | ipam-resource-discovery-association | instance-connect-endpoint | verified-access-endpoint-target | ipam-external-resource-verification-token | capacity-block | mac-modification-task | ipam-prefix-list-resolver | ipam-policy | ipam-prefix-list-resolver-target | secondary-interface | secondary-network | secondary-subnet | capacity-manager-data-export | vpn-concentrator | ipam-pool-allocation | capacity-reservation-cancellation-quote

Required: No

**value**

The tag value.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TagFieldSpecificationRequest

A single resource's tag configuration associated with the Flow Logs Amazon EC2 Tags feature fields in your custom log format.

## Contents

**ResourceType**

The resource type for the tag keys associated with the Flow Logs Amazon EC2 Tags feature fields in your custom log format.

Type: String

Valid Values: `network-interface | instance | auto-scaling-group`

Required: No

**TagKey.N**

The tag keys on your tagged resources to be displayed by the Flow Logs Amazon EC2 Tags feature fields in your custom log format.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 2 items.

Length Constraints: Minimum length of 1. Maximum length of 128.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TagFieldSpecificationResponse

A single resource's tag configuration associated with the Flow Logs Amazon EC2 Tags feature fields in your custom log format.

## Contents

**resourceType**

The resource type for the tag keys associated with the Flow Logs Amazon EC2 Tags feature fields in your custom log format.

Type: String

Valid Values: `network-interface | instance | auto-scaling-group`

Required: No

**TagKeySet.N**

The tag keys on your tagged resources to be displayed by the Flow Logs Amazon EC2 Tags feature fields in your custom log format.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 2 items.

Length Constraints: Minimum length of 1. Maximum length of 128.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TagSpecification

The tags to apply to a resource when the resource is being created. When you specify a tag, you must specify the resource type to tag, otherwise the request will fail.

> **Note**
>
> The `Valid Values` lists all the resource types that can be tagged. However, the action you're using might not support tagging all of these resource types. If you try to tag a resource type that is unsupported for the action you're using, you'll get an error.

## Contents

**ResourceType** (request), **resourceType** (response)

The type of resource to tag on creation.

Type: String

Valid Values: `capacity-reservation | client-vpn-endpoint | customer-gateway | carrier-gateway | coip-pool | declarative-policies-report | dedicated-host | dhcp-options | egress-only-internet-gateway | elastic-ip | elastic-gpu | export-image-task | export-instance-task | fleet | fpga-image | host-reservation | image | image-usage-report | import-image-task | import-snapshot-task | instance | instance-event-window | internet-gateway | ipam | ipam-pool | ipam-scope | ipv4pool-ec2 | ipv6pool-ec2 | key-pair | launch-template | local-gateway | local-gateway-route-table | local-gateway-virtual-interface | local-gateway-virtual-interface-group | local-gateway-route-table-vpc-association | local-gateway-route-table-virtual-interface-group-association | natgateway | network-acl | network-interface | network-insights-analysis | network-insights-path | network-insights-access-scope | network-insights-access-scope-analysis | outpost-lag | placement-group | prefix-list | replace-root-volume-task | reserved-instances | route-table | security-group | security-group-rule | service-link-virtual-interface | snapshot | spot-fleet-request | spot-instances-request | subnet | subnet-cidr-reservation | traffic-mirror-filter | traffic-mirror-`

```
session | traffic-mirror-target | transit-gateway | transit-gateway-
attachment | transit-gateway-connect-peer | transit-gateway-multicast-
domain | transit-gateway-policy-table | transit-gateway-metering-policy
| transit-gateway-route-table | transit-gateway-route-table-announcement
| volume | vpc | vpc-endpoint | vpc-endpoint-connection | vpc-endpoint-
service | vpc-endpoint-service-permission | vpc-peering-connection |
vpn-connection | vpn-gateway | vpc-flow-log | capacity-reservation-
fleet | traffic-mirror-filter-rule | vpc-endpoint-connection-device-type
| verified-access-instance | verified-access-group | verified-access-
endpoint | verified-access-policy | verified-access-trust-provider |
vpn-connection-device-type | vpc-block-public-access-exclusion | vpc-
encryption-control | route-server | route-server-endpoint | route-
server-peer | ipam-resource-discovery | ipam-resource-discovery-
association | instance-connect-endpoint | verified-access-endpoint-
target | ipam-external-resource-verification-token | capacity-block |
mac-modification-task | ipam-prefix-list-resolver | ipam-policy | ipam-
prefix-list-resolver-target | secondary-interface | secondary-network
| secondary-subnet | capacity-manager-data-export | vpn-concentrator |
ipam-pool-allocation | capacity-reservation-cancellation-quote
```

Required: No

**Tag.N**

The tags to apply to the resource.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TargetCapacitySpecification

The number of units to request. You can choose to set the target capacity in terms of instances or a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O. If the request type is `maintain`, you can specify a target capacity of 0 and add capacity later.

You can use the On-Demand Instance `MaxTotalPrice` parameter, the Spot Instance `MaxTotalPrice`, or both to ensure that your fleet cost does not exceed your budget. If you set a maximum price per hour for the On-Demand Instances and Spot Instances in your request, EC2 Fleet will launch instances until it reaches the maximum amount that you're willing to pay. When the maximum amount you're willing to pay is reached, the fleet stops launching instances even if it hasn't met the target capacity. The `MaxTotalPrice` parameters are located in OnDemandOptions and SpotOptions.

## Contents

**defaultTargetCapacityType**

The default target capacity type.

Type: String

Valid Values: `spot | on-demand | capacity-block | reserved-capacity`

Required: No

**onDemandTargetCapacity**

The number of On-Demand units to request. If you specify a target capacity for Spot units, you cannot specify a target capacity for On-Demand units.

Type: Integer

Required: No

**spotTargetCapacity**

The maximum number of Spot units to launch. If you specify a target capacity for On-Demand units, you cannot specify a target capacity for Spot units.

Type: Integer

Required: No

**targetCapacityUnitType**

The unit for the target capacity.

Type: String

Valid Values: `vcpu | memory-mib | units`

Required: No

**totalTargetCapacity**

The number of units to request, filled the default target capacity type.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TargetCapacitySpecificationRequest

The number of units to request. You can choose to set the target capacity as the number of instances. Or you can set the target capacity to a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O. If the request type is `maintain`, you can specify a target capacity of 0 and add capacity later.

You can use the On-Demand Instance `MaxTotalPrice` parameter, the Spot Instance `MaxTotalPrice` parameter, or both parameters to ensure that your fleet cost does not exceed your budget. If you set a maximum price per hour for the On-Demand Instances and Spot Instances in your request, EC2 Fleet will launch instances until it reaches the maximum amount that you're willing to pay. When the maximum amount you're willing to pay is reached, the fleet stops launching instances even if it hasn't met the target capacity. The `MaxTotalPrice` parameters are located in OnDemandOptionsRequest and SpotOptionsRequest.

## Contents

**TotalTargetCapacity**

The number of units to request, filled using the default target capacity type.

Type: Integer

Required: Yes

**DefaultTargetCapacityType**

The default target capacity type.

Type: String

Valid Values: `spot | on-demand | capacity-block | reserved-capacity`

Required: No

**OnDemandTargetCapacity**

The number of On-Demand units to request.

Type: Integer

Required: No

**SpotTargetCapacity**

The number of Spot units to request.

Type: Integer

Required: No

**TargetCapacityUnitType**

The unit for the target capacity. You can specify this parameter only when using attributed-based instance type selection.

Default: `units` (the number of instances)

Type: String

Valid Values: `vcpu | memory-mib | units`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TargetConfiguration

Information about the Convertible Reserved Instance offering.

## Contents

**instanceCount**

The number of instances the Convertible Reserved Instance offering can be applied to. This parameter is reserved and cannot be specified in a request

Type: Integer

Required: No

**offeringId**

The ID of the Convertible Reserved Instance offering.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TargetConfigurationRequest

Details about the target configuration.

## Contents

**OfferingId**

The Convertible Reserved Instance offering ID.

Type: String

Required: Yes

**InstanceCount**

The number of instances the Convertible Reserved Instance offering can be applied to. This parameter is reserved and cannot be specified in a request

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TargetGroup

Describes a load balancer target group.

## Contents

**Arn** (request), **arn** (response)

The Amazon Resource Name (ARN) of the target group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TargetGroupsConfig

Describes the target groups to attach to a Spot Fleet. Spot Fleet registers the running Spot Instances with these target groups.

## Contents

**TargetGroups.N**

One or more target groups.

Type: Array of TargetGroup objects

Array Members: Minimum number of 1 item. Maximum number of 5 items.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TargetNetwork

Describes a target network associated with a Client VPN endpoint.

## Contents

**associationId**

The ID of the association.

Type: String

Required: No

**AvailabilityZoneIdSet.N**

The Availability Zone IDs for the target network association, if the Client VPN endpoint uses a Transit Gateway.

Type: Array of strings

Required: No

**AvailabilityZoneSet.N**

The Availability Zone names for the target network association, if the Client VPN endpoint uses a Transit Gateway.

Type: Array of strings

Required: No

**clientVpnEndpointId**

The ID of the Client VPN endpoint with which the target network is associated.

Type: String

Required: No

**SecurityGroups.N**

The IDs of the security groups applied to the target network association.

Type: Array of strings

Required: No

**status**

The current state of the target network association.

Type: AssociationStatus object

Required: No

**targetNetworkId**

The ID of the subnet specified as the target network.

Type: String

Required: No

**vpcId**

The ID of the VPC in which the target network (subnet) is located.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TargetReservationValue

The total value of the new Convertible Reserved Instances.

## Contents

**reservationValue**

The total value of the Convertible Reserved Instances that make up the exchange. This is the sum of the list value, remaining upfront price, and additional upfront cost of the exchange.

Type: ReservationValue object

Required: No

**targetConfiguration**

The configuration of the Convertible Reserved Instances that make up the exchange.

Type: TargetConfiguration object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TerminateConnectionStatus

Information about a terminated Client VPN endpoint client connection.

## Contents

**connectionId**

The ID of the client connection.

Type: String

Required: No

**currentStatus**

A message about the status of the client connection, if applicable.

Type: ClientVpnConnectionStatus object

Required: No

**previousStatus**

The state of the client connection.

Type: ClientVpnConnectionStatus object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ThroughResourcesStatement

Describes a through resource statement.

## Contents

**resourceStatement**

The resource statement.

Type: ResourceStatement object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ThroughResourcesStatementRequest

Describes a through resource statement.

## Contents

**ResourceStatement**

The resource statement.

Type: ResourceStatementRequest object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TotalLocalStorageGB

The minimum and maximum amount of total local storage, in GB.

## Contents

**Max** (request), **max** (response)

The maximum amount of total local storage, in GB. If this parameter is not specified, there is no maximum limit.

Type: Double

Required: No

**Min** (request), **min** (response)

The minimum amount of total local storage, in GB. If this parameter is not specified, there is no minimum limit.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TotalLocalStorageGBRequest

The minimum and maximum amount of total local storage, in GB.

## Contents

**Max**

The maximum amount of total local storage, in GB. To specify no maximum limit, omit this parameter.

Type: Double

Required: No

**Min**

The minimum amount of total local storage, in GB. To specify no minimum limit, omit this parameter.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TrafficMirrorFilter

Describes the Traffic Mirror filter.

## Contents

**description**

The description of the Traffic Mirror filter.

Type: String

Required: No

**EgressFilterRuleSet.N**

Information about the egress rules that are associated with the Traffic Mirror filter.

Type: Array of TrafficMirrorFilterRule objects

Required: No

**IngressFilterRuleSet.N**

Information about the ingress rules that are associated with the Traffic Mirror filter.

Type: Array of TrafficMirrorFilterRule objects

Required: No

**NetworkServiceSet.N**

The network service traffic that is associated with the Traffic Mirror filter.

Type: Array of strings

Valid Values: `amazon-dns`

Required: No

**TagSet.N**

The tags assigned to the Traffic Mirror filter.

Type: Array of Tag objects

Required: No

**trafficMirrorFilterId**

The ID of the Traffic Mirror filter.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TrafficMirrorFilterRule

Describes the Traffic Mirror rule.

## Contents

**description**

The description of the Traffic Mirror rule.

Type: String

Required: No

**destinationCidrBlock**

The destination CIDR block assigned to the Traffic Mirror rule.

Type: String

Required: No

**destinationPortRange**

The destination port range assigned to the Traffic Mirror rule.

Type: TrafficMirrorPortRange object

Required: No

**protocol**

The protocol assigned to the Traffic Mirror rule.

Type: Integer

Required: No

**ruleAction**

The action assigned to the Traffic Mirror rule.

Type: String

Valid Values: `accept | reject`

Required: No

**ruleNumber**

The rule number of the Traffic Mirror rule.

Type: Integer

Required: No

**sourceCidrBlock**

The source CIDR block assigned to the Traffic Mirror rule.

Type: String

Required: No

**sourcePortRange**

The source port range assigned to the Traffic Mirror rule.

Type: TrafficMirrorPortRange object

Required: No

**TagSet.N**

Tags on Traffic Mirroring filter rules.

Type: Array of Tag objects

Required: No

**trafficDirection**

The traffic direction assigned to the Traffic Mirror rule.

Type: String

Valid Values: `ingress | egress`

Required: No

**trafficMirrorFilterId**

The ID of the Traffic Mirror filter that the rule is associated with.

Type: String

Required: No

**trafficMirrorFilterRuleId**

The ID of the Traffic Mirror rule.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TrafficMirrorPortRange

Describes the Traffic Mirror port range.

## Contents

**fromPort**

The start of the Traffic Mirror port range. This applies to the TCP and UDP protocols.

Type: Integer

Required: No

**toPort**

The end of the Traffic Mirror port range. This applies to the TCP and UDP protocols.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TrafficMirrorPortRangeRequest

Information about the Traffic Mirror filter rule port range.

## Contents

**FromPort**

The first port in the Traffic Mirror port range. This applies to the TCP and UDP protocols.

Type: Integer

Required: No

**ToPort**

The last port in the Traffic Mirror port range. This applies to the TCP and UDP protocols.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TrafficMirrorSession

Describes a Traffic Mirror session.

## Contents

**description**

The description of the Traffic Mirror session.

Type: String

Required: No

**networkInterfaceId**

The ID of the Traffic Mirror session's network interface.

Type: String

Required: No

**ownerId**

The ID of the account that owns the Traffic Mirror session.

Type: String

Required: No

**packetLength**

The number of bytes in each packet to mirror. These are the bytes after the VXLAN header. To mirror a subset, set this to the length (in bytes) to mirror. For example, if you set this value to 100, then the first 100 bytes that meet the filter criteria are copied to the target. Do not specify this parameter when you want to mirror the entire packet

Type: Integer

Required: No

**sessionNumber**

The session number determines the order in which sessions are evaluated when an interface is used by multiple sessions. The first session with a matching filter is the one that mirrors the packets.

Valid values are 1-32766.

Type: Integer

Required: No

**TagSet.N**

The tags assigned to the Traffic Mirror session.

Type: Array of Tag objects

Required: No

**trafficMirrorFilterId**

The ID of the Traffic Mirror filter.

Type: String

Required: No

**trafficMirrorSessionId**

The ID for the Traffic Mirror session.

Type: String

Required: No

**trafficMirrorTargetId**

The ID of the Traffic Mirror target.

Type: String

Required: No

**virtualNetworkId**

The virtual network ID associated with the Traffic Mirror session.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TrafficMirrorTarget

Describes a Traffic Mirror target.

## Contents

**description**

Information about the Traffic Mirror target.

Type: String

Required: No

**gatewayLoadBalancerEndpointId**

The ID of the Gateway Load Balancer endpoint.

Type: String

Required: No

**networkInterfaceId**

The network interface ID that is attached to the target.

Type: String

Required: No

**networkLoadBalancerArn**

The Amazon Resource Name (ARN) of the Network Load Balancer.

Type: String

Required: No

**ownerId**

The ID of the account that owns the Traffic Mirror target.

Type: String

Required: No

**TagSet.N**

The tags assigned to the Traffic Mirror target.

Type: Array of Tag objects

Required: No

**trafficMirrorTargetId**

The ID of the Traffic Mirror target.

Type: String

Required: No

**type**

The type of Traffic Mirror target.

Type: String

Valid Values: `network-interface | network-load-balancer | gateway-load-balancer-endpoint`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGateway

Describes a transit gateway.

## Contents

**creationTime**

The creation time.

Type: Timestamp

Required: No

**description**

The description of the transit gateway.

Type: String

Required: No

**options**

The transit gateway options.

Type: TransitGatewayOptions object

Required: No

**ownerId**

The ID of the AWS account that owns the transit gateway.

Type: String

Required: No

**state**

The state of the transit gateway.

Type: String

Valid Values: `pending | available | modifying | deleting | deleted`

Required: No

**TagSet.N**

The tags for the transit gateway.

Type: Array of Tag objects

Required: No

**transitGatewayArn**

The Amazon Resource Name (ARN) of the transit gateway.

Type: String

Required: No

**transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayAssociation

Describes an association between a resource attachment and a transit gateway route table.

## Contents

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**state**

The state of the association.

Type: String

Valid Values: `associating | associated | disassociating | disassociated`

Required: No

**transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

**transitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayAttachment

Describes an attachment between a resource and a transit gateway.

## Contents

**association**

The association.

Type: TransitGatewayAttachmentAssociation object

Required: No

**creationTime**

The creation time.

Type: Timestamp

Required: No

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceOwnerId**

The ID of the AWS account that owns the resource.

Type: String

Required: No

**resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**state**

The attachment state. Note that the `initiating` state has been deprecated.

Type: String

Valid Values: `initiating | initiatingRequest | pendingAcceptance | rollingBack | pending | available | modifying | deleting | deleted | failed | rejected | rejecting | failing`

Required: No

**TagSet.N**

The tags for the attachment.

Type: Array of Tag objects

Required: No

**transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

**transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

**transitGatewayOwnerId**

The ID of the AWS account that owns the transit gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayAttachmentAssociation

Describes an association.

## Contents

**state**

The state of the association.

Type: String

Valid Values: `associating | associated | disassociating | disassociated`

Required: No

**transitGatewayRouteTableId**

The ID of the route table for the transit gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayAttachmentBgpConfiguration

The BGP configuration information.

## Contents

**bgpStatus**

The BGP status.

Type: String

Valid Values: `up` | `down`

Required: No

**peerAddress**

The interior BGP peer IP address for the appliance.

Type: String

Required: No

**peerAsn**

The peer Autonomous System Number (ASN).

Type: Long

Required: No

**transitGatewayAddress**

The interior BGP peer IP address for the transit gateway.

Type: String

Required: No

**transitGatewayAsn**

The transit gateway Autonomous System Number (ASN).

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayAttachmentPropagation

Describes a propagation route table.

## Contents

**state**

The state of the propagation route table.

Type: String

Valid Values: `enabling | enabled | disabling | disabled`

Required: No

**transitGatewayRouteTableId**

The ID of the propagation route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayClientVpnAttachment

Describes a Transit Gateway attachment for a Client VPN endpoint.

## Contents

**clientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: No

**clientVpnOwnerId**

The ID of the Amazon Web Services account that owns the Client VPN endpoint.

Type: String

Required: No

**creationTime**

The date and time the Transit Gateway attachment was created.

Type: String

Required: No

**state**

The state of the Transit Gateway attachment.

Type: String

Valid Values: `pending-acceptance | pending | rejected | available | deleting | deleted`

Required: No

**transitGatewayAttachmentId**

The ID of the Transit Gateway attachment.

Type: String

Required: No

**transitGatewayId**

The ID of the Transit Gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayConfigurationDescribeEndpointStructure

Describes the Transit Gateway configuration for a Client VPN endpoint.

## Contents

**AvailabilityZoneIdSet.N**

The Availability Zone IDs for the Transit Gateway association.

Type: Array of strings

Required: No

**AvailabilityZoneSet.N**

The Availability Zone names for the Transit Gateway association.

Type: Array of strings

Required: No

**transitGatewayAttachmentId**

The ID of the Transit Gateway attachment.

Type: String

Required: No

**transitGatewayId**

The ID of the Transit Gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayConfigurationInputStructure

The Transit Gateway configuration for a Client VPN endpoint.

## Contents

**AvailabilityZone.N**

The Availability Zone names for the Transit Gateway association. You can specify up to the maximum number of Availability Zones supported by the Transit Gateway. You cannot specify both `AvailabilityZones` and `AvailabilityZoneIds`.

Type: Array of strings

Required: No

**AvailabilityZoneId.N**

The Availability Zone IDs for the Transit Gateway association. You can specify up to the maximum number of Availability Zones supported by the Transit Gateway. You cannot specify both `AvailabilityZones` and `AvailabilityZoneIds`.

Type: Array of strings

Required: No

**TransitGatewayId**

The ID of the Transit Gateway to associate with the Client VPN endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# TransitGatewayConnect

Describes a transit gateway Connect attachment.

## Contents

**creationTime**

The creation time.

Type: Timestamp

Required: No

**options**

The Connect attachment options.

Type: TransitGatewayConnectOptions object

Required: No

**state**

The state of the attachment.

Type: String

Valid Values: `initiating | initiatingRequest | pendingAcceptance | rollingBack | pending | available | modifying | deleting | deleted | failed | rejected | rejecting | failing`

Required: No

**TagSet.N**

The tags for the attachment.

Type: Array of Tag objects

Required: No

**transitGatewayAttachmentId**

The ID of the Connect attachment.

Type: String

Required: No

**transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

**transportTransitGatewayAttachmentId**

The ID of the attachment from which the Connect attachment was created.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayConnectOptions

Describes the Connect attachment options.

## Contents

**protocol**

The tunnel protocol.

Type: String

Valid Values: `gre`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayConnectPeer

Describes a transit gateway Connect peer.

## Contents

**connectPeerConfiguration**

The Connect peer details.

Type: TransitGatewayConnectPeerConfiguration object

Required: No

**creationTime**

The creation time.

Type: Timestamp

Required: No

**state**

The state of the Connect peer.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

**TagSet.N**

The tags for the Connect peer.

Type: Array of Tag objects

Required: No

**transitGatewayAttachmentId**

The ID of the Connect attachment.

Type: String

Required: No

**transitGatewayConnectPeerId**

The ID of the Connect peer.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayConnectPeerConfiguration

Describes the Connect peer details.

## Contents

**BgpConfigurations.N**

The BGP configuration details.

Type: Array of TransitGatewayAttachmentBgpConfiguration objects

Required: No

**InsideCidrBlocks.N**

The range of interior BGP peer IP addresses.

Type: Array of strings

Required: No

**peerAddress**

The Connect peer IP address on the appliance side of the tunnel.

Type: String

Required: No

**protocol**

The tunnel protocol.

Type: String

Valid Values: `gre`

Required: No

**transitGatewayAddress**

The Connect peer IP address on the transit gateway side of the tunnel.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayConnectRequestBgpOptions

The BGP options for the Connect attachment.

## Contents

**PeerAsn**

The peer Autonomous System Number (ASN).

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMeteringPolicy

Describes a transit gateway metering policy.

## Contents

**MiddleboxAttachmentIdSet.N**

The IDs of the middlebox attachments associated with the metering policy.

Type: Array of strings

Required: No

**state**

The state of the transit gateway metering policy.

Type: String

Valid Values: `available | deleted | pending | modifying | deleting`

Required: No

**TagSet.N**

The tags assigned to the transit gateway metering policy.

Type: Array of Tag objects

Required: No

**transitGatewayId**

The ID of the transit gateway associated with the metering policy.

Type: String

Required: No

**transitGatewayMeteringPolicyId**

The ID of the transit gateway metering policy.

Type: String

Required: No

**updateEffectiveAt**

The date and time when the metering policy update becomes effective.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMeteringPolicyEntry

Describes an entry in a transit gateway metering policy.

## Contents

**meteredAccount**

The AWS account ID to which the metered traffic is attributed.

Type: String

Valid Values: `source-attachment-owner | destination-attachment-owner | transit-gateway-owner`

Required: No

**meteringPolicyRule**

The metering policy rule that defines traffic matching criteria.

Type: TransitGatewayMeteringPolicyRule object

Required: No

**policyRuleNumber**

The rule number of the metering policy entry.

Type: String

Required: No

**state**

The state of the metering policy entry.

Type: String

Valid Values: `available | deleted`

Required: No

**updatedAt**

The date and time when the metering policy entry was last updated.

Type: Timestamp

Required: No

**updateEffectiveAt**

The date and time when the metering policy entry update becomes effective.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMeteringPolicyRule

Describes the traffic matching criteria for a transit gateway metering policy rule.

## Contents

**destinationCidrBlock**

The destination CIDR block for the rule.

Type: String

Required: No

**destinationPortRange**

The destination port range for the rule.

Type: String

Required: No

**destinationTransitGatewayAttachmentId**

The ID of the destination transit gateway attachment.

Type: String

Required: No

**destinationTransitGatewayAttachmentType**

The type of the destination transit gateway attachment. Note that the `tgw-peering` resource type has been deprecated. To configure metering policies for Connect, use the transport attachment type.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**protocol**

The protocol for the rule (1, 6, 17, etc.).

Type: String

Required: No

**sourceCidrBlock**

The source CIDR block for the rule.

Type: String

Required: No

**sourcePortRange**

The source port range for the rule.

Type: String

Required: No

**sourceTransitGatewayAttachmentId**

The ID of the source transit gateway attachment.

Type: String

Required: No

**sourceTransitGatewayAttachmentType**

The type of the source transit gateway attachment. Note that the `tgw-peering` resource type has been deprecated. To configure metering policies for Connect, use the transport attachment type.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMulticastDeregisteredGroupMembers

Describes the deregistered transit gateway multicast group members.

## Contents

**DeregisteredNetworkInterfaceIds.N**

The network interface IDs of the deregistered members.

Type: Array of strings

Required: No

**groupIpAddress**

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

**transitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMulticastDeregisteredGroupSources

Describes the deregistered transit gateway multicast group sources.

## Contents

**DeregisteredNetworkInterfaceIds.N**

The network interface IDs of the non-registered members.

Type: Array of strings

Required: No

**groupIpAddress**

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

**transitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMulticastDomain

Describes the transit gateway multicast domain.

## Contents

**creationTime**

The time the transit gateway multicast domain was created.

Type: Timestamp

Required: No

**options**

The options for the transit gateway multicast domain.

Type: TransitGatewayMulticastDomainOptions object

Required: No

**ownerId**

The ID of the AWS account that owns the transit gateway multicast domain.

Type: String

Required: No

**state**

The state of the transit gateway multicast domain.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

**TagSet.N**

The tags for the transit gateway multicast domain.

Type: Array of Tag objects

Required: No

**transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

**transitGatewayMulticastDomainArn**

The Amazon Resource Name (ARN) of the transit gateway multicast domain.

Type: String

Required: No

**transitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMulticastDomainAssociation

Describes the resources associated with the transit gateway multicast domain.

## Contents

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceOwnerId**

The ID of the AWS account that owns the transit gateway multicast domain association resource.

Type: String

Required: No

**resourceType**

The type of resource, for example a VPC attachment.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**subnet**

The subnet associated with the transit gateway multicast domain.

Type: SubnetAssociation object

Required: No

**transitGatewayAttachmentId**

The ID of the transit gateway attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMulticastDomainAssociations

Describes the multicast domain associations.

## Contents

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceOwnerId**

The ID of the AWS account that owns the resource.

Type: String

Required: No

**resourceType**

The type of resource, for example a VPC attachment.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**Subnets.N**

The subnets associated with the multicast domain.

Type: Array of SubnetAssociation objects

Required: No

**transitGatewayAttachmentId**

The ID of the transit gateway attachment.

Type: String

Required: No

**transitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMulticastDomainOptions

Describes the options for a transit gateway multicast domain.

## Contents

**autoAcceptSharedAssociations**

Indicates whether to automatically cross-account subnet associations that are associated with the transit gateway multicast domain.

Type: String

Valid Values: `enable | disable`

Required: No

**igmpv2Support**

Indicates whether Internet Group Management Protocol (IGMP) version 2 is turned on for the transit gateway multicast domain.

Type: String

Valid Values: `enable | disable`

Required: No

**staticSourcesSupport**

Indicates whether support for statically configuring transit gateway multicast group sources is turned on.

Type: String

Valid Values: `enable | disable`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMulticastGroup

Describes the transit gateway multicast group resources.

## Contents

**groupIpAddress**

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

**groupMember**

Indicates that the resource is a transit gateway multicast group member.

Type: Boolean

Required: No

**groupSource**

Indicates that the resource is a transit gateway multicast group member.

Type: Boolean

Required: No

**memberType**

The member type (for example, `static`).

Type: String

Valid Values: `static | igmp`

Required: No

**networkInterfaceId**

The ID of the transit gateway attachment.

Type: String

Required: No

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceOwnerId**

The ID of the AWS account that owns the transit gateway multicast domain group resource.

Type: String

Required: No

**resourceType**

The type of resource, for example a VPC attachment.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**sourceType**

The source type.

Type: String

Valid Values: `static | igmp`

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

**transitGatewayAttachmentId**

The ID of the transit gateway attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMulticastRegisteredGroupMembers

Describes the registered transit gateway multicast group members.

## Contents

**groupIpAddress**

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

**RegisteredNetworkInterfaceIds.N**

The ID of the registered network interfaces.

Type: Array of strings

Required: No

**transitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayMulticastRegisteredGroupSources

Describes the members registered with the transit gateway multicast group.

## Contents

**groupIpAddress**

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

**RegisteredNetworkInterfaceIds.N**

The IDs of the network interfaces members registered with the transit gateway multicast group.

Type: Array of strings

Required: No

**transitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayOptions

Describes the options for a transit gateway.

## Contents

**amazonSideAsn**

A private Autonomous System Number (ASN) for the Amazon side of a BGP session. The range is 64512 to 65534 for 16-bit ASNs and 4200000000 to 4294967294 for 32-bit ASNs.

Type: Long

Required: No

**associationDefaultRouteTableId**

The ID of the default association route table.

Type: String

Required: No

**autoAcceptSharedAttachments**

Indicates whether attachment requests are automatically accepted.

Type: String

Valid Values: `enable | disable`

Required: No

**defaultRouteTableAssociation**

Indicates whether resource attachments are automatically associated with the default association route table. Enabled by default. Either `defaultRouteTableAssociation` or `defaultRouteTablePropagation` must be set to `enable` for AWS Transit Gateway to create the default transit gateway route table.

Type: String

Valid Values: `enable | disable`

Required: No

**defaultRouteTablePropagation**

Indicates whether resource attachments automatically propagate routes to the default propagation route table. Enabled by default. If `defaultRouteTablePropagation` is set to `enable`, AWS Transit Gateway creates the default transit gateway route table.

Type: String

Valid Values: `enable | disable`

Required: No

**dnsSupport**

Indicates whether DNS support is enabled.

Type: String

Valid Values: `enable | disable`

Required: No

**encryptionSupport**

Defines if the Transit Gateway supports VPC Encryption Control.

Type: EncryptionSupport object

Required: No

**multicastSupport**

Indicates whether multicast is enabled on the transit gateway

Type: String

Valid Values: `enable | disable`

Required: No

**propagationDefaultRouteTableId**

The ID of the default propagation route table.

Type: String

Required: No

**securityGroupReferencingSupport**

Enables you to reference a security group across VPCs attached to a transit gateway to simplify security group management.

This option is disabled by default.

Type: String

Valid Values: `enable | disable`

Required: No

**TransitGatewayCidrBlocks.N**

The transit gateway CIDR blocks.

Type: Array of strings

Required: No

**vpnEcmpSupport**

Indicates whether Equal Cost Multipath Protocol support is enabled.

Type: String

Valid Values: `enable | disable`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayPeeringAttachment

Describes the transit gateway peering attachment.

## Contents

**accepterTgwInfo**

Information about the accepter transit gateway.

Type: PeeringTgwInfo object

Required: No

**accepterTransitGatewayAttachmentId**

The ID of the accepter transit gateway attachment.

Type: String

Required: No

**creationTime**

The time the transit gateway peering attachment was created.

Type: Timestamp

Required: No

**options**

Details about the transit gateway peering attachment.

Type: TransitGatewayPeeringAttachmentOptions object

Required: No

**requesterTgwInfo**

Information about the requester transit gateway.

Type: PeeringTgwInfo object

Required: No

**state**

The state of the transit gateway peering attachment. Note that the `initiating` state has been deprecated.

Type: String

Valid Values: `initiating | initiatingRequest | pendingAcceptance | rollingBack | pending | available | modifying | deleting | deleted | failed | rejected | rejecting | failing`

Required: No

**status**

The status of the transit gateway peering attachment.

Type: PeeringAttachmentStatus object

Required: No

**TagSet.N**

The tags for the transit gateway peering attachment.

Type: Array of Tag objects

Required: No

**transitGatewayAttachmentId**

The ID of the transit gateway peering attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayPeeringAttachmentOptions

Describes dynamic routing for the transit gateway peering attachment.

## Contents

**dynamicRouting**

Describes whether dynamic routing is enabled or disabled for the transit gateway peering attachment.

Type: String

Valid Values: `enable | disable`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayPolicyRule

Describes a rule associated with a transit gateway policy.

## Contents

**destinationCidrBlock**

The destination CIDR block for the transit gateway policy rule.

Type: String

Required: No

**destinationPortRange**

The port range for the transit gateway policy rule. Currently this is set to * (all).

Type: String

Required: No

**metaData**

The meta data tags used for the transit gateway policy rule.

Type: TransitGatewayPolicyRuleMetaData object

Required: No

**protocol**

The protocol used by the transit gateway policy rule.

Type: String

Required: No

**sourceCidrBlock**

The source CIDR block for the transit gateway policy rule.

Type: String

Required: No

**sourcePortRange**

The port range for the transit gateway policy rule. Currently this is set to * (all).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayPolicyRuleMetaData

Describes the meta data tags associated with a transit gateway policy rule.

## Contents

**metaDataKey**

The key name for the transit gateway policy rule meta data tag.

Type: String

Required: No

**metaDataValue**

The value of the key for the transit gateway policy rule meta data tag.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayPolicyTable

Describes a transit gateway policy table.

## Contents

**creationTime**

The timestamp when the transit gateway policy table was created.

Type: Timestamp

Required: No

**state**

The state of the transit gateway policy table

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

**TagSet.N**

he key-value pairs associated with the transit gateway policy table.

Type: Array of Tag objects

Required: No

**transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

**transitGatewayPolicyTableId**

The ID of the transit gateway policy table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayPolicyTableAssociation

Describes a transit gateway policy table association.

## Contents

**resourceId**

The resource ID of the transit gateway attachment.

Type: String

Required: No

**resourceType**

The resource type for the transit gateway policy table association.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**state**

The state of the transit gateway policy table association.

Type: String

Valid Values: `associating | associated | disassociating | disassociated`

Required: No

**transitGatewayAttachmentId**

The ID of the transit gateway attachment.

Type: String

Required: No

**transitGatewayPolicyTableId**

The ID of the transit gateway policy table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayPolicyTableEntry

Describes a transit gateway policy table entry

## Contents

**policyRule**

The policy rule associated with the transit gateway policy table.

Type: TransitGatewayPolicyRule object

Required: No

**policyRuleNumber**

The rule number for the transit gateway policy table entry.

Type: String

Required: No

**targetRouteTableId**

The ID of the target route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayPrefixListAttachment

Describes a transit gateway prefix list attachment.

## Contents

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayPrefixListReference

Describes a prefix list reference.

## Contents

**blackhole**

Indicates whether traffic that matches this route is dropped.

Type: Boolean

Required: No

**prefixListId**

The ID of the prefix list.

Type: String

Required: No

**prefixListOwnerId**

The ID of the prefix list owner.

Type: String

Required: No

**state**

The state of the prefix list reference.

Type: String

Valid Values: `pending | available | modifying | deleting`

Required: No

**transitGatewayAttachment**

Information about the transit gateway attachment.

Type: TransitGatewayPrefixListAttachment object

Required: No

**transitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayPropagation

Describes route propagation.

## Contents

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**state**

The state.

Type: String

Valid Values: `enabling | enabled | disabling | disabled`

Required: No

**transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

**transitGatewayRouteTableAnnouncementId**

The ID of the transit gateway route table announcement.

Type: String

Required: No

**transitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayRequestOptions

Describes the options for a transit gateway.

## Contents

**AmazonSideAsn**

A private Autonomous System Number (ASN) for the Amazon side of a BGP session. The range is 64512 to 65534 for 16-bit ASNs and 4200000000 to 4294967294 for 32-bit ASNs. The default is 64512.

Type: Long

Required: No

**AutoAcceptSharedAttachments**

Enable or disable automatic acceptance of attachment requests. Disabled by default.

Type: String

Valid Values: `enable | disable`

Required: No

**DefaultRouteTableAssociation**

Enable or disable automatic association with the default association route table. Enabled by default.

Type: String

Valid Values: `enable | disable`

Required: No

**DefaultRouteTablePropagation**

Enable or disable automatic propagation of routes to the default propagation route table. Enabled by default.

Type: String

Valid Values: `enable | disable`

Required: No

**DnsSupport**

Enable or disable DNS support. Enabled by default.

Type: String

Valid Values: `enable | disable`

Required: No

**MulticastSupport**

Indicates whether multicast is enabled on the transit gateway

Type: String

Valid Values: `enable | disable`

Required: No

**SecurityGroupReferencingSupport**

Enables you to reference a security group across VPCs attached to a transit gateway to simplify security group management.

This option is disabled by default.

For more information about security group referencing, see Security group referencing in the *AWS Transit Gateways Guide*.

Type: String

Valid Values: `enable | disable`

Required: No

**TransitGatewayCidrBlocks.N**

One or more IPv4 or IPv6 CIDR blocks for the transit gateway. Must be a size /24 CIDR block or larger for IPv4, or a size /64 CIDR block or larger for IPv6.

Type: Array of strings

Required: No

**VpnEcmpSupport**

Enable or disable Equal Cost Multipath Protocol support. Enabled by default.

Type: String

Valid Values: `enable | disable`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayRoute

Describes a route for a transit gateway route table.

## Contents

**destinationCidrBlock**

The CIDR block used for destination matches.

Type: String

Required: No

**prefixListId**

The ID of the prefix list used for destination matches.

Type: String

Required: No

**state**

The state of the route.

Type: String

Valid Values: `pending | active | blackhole | deleting | deleted`

Required: No

**TransitGatewayAttachments.N**

The attachments.

Type: Array of TransitGatewayRouteAttachment objects

Required: No

**transitGatewayRouteTableAnnouncementId**

The ID of the transit gateway route table announcement.

Type: String

Required: No

**type**

The route type.

Type: String

Valid Values: `static | propagated`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayRouteAttachment

Describes a route attachment.

## Contents

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayRouteTable

Describes a transit gateway route table.

## Contents

**creationTime**

The creation time.

Type: Timestamp

Required: No

**defaultAssociationRouteTable**

Indicates whether this is the default association route table for the transit gateway.

Type: Boolean

Required: No

**defaultPropagationRouteTable**

Indicates whether this is the default propagation route table for the transit gateway.

Type: Boolean

Required: No

**state**

The state of the transit gateway route table.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

**TagSet.N**

Any tags assigned to the route table.

Type: Array of Tag objects

Required: No

**transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

**transitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayRouteTableAnnouncement

Describes a transit gateway route table announcement.

## Contents

**announcementDirection**

The direction for the route table announcement.

Type: String

Valid Values: `outgoing | incoming`

Required: No

**coreNetworkId**

The ID of the core network for the transit gateway route table announcement.

Type: String

Required: No

**creationTime**

The timestamp when the transit gateway route table announcement was created.

Type: Timestamp

Required: No

**peerCoreNetworkId**

The ID of the core network ID for the peer.

Type: String

Required: No

**peeringAttachmentId**

The ID of the peering attachment.

Type: String

Required: No

**peerTransitGatewayId**

The ID of the peer transit gateway.

Type: String

Required: No

**state**

The state of the transit gateway announcement.

Type: String

Valid Values: `available | pending | failing | failed | deleting | deleted`

Required: No

**TagSet.N**

The key-value pairs associated with the route table announcement.

Type: Array of Tag objects

Required: No

**transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

**transitGatewayRouteTableAnnouncementId**

The ID of the transit gateway route table announcement.

Type: String

Required: No

**transitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayRouteTableAssociation

Describes an association between a route table and a resource attachment.

## Contents

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**state**

The state of the association.

Type: String

Valid Values: `associating | associated | disassociating | disassociated`

Required: No

**transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayRouteTablePropagation

Describes a route table propagation.

## Contents

**resourceId**

The ID of the resource.

Type: String

Required: No

**resourceType**

The type of resource. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc | vpn | vpn-concentrator | direct-connect-gateway | connect | peering | tgw-peering | client-vpn`

Required: No

**state**

The state of the resource.

Type: String

Valid Values: `enabling | enabled | disabling | disabled`

Required: No

**transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

**transitGatewayRouteTableAnnouncementId**

The ID of the transit gateway route table announcement.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayRouteTableRoute

Describes a route in a transit gateway route table.

## Contents

**attachmentId**

The ID of the route attachment.

Type: String

Required: No

**destinationCidr**

The CIDR block used for destination matches.

Type: String

Required: No

**prefixListId**

The ID of the prefix list.

Type: String

Required: No

**resourceId**

The ID of the resource for the route attachment.

Type: String

Required: No

**resourceType**

The resource type for the route attachment.

Type: String

Required: No

**routeOrigin**

The route origin. The following are the possible values:

- static
- propagated

Type: String

Required: No

**state**

The state of the route.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayVpcAttachment

Describes a VPC attachment.

## Contents

**creationTime**

The creation time.

Type: Timestamp

Required: No

**options**

The VPC attachment options.

Type: TransitGatewayVpcAttachmentOptions object

Required: No

**state**

The state of the VPC attachment. Note that the `initiating` state has been deprecated.

Type: String

Valid Values: `initiating | initiatingRequest | pendingAcceptance | rollingBack | pending | available | modifying | deleting | deleted | failed | rejected | rejecting | failing`

Required: No

**SubnetIds.N**

The IDs of the subnets.

Type: Array of strings

Required: No

**TagSet.N**

The tags for the VPC attachment.

Type: Array of Tag objects

Required: No

**transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

**transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

**vpcOwnerId**

The ID of the AWS account that owns the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TransitGatewayVpcAttachmentOptions

Describes the VPC attachment options.

## Contents

**applianceModeSupport**

Indicates whether appliance mode support is enabled.

Type: String

Valid Values: `enable | disable`

Required: No

**dnsSupport**

Indicates whether DNS support is enabled.

Type: String

Valid Values: `enable | disable`

Required: No

**ipv6Support**

Indicates whether IPv6 support is disabled.

Type: String

Valid Values: `enable | disable`

Required: No

**securityGroupReferencingSupport**

Enables you to reference a security group across VPCs attached to a transit gateway to simplify security group management.

This option is enabled by default.

For more information about security group referencing, see Security group referencing in the *AWS Transit Gateways Guide*.

Type: String

Valid Values: `enable | disable`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TrunkInterfaceAssociation

Information about an association between a branch network interface with a trunk network interface.

## Contents

**associationId**

The ID of the association.

Type: String

Required: No

**branchInterfaceId**

The ID of the branch network interface.

Type: String

Required: No

**greKey**

The application key when you use the GRE protocol.

Type: Integer

Required: No

**interfaceProtocol**

The interface protocol. Valid values are `VLAN` and `GRE`.

Type: String

Valid Values: `VLAN | GRE`

Required: No

**TagSet.N**

The tags for the trunk interface association.

Type: Array of Tag objects

Required: No

**trunkInterfaceId**

The ID of the trunk network interface.

Type: String

Required: No

**vlanId**

The ID of the VLAN when you use the VLAN protocol.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# TunnelOption

The VPN tunnel options.

## Contents

**dpdTimeoutAction**

The action to take after a DPD timeout occurs.

Type: String

Required: No

**dpdTimeoutSeconds**

The number of seconds after which a DPD timeout occurs.

Type: Integer

Required: No

**enableTunnelLifecycleControl**

Status of tunnel endpoint lifecycle control feature.

Type: Boolean

Required: No

**IkeVersionSet.N**

The IKE versions that are permitted for the VPN tunnel.

Type: Array of IKEVersionsListValue objects

Required: No

**logOptions**

Options for logging VPN tunnel activity.

Type: VpnTunnelLogOptions object

Required: No

**outsideIpAddress**

The external IP address of the VPN tunnel.

Type: String

Required: No

**Phase1DHGroupNumberSet.N**

The permitted Diffie-Hellman group numbers for the VPN tunnel for phase 1 IKE negotiations.

Type: Array of Phase1DHGroupNumbersListValue objects

Required: No

**Phase1EncryptionAlgorithmSet.N**

The permitted encryption algorithms for the VPN tunnel for phase 1 IKE negotiations.

Type: Array of Phase1EncryptionAlgorithmsListValue objects

Required: No

**Phase1IntegrityAlgorithmSet.N**

The permitted integrity algorithms for the VPN tunnel for phase 1 IKE negotiations.

Type: Array of Phase1IntegrityAlgorithmsListValue objects

Required: No

**phase1LifetimeSeconds**

The lifetime for phase 1 of the IKE negotiation, in seconds.

Type: Integer

Required: No

**Phase2DHGroupNumberSet.N**

The permitted Diffie-Hellman group numbers for the VPN tunnel for phase 2 IKE negotiations.

Type: Array of Phase2DHGroupNumbersListValue objects

Required: No

**Phase2EncryptionAlgorithmSet.N**

The permitted encryption algorithms for the VPN tunnel for phase 2 IKE negotiations.

Type: Array of Phase2EncryptionAlgorithmsListValue objects

Required: No

**Phase2IntegrityAlgorithmSet.N**

The permitted integrity algorithms for the VPN tunnel for phase 2 IKE negotiations.

Type: Array of Phase2IntegrityAlgorithmsListValue objects

Required: No

**phase2LifetimeSeconds**

The lifetime for phase 2 of the IKE negotiation, in seconds.

Type: Integer

Required: No

**preSharedKey**

The pre-shared key (PSK) to establish initial authentication between the virtual private gateway and the customer gateway.

Type: String

Required: No

**rekeyFuzzPercentage**

The percentage of the rekey window determined by `RekeyMarginTimeSeconds` during which the rekey time is randomly selected.

Type: Integer

Required: No

**rekeyMarginTimeSeconds**

The margin time, in seconds, before the phase 2 lifetime expires, during which the AWS side of the VPN connection performs an IKE rekey.

Type: Integer

Required: No

**replayWindowSize**

The number of packets in an IKE replay window.

Type: Integer

Required: No

**startupAction**

The action to take when the establishing the VPN tunnels for a VPN connection.

Type: String

Required: No

**tunnelInsideCidr**

The range of inside IPv4 addresses for the tunnel.

Type: String

Required: No

**tunnelInsideIpv6Cidr**

The range of inside IPv6 addresses for the tunnel.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# UnsuccessfulInstanceCreditSpecificationItem

Describes the burstable performance instance whose credit option for CPU usage was not modified.

## Contents

**error**

The applicable error for the burstable performance instance whose credit option for CPU usage was not modified.

Type: UnsuccessfulInstanceCreditSpecificationItemError object

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# UnsuccessfulInstanceCreditSpecificationItemError

Information about the error for the burstable performance instance whose credit option for CPU usage was not modified.

## Contents

**code**

The error code.

Type: String

Valid Values: `InvalidInstanceID.Malformed | InvalidInstanceID.NotFound | IncorrectInstanceState | InstanceCreditSpecification.NotSupported`

Required: No

**message**

The applicable error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# UnsuccessfulItem

Information about items that were not successfully processed in a batch call.

## Contents

**error**

Information about the error.

Type: UnsuccessfulItemError object

Required: No

**resourceId**

The ID of the resource.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# UnsuccessfulItemError

Information about the error that occurred. For more information about errors, see Error codes.

## Contents

**code**

The error code.

Type: String

Required: No

**message**

The error message accompanying the error code.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# UserBucket

Describes the Amazon S3 bucket for the disk image.

## Contents

**S3Bucket**

The name of the Amazon S3 bucket where the disk image is located.

Type: String

Required: No

**S3Key**

The file name of the disk image.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# UserBucketDetails

Describes the Amazon S3 bucket for the disk image.

## Contents

**s3Bucket**

The Amazon S3 bucket from which the disk image was created.

Type: String

Required: No

**s3Key**

The file name of the disk image.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# UserData

Describes the user data for an instance.

## Contents

### Data

The user data. If you are using an AWS SDK or command line tool, Base64-encoding is performed for you, and you can load the text from a file. Otherwise, you must provide Base64-encoded text.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# UserIdGroupPair

Describes a security group and AWS account ID pair.

## Contents

**Description** (request), **description** (response)

A description for the security group rule that references this user ID group pair.

Constraints: Up to 255 characters in length. Allowed characters are a-z, A-Z, 0-9, spaces, and ._-:/()#,@[]+=;{}!$*

Type: String

Required: No

**GroupId** (request), **groupId** (response)

The ID of the security group.

Type: String

Required: No

**GroupName** (request), **groupName** (response)

[Default VPC] The name of the security group. For a security group in a nondefault VPC, use the security group ID.

For a referenced security group in another VPC, this value is not returned if the referenced security group is deleted.

Type: String

Required: No

**PeeringStatus** (request), **peeringStatus** (response)

The status of a VPC peering connection, if applicable.

Type: String

Required: No

**UserId** (request), **userId** (response)

The ID of an AWS account.

For a referenced security group in another VPC, the account ID of the referenced security group is returned in the response. If the referenced security group is deleted, this value is not returned.

Type: String

Required: No

**VpcId** (request), **vpcId** (response)

The ID of the VPC for the referenced security group, if applicable.

Type: String

Required: No

**VpcPeeringConnectionId** (request), **vpcPeeringConnectionId** (response)

The ID of the VPC peering connection, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ValidationError

The error code and error message that is returned for a parameter or parameter combination that is not valid when a new launch template or new version of a launch template is created.

## Contents

**code**

The error code that indicates why the parameter or parameter combination is not valid. For more information about error codes, see Error codes.

Type: String

Required: No

**message**

The error message that describes why the parameter or parameter combination is not valid. For more information about error messages, see Error codes.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# ValidationWarning

The error codes and error messages that are returned for the parameters or parameter combinations that are not valid when a new launch template or new version of a launch template is created.

## Contents

**ErrorSet.N**

The error codes and error messages.

Type: Array of ValidationError objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VCpuCountRange

The minimum and maximum number of vCPUs.

## Contents

**Max** (request), **max** (response)

The maximum number of vCPUs. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

**Min** (request), **min** (response)

The minimum number of vCPUs. If the value is `0`, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VCpuCountRangeRequest

The minimum and maximum number of vCPUs.

## Contents

**Min**

The minimum number of vCPUs. To specify no minimum limit, specify `0`.

Type: Integer

Required: Yes

**Max**

The maximum number of vCPUs. To specify no maximum limit, omit this parameter.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VCpuInfo

Describes the vCPU configurations for the instance type.

## Contents

**defaultCores**

The default number of cores for the instance type.

Type: Integer

Required: No

**defaultThreadsPerCore**

The default number of threads per core for the instance type.

Type: Integer

Required: No

**defaultVCpus**

The default number of vCPUs for the instance type.

Type: Integer

Required: No

**ValidCores.N**

The valid number of cores that can be configured for the instance type.

Type: Array of integers

Required: No

**ValidThreadsPerCore.N**

The valid number of threads per core that can be configured for the instance type.

Type: Array of integers

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessEndpoint

An AWS Verified Access endpoint specifies the application that AWS Verified Access provides access to. It must be attached to an AWS Verified Access group. An AWS Verified Access endpoint must also have an attached access policy before you attached it to a group.

## Contents

**applicationDomain**

The DNS name for users to reach your application.

Type: String

Required: No

**attachmentType**

The type of attachment used to provide connectivity between the AWS Verified Access endpoint and the application.

Type: String

Valid Values: vpc

Required: No

**cidrOptions**

The options for a CIDR endpoint.

Type: VerifiedAccessEndpointCidrOptions object

Required: No

**creationTime**

The creation time.

Type: String

Required: No

**deletionTime**

The deletion time.

Type: String

Required: No

**description**

A description for the AWS Verified Access endpoint.

Type: String

Required: No

**deviceValidationDomain**

Returned if endpoint has a device trust provider attached.

Type: String

Required: No

**domainCertificateArn**

The ARN of a public TLS/SSL certificate imported into or created with ACM.

Type: String

Required: No

**endpointDomain**

A DNS name that is generated for the endpoint.

Type: String

Required: No

**endpointType**

The type of AWS Verified Access endpoint. Incoming application requests will be sent to an IP address, load balancer or a network interface depending on the endpoint type specified.

Type: String

Valid Values: `load-balancer | network-interface | rds | cidr`

Required: No

**lastUpdatedTime**

The last updated time.

Type: String

Required: No

**loadBalancerOptions**

The load balancer details if creating the AWS Verified Access endpoint as `load-balancer`type.

Type: VerifiedAccessEndpointLoadBalancerOptions object

Required: No

**networkInterfaceOptions**

The options for network-interface type endpoint.

Type: VerifiedAccessEndpointEniOptions object

Required: No

**rdsOptions**

The options for an RDS endpoint.

Type: VerifiedAccessEndpointRdsOptions object

Required: No

**SecurityGroupIdSet.N**

The IDs of the security groups for the endpoint.

Type: Array of strings

Required: No

**sseSpecification**

The options in use for server side encryption.

Type: VerifiedAccessSseSpecificationResponse object

Required: No

**status**

The endpoint status.

Type: VerifiedAccessEndpointStatus object

Required: No

**TagSet.N**

The tags.

Type: Array of Tag objects

Required: No

**verifiedAccessEndpointId**

The ID of the AWS Verified Access endpoint.

Type: String

Required: No

**verifiedAccessGroupId**

The ID of the AWS Verified Access group.

Type: String

Required: No

**verifiedAccessInstanceId**

The ID of the AWS Verified Access instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessEndpointCidrOptions

Describes the CIDR options for a Verified Access endpoint.

## Contents

**cidr**

The CIDR.

Type: String

Required: No

**PortRangeSet.N**

The port ranges.

Type: Array of VerifiedAccessEndpointPortRange objects

Required: No

**protocol**

The protocol.

Type: String

Valid Values: `http | https | tcp`

Required: No

**SubnetIdSet.N**

The IDs of the subnets.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessEndpointEniOptions

Options for a network-interface type endpoint.

## Contents

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**port**

The IP port number.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**PortRangeSet.N**

The port ranges.

Type: Array of VerifiedAccessEndpointPortRange objects

Required: No

**protocol**

The IP protocol.

Type: String

Valid Values: `http | https | tcp`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessEndpointLoadBalancerOptions

Describes a load balancer when creating an AWS Verified Access endpoint using the `load-balancer` type.

## Contents

**loadBalancerArn**

The ARN of the load balancer.

Type: String

Required: No

**port**

The IP port number.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**PortRangeSet.N**

The port ranges.

Type: Array of VerifiedAccessEndpointPortRange objects

Required: No

**protocol**

The IP protocol.

Type: String

Valid Values: `http | https | tcp`

Required: No

**SubnetIdSet.N**

The IDs of the subnets.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessEndpointPortRange

Describes a port range.

## Contents

**fromPort**

The start of the port range.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**toPort**

The end of the port range.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessEndpointRdsOptions

Describes the RDS options for a Verified Access endpoint.

## Contents

**port**

The port.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**protocol**

The protocol.

Type: String

Valid Values: `http | https | tcp`

Required: No

**rdsDbClusterArn**

The ARN of the DB cluster.

Type: String

Required: No

**rdsDbInstanceArn**

The ARN of the RDS instance.

Type: String

Required: No

**rdsDbProxyArn**

The ARN of the RDS proxy.

Type: String

Required: No

**rdsEndpoint**

The RDS endpoint.

Type: String

Required: No

**SubnetIdSet.N**

The IDs of the subnets.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessEndpointStatus

Describes the status of a Verified Access endpoint.

## Contents

**code**

The status code of the Verified Access endpoint.

Type: String

Valid Values: `pending | active | updating | deleting | deleted`

Required: No

**message**

The status message of the Verified Access endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessEndpointTarget

Describes the targets for the specified Verified Access endpoint.

## Contents

**verifiedAccessEndpointId**

The ID of the Verified Access endpoint.

Type: String

Required: No

**verifiedAccessEndpointTargetDns**

The DNS name of the target.

Type: String

Required: No

**verifiedAccessEndpointTargetIpAddress**

The IP address of the target.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessGroup

Describes a Verified Access group.

## Contents

**creationTime**

The creation time.

Type: String

Required: No

**deletionTime**

The deletion time.

Type: String

Required: No

**description**

A description for the AWS Verified Access group.

Type: String

Required: No

**lastUpdatedTime**

The last updated time.

Type: String

Required: No

**owner**

The AWS account number that owns the group.

Type: String

Required: No

**sseSpecification**

The options in use for server side encryption.

Type: VerifiedAccessSseSpecificationResponse object

Required: No

**TagSet.N**

The tags.

Type: Array of Tag objects

Required: No

**verifiedAccessGroupArn**

The ARN of the Verified Access group.

Type: String

Required: No

**verifiedAccessGroupId**

The ID of the Verified Access group.

Type: String

Required: No

**verifiedAccessInstanceId**

The ID of the AWS Verified Access instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessInstance

Describes a Verified Access instance.

## Contents

**cidrEndpointsCustomSubDomain**

The custom subdomain.

Type: VerifiedAccessInstanceCustomSubDomain object

Required: No

**creationTime**

The creation time.

Type: String

Required: No

**description**

A description for the AWS Verified Access instance.

Type: String

Required: No

**fipsEnabled**

Indicates whether support for Federal Information Processing Standards (FIPS) is enabled on the instance.

Type: Boolean

Required: No

**lastUpdatedTime**

The last updated time.

Type: String

Required: No

**TagSet.N**

The tags.

Type: Array of Tag objects

Required: No

**verifiedAccessInstanceId**

The ID of the AWS Verified Access instance.

Type: String

Required: No

**VerifiedAccessTrustProviderSet.N**

The IDs of the AWS Verified Access trust providers.

Type: Array of VerifiedAccessTrustProviderCondensed objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessInstanceCustomSubDomain

Describes a custom subdomain for a network CIDR endpoint for Verified Access.

## Contents

**NameserverSet.N**

The name servers.

Type: Array of strings

Required: No

**subDomain**

The subdomain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessInstanceLoggingConfiguration

Describes logging options for an AWS Verified Access instance.

## Contents

**accessLogs**

Details about the logging options.

Type: VerifiedAccessLogs object

Required: No

**verifiedAccessInstanceId**

The ID of the AWS Verified Access instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessInstanceOpenVpnClientConfiguration

Describes a set of routes.

## Contents

**config**

The base64-encoded Open VPN client configuration.

Type: String

Required: No

**RouteSet.N**

The routes.

Type: Array of VerifiedAccessInstanceOpenVpnClientConfigurationRoute objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessInstanceOpenVpnClientConfigurationRoute

Describes a route.

## Contents

**cidr**

The CIDR block.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessInstanceUserTrustProviderClientConfiguration

Describes the trust provider.

## Contents

**authorizationEndpoint**

The authorization endpoint of the IdP.

Type: String

Required: No

**clientId**

The OAuth 2.0 client identifier.

Type: String

Required: No

**clientSecret**

The OAuth 2.0 client secret.

Type: String

Required: No

**issuer**

The OIDC issuer identifier of the IdP.

Type: String

Required: No

**pkceEnabled**

Indicates whether Proof of Key Code Exchange (PKCE) is enabled.

Type: Boolean

Required: No

**publicSigningKeyEndpoint**

The public signing key endpoint.

Type: String

Required: No

**scopes**

The set of user claims to be requested from the IdP.

Type: String

Required: No

**tokenEndpoint**

The token endpoint of the IdP.

Type: String

Required: No

**type**

The trust provider type.

Type: String

Valid Values: `iam-identity-center | oidc`

Required: No

**userInfoEndpoint**

The user info endpoint of the IdP.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessLogCloudWatchLogsDestination

Options for CloudWatch Logs as a logging destination.

## Contents

**deliveryStatus**

The delivery status for access logs.

Type: VerifiedAccessLogDeliveryStatus object

Required: No

**enabled**

Indicates whether logging is enabled.

Type: Boolean

Required: No

**logGroup**

The ID of the CloudWatch Logs log group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessLogCloudWatchLogsDestinationOptions

Options for CloudWatch Logs as a logging destination.

## Contents

**Enabled**

Indicates whether logging is enabled.

Type: Boolean

Required: Yes

**LogGroup**

The ID of the CloudWatch Logs log group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessLogDeliveryStatus

Describes a log delivery status.

## Contents

**code**

The status code.

Type: String

Valid Values: `success | failed`

Required: No

**message**

The status message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessLogKinesisDataFirehoseDestination

Options for Kinesis as a logging destination.

## Contents

**deliveryStatus**

The delivery status.

Type: VerifiedAccessLogDeliveryStatus object

Required: No

**deliveryStream**

The ID of the delivery stream.

Type: String

Required: No

**enabled**

Indicates whether logging is enabled.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessLogKinesisDataFirehoseDestinationOptions

Describes Amazon Kinesis Data Firehose logging options.

## Contents

**Enabled**

Indicates whether logging is enabled.

Type: Boolean

Required: Yes

**DeliveryStream**

The ID of the delivery stream.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessLogOptions

Options for Verified Access logs.

## Contents

**CloudWatchLogs**

Sends Verified Access logs to CloudWatch Logs.

Type: VerifiedAccessLogCloudWatchLogsDestinationOptions object

Required: No

**IncludeTrustContext**

Indicates whether to include trust data sent by trust providers in the logs.

Type: Boolean

Required: No

**KinesisDataFirehose**

Sends Verified Access logs to Kinesis.

Type: VerifiedAccessLogKinesisDataFirehoseDestinationOptions object

Required: No

**LogVersion**

The logging version.

Valid values: `ocsf-0.1` | `ocsf-1.0.0-rc.2`

Type: String

Required: No

**S3**

Sends Verified Access logs to Amazon S3.

Type: VerifiedAccessLogS3DestinationOptions object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessLogs

Describes the options for Verified Access logs.

## Contents

**cloudWatchLogs**

CloudWatch Logs logging destination.

Type: VerifiedAccessLogCloudWatchLogsDestination object

Required: No

**includeTrustContext**

Indicates whether trust data is included in the logs.

Type: Boolean

Required: No

**kinesisDataFirehose**

Kinesis logging destination.

Type: VerifiedAccessLogKinesisDataFirehoseDestination object

Required: No

**logVersion**

The log version.

Type: String

Required: No

**s3**

Amazon S3 logging options.

Type: VerifiedAccessLogS3Destination object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessLogS3Destination

Options for Amazon S3 as a logging destination.

## Contents

**bucketName**

The bucket name.

Type: String

Required: No

**bucketOwner**

The AWS account number that owns the bucket.

Type: String

Required: No

**deliveryStatus**

The delivery status.

Type: VerifiedAccessLogDeliveryStatus object

Required: No

**enabled**

Indicates whether logging is enabled.

Type: Boolean

Required: No

**prefix**

The bucket prefix.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessLogS3DestinationOptions

Options for Amazon S3 as a logging destination.

## Contents

**Enabled**

Indicates whether logging is enabled.

Type: Boolean

Required: Yes

**BucketName**

The bucket name.

Type: String

Required: No

**BucketOwner**

The ID of the AWS account that owns the Amazon S3 bucket.

Type: String

Required: No

**Prefix**

The bucket prefix.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessSseSpecificationRequest

AWS Verified Access provides server side encryption by default to data at rest using AWS-owned KMS keys. You also have the option of using customer managed KMS keys, which can be specified using the options below.

## Contents

**CustomerManagedKeyEnabled**

Enable or disable the use of customer managed KMS keys for server side encryption.

Valid values: `True` | `False`

Type: Boolean

Required: No

**KmsKeyArn**

The ARN of the KMS key.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessSseSpecificationResponse

The options in use for server side encryption.

## Contents

**customerManagedKeyEnabled**

Indicates whether customer managed KMS keys are in use for server side encryption.

Valid values: `True` | `False`

Type: Boolean

Required: No

**kmsKeyArn**

The ARN of the KMS key.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessTrustProvider

Describes a Verified Access trust provider.

## Contents

**creationTime**

The creation time.

Type: String

Required: No

**description**

A description for the AWS Verified Access trust provider.

Type: String

Required: No

**deviceOptions**

The options for device-identity trust provider.

Type: DeviceOptions object

Required: No

**deviceTrustProviderType**

The type of device-based trust provider.

Type: String

Valid Values: `jamf | crowdstrike | jumpcloud`

Required: No

**lastUpdatedTime**

The last updated time.

Type: String

Required: No

**nativeApplicationOidcOptions**

The OpenID Connect (OIDC) options.

Type: NativeApplicationOidcOptions object

Required: No

**oidcOptions**

The options for an OpenID Connect-compatible user-identity trust provider.

Type: OidcOptions object

Required: No

**policyReferenceName**

The identifier to be used when working with policy rules.

Type: String

Required: No

**sseSpecification**

The options in use for server side encryption.

Type: VerifiedAccessSseSpecificationResponse object

Required: No

**TagSet.N**

The tags.

Type: Array of Tag objects

Required: No

**trustProviderType**

The type of Verified Access trust provider.

Type: String

Valid Values: `user | device`

Required: No

**userTrustProviderType**

The type of user-based trust provider.

Type: String

Valid Values: `iam-identity-center | oidc`

Required: No

**verifiedAccessTrustProviderId**

The ID of the AWS Verified Access trust provider.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VerifiedAccessTrustProviderCondensed

Condensed information about a trust provider.

## Contents

**description**

The description of trust provider.

Type: String

Required: No

**deviceTrustProviderType**

The type of device-based trust provider.

Type: String

Valid Values: `jamf | crowdstrike | jumpcloud`

Required: No

**trustProviderType**

The type of trust provider (user- or device-based).

Type: String

Valid Values: `user | device`

Required: No

**userTrustProviderType**

The type of user-based trust provider.

Type: String

Valid Values: `iam-identity-center | oidc`

Required: No

**verifiedAccessTrustProviderId**

The ID of the trust provider.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VgwTelemetry

Describes telemetry for a VPN tunnel.

## Contents

**acceptedRouteCount**

The number of accepted routes.

Type: Integer

Required: No

**certificateArn**

The Amazon Resource Name (ARN) of the VPN tunnel endpoint certificate.

Type: String

Required: No

**lastStatusChange**

The date and time of the last change in status. This field is updated when changes in IKE (Phase 1), IPSec (Phase 2), or BGP status are detected.

Type: Timestamp

Required: No

**outsideIpAddress**

The Internet-routable IP address of the virtual private gateway's outside interface.

Type: String

Required: No

**status**

The status of the VPN tunnel.

Type: String

Valid Values: `UP | DOWN`

Required: No

**statusMessage**

If an error occurs, a description of the error.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Volume

Describes a volume.

## Contents

**AttachmentSet.N**

> **Note**
>
> This parameter is not returned by CreateVolume.

Information about the volume attachments.

Type: Array of VolumeAttachment objects

Required: No

**availabilityZone**

The Availability Zone for the volume.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone for the volume.

Type: String

Required: No

**createTime**

The time stamp when volume creation was initiated.

Type: Timestamp

Required: No

**encrypted**

Indicates whether the volume is encrypted.

Type: Boolean

Required: No

**fastRestored**

> **Note**
>
> This parameter is not returned by CreateVolume.

Indicates whether the volume was created using fast snapshot restore.

Type: Boolean

Required: No

**iops**

The number of I/O operations per second (IOPS). For `gp3`, `io1`, and `io2` volumes, this represents the number of IOPS that are provisioned for the volume. For `gp2` volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting.

Type: Integer

Required: No

**kmsKeyId**

The Amazon Resource Name (ARN) of the AWS KMS key that was used to protect the volume encryption key for the volume.

Type: String

Required: No

**multiAttachEnabled**

Indicates whether Amazon EBS Multi-Attach is enabled.

Type: Boolean

Required: No

**operator**

The service provider that manages the volume.

Type: OperatorResponse object

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**size**

The size of the volume, in GiBs.

Type: Integer

Required: No

**snapshotId**

The snapshot from which the volume was created, if applicable.

Type: String

Required: No

**sourceVolumeId**

The ID of the source volume from which the volume copy was created. Only for volume copies.

Type: String

Required: No

**sseType**

> **Note**
>
> This parameter is not returned by CreateVolume.

Reserved for future use.

Type: String

Valid Values: `sse-ebs | sse-kms | none`

Required: No

**status**

The volume state.

Type: String

Valid Values: `creating | available | in-use | deleting | deleted | error`

Required: No

**TagSet.N**

Any tags assigned to the volume.

Type: Array of Tag objects

Required: No

**throughput**

The throughput that the volume supports, in MiB/s.

Type: Integer

Required: No

**volumeId**

The ID of the volume.

Type: String

Required: No

**volumeInitializationRate**

The Amazon EBS Provisioned Rate for Volume Initialization (volume initialization rate) specified for the volume during creation, in MiB/s. If no volume initialization rate was specified, the value is `null`.

Type: Integer

Required: No

**volumeType**

The volume type.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VolumeAttachment

Describes volume attachment details.

## Contents

**associatedResource**

The ARN of the AWS-managed resource to which the volume is attached.

Type: String

Required: No

**attachTime**

The time stamp when the attachment initiated.

Type: Timestamp

Required: No

**deleteOnTermination**

Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

Required: No

**device**

The device name.

If the volume is attached to an AWS-managed resource, this parameter returns `null`.

Type: String

Required: No

**ebsCardIndex**

The index of the EBS card. Some instance types support multiple EBS cards. The default EBS card index is 0.

Type: Integer

Required: No

**instanceId**

The ID of the instance.

If the volume is attached to an AWS-managed resource, this parameter returns `null`.

Type: String

Required: No

**instanceOwningService**

The service principal of the AWS service that owns the underlying resource to which the volume is attached.

This parameter is returned only for volumes that are attached to AWS-managed resources.

Type: String

Required: No

**status**

The attachment state of the volume.

Type: String

Valid Values: `attaching | attached | detaching | detached | busy`

Required: No

**volumeId**

The ID of the volume.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VolumeDetail

Describes an EBS volume.

## Contents

**Size**

The size of the volume, in GiB.

Type: Long

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VolumeModification

Describes the modification status of an EBS volume.

## Contents

**endTime**

The modification completion or failure time.

Type: Timestamp

Required: No

**modificationState**

The current modification state.

Type: String

Valid Values: `modifying | optimizing | completed | failed`

Required: No

**originalIops**

The original IOPS rate of the volume.

Type: Integer

Required: No

**originalMultiAttachEnabled**

The original setting for Amazon EBS Multi-Attach.

Type: Boolean

Required: No

**originalSize**

The original size of the volume, in GiB.

Type: Integer

Required: No

**originalThroughput**

The original throughput of the volume, in MiB/s.

Type: Integer

Required: No

**originalVolumeType**

The original EBS volume type of the volume.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

Required: No

**progress**

The modification progress, from 0 to 100 percent complete.

Type: Long

Required: No

**startTime**

The modification start time.

Type: Timestamp

Required: No

**statusMessage**

A status message about the modification progress or failure.

Type: String

Required: No

**targetIops**

The target IOPS rate of the volume.

Type: Integer

Required: No

**targetMultiAttachEnabled**

The target setting for Amazon EBS Multi-Attach.

Type: Boolean

Required: No

**targetSize**

The target size of the volume, in GiB.

Type: Integer

Required: No

**targetThroughput**

The target throughput of the volume, in MiB/s.

Type: Integer

Required: No

**targetVolumeType**

The target EBS volume type of the volume.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

Required: No

**volumeId**

The ID of the volume.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VolumeRecycleBinInfo

Information about a volume that is currently in the Recycle Bin.

## Contents

**availabilityZone**

The Availability Zone for the volume.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone for the volume.

Type: String

Required: No

**createTime**

The time stamp when volume creation was initiated.

Type: Timestamp

Required: No

**iops**

The number of I/O operations per second (IOPS) for the volume.

Type: Integer

Required: No

**operator**

The service provider that manages the volume.

Type: OperatorResponse object

Required: No

**outpostArn**

The ARN of the Outpost on which the volume is stored. For more information, see Amazon EBS volumes on Outposts in the *Amazon EBS User Guide*.

Type: String

Required: No

**recycleBinEnterTime**

The date and time when the volume entered the Recycle Bin.

Type: Timestamp

Required: No

**recycleBinExitTime**

The date and time when the volume is to be permanently deleted from the Recycle Bin.

Type: Timestamp

Required: No

**size**

The size of the volume, in GiB.

Type: Integer

Required: No

**snapshotId**

The snapshot from which the volume was created, if applicable.

Type: String

Required: No

**sourceVolumeId**

The ID of the source volume.

Type: String

Required: No

**state**

The state of the volume.

Type: String

Valid Values: `creating | available | in-use | deleting | deleted | error`

Required: No

**throughput**

The throughput that the volume supports, in MiB/s.

Type: Integer

Required: No

**volumeId**

The ID of the volume.

Type: String

Required: No

**volumeType**

The volume type.

Type: String

Valid Values: `standard | io1 | io2 | gp2 | sc1 | st1 | gp3`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# VolumeStatusAction

Describes a volume status operation code.

## Contents

**code**

The code identifying the operation, for example, `enable-volume-io`.

Type: String

Required: No

**description**

A description of the operation.

Type: String

Required: No

**eventId**

The ID of the event associated with this operation.

Type: String

Required: No

**eventType**

The event type associated with this operation.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++

- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VolumeStatusAttachmentStatus

Information about the instances to which the volume is attached.

## Contents

**instanceId**

The ID of the attached instance.

Type: String

Required: No

**ioPerformance**

The maximum IOPS supported by the attached instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VolumeStatusDetails

Describes a volume status.

## Contents

**name**

The name of the volume status.

- `io-enabled` - Indicates the volume I/O status. For more information, see Amazon EBS volume status checks.
- `io-performance` - Indicates the volume performance status. For more information, see Amazon EBS volume status checks.
- `initialization-state` - Indicates the status of the volume initialization process. For more information, see Initialize Amazon EBS volumes.

Type: String

Valid Values: `io-enabled | io-performance | initialization-state`

Required: No

**status**

The intended status of the volume status.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VolumeStatusEvent

Describes a volume status event.

## Contents

**description**

A description of the event.

Type: String

Required: No

**eventId**

The ID of this event.

Type: String

Required: No

**eventType**

The type of this event.

Type: String

Required: No

**instanceId**

The ID of the instance associated with the event.

Type: String

Required: No

**notAfter**

The latest end time of the event.

Type: Timestamp

Required: No

**notBefore**

The earliest start time of the event.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VolumeStatusInfo

Describes the status of a volume.

## Contents

**Details.N**

The details of the volume status.

Type: Array of VolumeStatusDetails objects

Required: No

**status**

The status of the volume.

Type: String

Valid Values: `ok | impaired | insufficient-data | warning`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VolumeStatusItem

Describes the volume status.

## Contents

**ActionsSet.N**

The details of the operation.

Type: Array of VolumeStatusAction objects

Required: No

**AttachmentStatuses.N**

Information about the instances to which the volume is attached.

Type: Array of VolumeStatusAttachmentStatus objects

Required: No

**availabilityZone**

The Availability Zone of the volume.

Type: String

Required: No

**availabilityZoneId**

The ID of the Availability Zone.

Type: String

Required: No

**EventsSet.N**

A list of events associated with the volume.

Type: Array of VolumeStatusEvent objects

Required: No

**initializationStatusDetails**

Information about the volume initialization. It can take up to 5 minutes for the volume initialization information to be updated.

Only available for volumes created from snapshots. Not available for empty volumes created without a snapshot.

For more information, see Initialize Amazon EBS volumes.

Type: InitializationStatusDetails object

Required: No

**operator**

The service provider that manages the resource.

Type: OperatorResponse object

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**volumeId**

The volume ID.

Type: String

Required: No

**volumeStatus**

The volume status.

Type: VolumeStatusInfo object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Vpc

Describes a VPC.

## Contents

**blockPublicAccessStates**

The state of VPC Block Public Access (BPA).

Type: BlockPublicAccessStates object

Required: No

**cidrBlock**

The primary IPv4 CIDR block for the VPC.

Type: String

Required: No

**CidrBlockAssociationSet.N**

Information about the IPv4 CIDR blocks associated with the VPC.

Type: Array of VpcCidrBlockAssociation objects

Required: No

**dhcpOptionsId**

The ID of the set of DHCP options you've associated with the VPC.

Type: String

Required: No

**instanceTenancy**

The allowed tenancy of instances launched into the VPC.

Type: String

Valid Values: `default | dedicated | host`

Required: No

**Ipv6CidrBlockAssociationSet.N**

Information about the IPv6 CIDR blocks associated with the VPC.

Type: Array of VpcIpv6CidrBlockAssociation objects

Required: No

**isDefault**

Indicates whether the VPC is the default VPC.

Type: Boolean

Required: No

**ownerId**

The ID of the AWS account that owns the VPC.

Type: String

Required: No

**state**

The current state of the VPC.

Type: String

Valid Values: `pending | available`

Required: No

**TagSet.N**

Any tags assigned to the VPC.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcAttachment

Describes an attachment between a virtual private gateway and a VPC.

## Contents

**state**

The current state of the attachment.

Type: String

Valid Values: `attaching | attached | detaching | detached`

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcBlockPublicAccessExclusion

A VPC BPA exclusion is a mode that can be applied to a single VPC or subnet that exempts it from the account's BPA mode and will allow bidirectional or egress-only access. You can create BPA exclusions for VPCs and subnets even when BPA is not enabled on the account to ensure that there is no traffic disruption to the exclusions when VPC BPA is turned on. To learn more about VPC BPA, see Block public access to VPCs and subnets in the *Amazon VPC User Guide*.

## Contents

**creationTimestamp**

When the exclusion was created.

Type: Timestamp

Required: No

**deletionTimestamp**

When the exclusion was deleted.

Type: Timestamp

Required: No

**exclusionId**

The ID of the exclusion.

Type: String

Required: No

**internetGatewayExclusionMode**

The exclusion mode for internet gateway traffic.

- `allow-bidirectional`: Allow all internet traffic to and from the excluded VPCs and subnets.
- `allow-egress`: Allow outbound internet traffic from the excluded VPCs and subnets. Block inbound internet traffic to the excluded VPCs and subnets. Only applies when VPC Block Public Access is set to Bidirectional.

Type: String

Valid Values: `allow-bidirectional | allow-egress`

Required: No

**lastUpdateTimestamp**

When the exclusion was last updated.

Type: Timestamp

Required: No

**reason**

The reason for the current exclusion state.

Type: String

Required: No

**resourceArn**

The ARN of the exclusion.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**state**

The state of the exclusion.

Type: String

Valid Values: `create-in-progress | create-complete | create-failed | update-in-progress | update-complete | update-failed | delete-in-progress | delete-complete | disable-in-progress | disable-complete`

Required: No

**TagSet.N**

`tag` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag

with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of Tag objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcBlockPublicAccessOptions

VPC Block Public Access (BPA) enables you to block resources in VPCs and subnets that you own in a Region from reaching or being reached from the internet through internet gateways and egress-only internet gateways. To learn more about VPC BPA, see Block public access to VPCs and subnets in the *Amazon VPC User Guide*.

## Contents

**awsAccountId**

An AWS account ID.

Type: String

Required: No

**awsRegion**

An AWS Region.

Type: String

Required: No

**exclusionsAllowed**

Determines if exclusions are allowed. If you have enabled VPC BPA at the Organization level, exclusions may be `not-allowed`. Otherwise, they are `allowed`.

Type: String

Valid Values: `allowed | not-allowed`

Required: No

**internetGatewayBlockMode**

The current mode of VPC BPA.

- `off`: VPC BPA is not enabled and traffic is allowed to and from internet gateways and egress-only internet gateways in this Region.
- `block-bidirectional`: Block all traffic to and from internet gateways and egress-only internet gateways in this Region (except for excluded VPCs and subnets).

- `block-ingress`: Block all internet traffic to the VPCs in this Region (except for VPCs or subnets which are excluded). Only traffic to and from NAT gateways and egress-only internet gateways is allowed because these gateways only allow outbound connections to be established.

Type: String

Valid Values: `off | block-bidirectional | block-ingress`

Required: No

**lastUpdateTimestamp**

The last time the VPC BPA mode was updated.

Type: Timestamp

Required: No

**managedBy**

The entity that manages the state of VPC BPA. Possible values include:

- `account` - The state is managed by the account.
- `declarative-policy` - The state is managed by a declarative policy and can't be modified by the account.

Type: String

Valid Values: `account | declarative-policy`

Required: No

**reason**

The reason for the current state.

Type: String

Required: No

**state**

The current state of VPC BPA.

Type: String

Valid Values: `default-state | update-in-progress | update-complete`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcCidrBlockAssociation

Describes an IPv4 CIDR block associated with a VPC.

## Contents

**associationId**

The association ID for the IPv4 CIDR block.

Type: String

Required: No

**cidrBlock**

The IPv4 CIDR block.

Type: String

Required: No

**cidrBlockState**

Information about the state of the CIDR block.

Type: VpcCidrBlockState object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcCidrBlockState

Describes the state of a CIDR block.

## Contents

**state**

The state of the CIDR block.

Type: String

Valid Values: `associating | associated | disassociating | disassociated | failing | failed`

Required: No

**statusMessage**

A message about the status of the CIDR block, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcClassicLink

> **Note**
>
> Deprecated.

Describes whether a VPC is enabled for ClassicLink.

## Contents

**classicLinkEnabled**

Indicates whether the VPC is enabled for ClassicLink.

Type: Boolean

Required: No

**TagSet.N**

Any tags assigned to the VPC.

Type: Array of Tag objects

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2

- AWS SDK for Ruby V3

# VpcEncryptionControl

Describes the configuration and state of VPC encryption controls.

For more information, see Enforce VPC encryption in transit in the *Amazon VPC User Guide*.

## Contents

**mode**

The encryption mode for the VPC Encryption Control configuration.

Type: String

Valid Values: `monitor | enforce`

Required: No

**resourceExclusions**

Information about resource exclusions for the VPC Encryption Control configuration.

Type: VpcEncryptionControlExclusions object

Required: No

**state**

The current state of the VPC Encryption Control configuration.

Type: String

Valid Values: `enforce-in-progress | monitor-in-progress | enforce-failed | monitor-failed | deleting | deleted | available | creating | delete-failed`

Required: No

**stateMessage**

A message providing additional information about the encryption control state.

Type: String

Required: No

**TagSet.N**

The tags assigned to the VPC Encryption Control configuration.

Type: Array of Tag objects

Required: No

**vpcEncryptionControlId**

The ID of the VPC Encryption Control configuration.

Type: String

Required: No

**vpcId**

The ID of the VPC associated with the encryption control configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcEncryptionControlConfiguration

Describes the configuration settings for VPC Encryption Control.

For more information, see Enforce VPC encryption in transit in the *Amazon VPC User Guide*.

## Contents

**Mode**

The encryption mode for the VPC Encryption Control configuration.

Type: String

Valid Values: `monitor | enforce`

Required: Yes

**EgressOnlyInternetGatewayExclusion**

Specifies whether to exclude egress-only internet gateway traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**ElasticFileSystemExclusion**

Specifies whether to exclude Elastic File System traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**InternetGatewayExclusion**

Specifies whether to exclude internet gateway traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**LambdaExclusion**

Specifies whether to exclude Lambda function traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**NatGatewayExclusion**

Specifies whether to exclude NAT gateway traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**VirtualPrivateGatewayExclusion**

Specifies whether to exclude virtual private gateway traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**VpcLatticeExclusion**

Specifies whether to exclude VPC Lattice traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

**VpcPeeringExclusion**

Specifies whether to exclude VPC peering connection traffic from encryption enforcement.

Type: String

Valid Values: `enable | disable`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcEncryptionControlExclusion

Describes an exclusion configuration for VPC Encryption Control.

For more information, see Enforce VPC encryption in transit in the *Amazon VPC User Guide*.

## Contents

**state**

The current state of the exclusion configuration.

Type: String

Valid Values: `enabling | enabled | disabling | disabled`

Required: No

**stateMessage**

A message providing additional information about the exclusion state.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcEncryptionControlExclusions

Describes the exclusion configurations for various resource types in VPC Encryption Control.

For more information, see Enforce VPC encryption in transit in the *Amazon VPC User Guide*.

## Contents

**egressOnlyInternetGateway**

The exclusion configuration for egress-only internet gateway traffic.

Type: VpcEncryptionControlExclusion object

Required: No

**elasticFileSystem**

The exclusion configuration for Elastic File System traffic.

Type: VpcEncryptionControlExclusion object

Required: No

**internetGateway**

The exclusion configuration for internet gateway traffic.

Type: VpcEncryptionControlExclusion object

Required: No

**lambda**

The exclusion configuration for Lambda function traffic.

Type: VpcEncryptionControlExclusion object

Required: No

**natGateway**

The exclusion configuration for NAT gateway traffic.

Type: VpcEncryptionControlExclusion object

Required: No

**virtualPrivateGateway**

The exclusion configuration for virtual private gateway traffic.

Type: VpcEncryptionControlExclusion object

Required: No

**vpcLattice**

The exclusion configuration for VPC Lattice traffic.

Type: VpcEncryptionControlExclusion object

Required: No

**vpcPeering**

The exclusion configuration for VPC peering connection traffic.

Type: VpcEncryptionControlExclusion object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcEncryptionNonCompliantResource

Describes a resource that is not compliant with VPC encryption requirements.

For more information, see Enforce VPC encryption in transit in the *Amazon VPC User Guide*.

## Contents

**description**

A description of the non-compliant resource.

Type: String

Required: No

**id**

The ID of the non-compliant resource.

Type: String

Required: No

**isExcludable**

Indicates whether the resource can be excluded from encryption enforcement.

Type: Boolean

Required: No

**type**

The type of the non-compliant resource.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcEndpoint

Describes a VPC endpoint.

## Contents

**creationTimestamp**

The date and time that the endpoint was created.

Type: Timestamp

Required: No

**DnsEntrySet.N**

(Interface endpoint) The DNS entries for the endpoint.

Type: Array of DnsEntry objects

Required: No

**dnsOptions**

The DNS options for the endpoint.

Type: DnsOptions object

Required: No

**failureReason**

Reason for the failure.

Type: String

Required: No

**GroupSet.N**

(Interface endpoint) Information about the security groups that are associated with the network interface.

Type: Array of SecurityGroupIdentifier objects

Required: No

**ipAddressType**

The IP address type for the endpoint.

Type: String

Valid Values: `ipv4 | dualstack | ipv6`

Required: No

**Ipv4PrefixSet.N**

Array of IPv4 prefixes.

Type: Array of SubnetIpPrefixes objects

Required: No

**Ipv6PrefixSet.N**

Array of IPv6 prefixes.

Type: Array of SubnetIpPrefixes objects

Required: No

**lastError**

The last error that occurred for endpoint.

Type: LastError object

Required: No

**NetworkInterfaceIdSet.N**

(Interface endpoint) The network interfaces for the endpoint.

Type: Array of strings

Required: No

**ownerId**

The ID of the AWS account that owns the endpoint.

Type: String

Required: No

**policyDocument**

The policy document associated with the endpoint, if applicable.

Type: String

Required: No

**privateDnsEnabled**

(Interface endpoint) Indicates whether the VPC is associated with a private hosted zone.

Type: Boolean

Required: No

**requesterManaged**

Indicates whether the endpoint is being managed by its service.

Type: Boolean

Required: No

**resourceConfigurationArn**

The Amazon Resource Name (ARN) of the resource configuration.

Type: String

Required: No

**RouteTableIdSet.N**

(Gateway endpoint) The IDs of the route tables associated with the endpoint.

Type: Array of strings

Required: No

**serviceName**

The name of the service to which the endpoint is associated.

Type: String

Required: No

**serviceNetworkArn**

The Amazon Resource Name (ARN) of the service network.

Type: String

Required: No

**serviceRegion**

The Region where the service is hosted.

Type: String

Required: No

**state**

The state of the endpoint.

Type: String

Valid Values: `PendingAcceptance | Pending | Available | Deleting | Deleted | Rejected | Failed | Expired | Partial`

Required: No

**SubnetIdSet.N**

(Interface endpoint) The subnets for the endpoint.

Type: Array of strings

Required: No

**TagSet.N**

The tags assigned to the endpoint.

Type: Array of Tag objects

Required: No

**vpcEndpointId**

The ID of the endpoint.

Type: String

Required: No

**vpcEndpointType**

The type of endpoint.

Type: String

Valid Values: `Interface | Gateway | GatewayLoadBalancer | Resource | ServiceNetwork`

Required: No

**vpcId**

The ID of the VPC to which the endpoint is associated.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcEndpointAssociation

Describes the VPC resources, VPC endpoint services, Lattice services, or service networks associated with the VPC endpoint.

## Contents

**associatedResourceAccessibility**

The connectivity status of the resources associated to a VPC endpoint. The resource is accessible if the associated resource configuration is `AVAILABLE`, otherwise the resource is inaccessible.

Type: String

Required: No

**associatedResourceArn**

The Amazon Resource Name (ARN) of the associated resource.

Type: String

Required: No

**dnsEntry**

The DNS entry of the VPC endpoint association.

Type: DnsEntry object

Required: No

**failureCode**

An error code related to why an VPC endpoint association failed.

Type: String

Required: No

**failureReason**

A message related to why an VPC endpoint association failed.

Type: String

Required: No

**id**

The ID of the VPC endpoint association.

Type: String

Required: No

**privateDnsEntry**

The private DNS entry of the VPC endpoint association.

Type: DnsEntry object

Required: No

**resourceConfigurationGroupArn**

The Amazon Resource Name (ARN) of the resource configuration group.

Type: String

Required: No

**serviceNetworkArn**

The Amazon Resource Name (ARN) of the service network.

Type: String

Required: No

**serviceNetworkName**

The name of the service network.

Type: String

Required: No

**TagSet.N**

The tags to apply to the VPC endpoint association.

Type: Array of Tag objects

Required: No

**vpcEndpointId**

The ID of the VPC endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcEndpointConnection

Describes a VPC endpoint connection to a service.

## Contents

**creationTimestamp**

The date and time that the VPC endpoint was created.

Type: Timestamp

Required: No

**DnsEntrySet.N**

The DNS entries for the VPC endpoint.

Type: Array of DnsEntry objects

Required: No

**GatewayLoadBalancerArnSet.N**

The Amazon Resource Names (ARNs) of the Gateway Load Balancers for the service.

Type: Array of strings

Required: No

**ipAddressType**

The IP address type for the endpoint.

Type: String

Valid Values: `ipv4 | dualstack | ipv6`

Required: No

**NetworkLoadBalancerArnSet.N**

The Amazon Resource Names (ARNs) of the network load balancers for the service.

Type: Array of strings

Required: No

**serviceId**

The ID of the service to which the endpoint is connected.

Type: String

Required: No

**TagSet.N**

The tags.

Type: Array of Tag objects

Required: No

**vpcEndpointConnectionId**

The ID of the VPC endpoint connection.

Type: String

Required: No

**vpcEndpointId**

The ID of the VPC endpoint.

Type: String

Required: No

**vpcEndpointOwner**

The ID of the AWS account that owns the VPC endpoint.

Type: String

Required: No

**vpcEndpointRegion**

The Region of the endpoint.

Type: String

Required: No

**vpcEndpointState**

The state of the VPC endpoint.

Type: String

Valid Values: `PendingAcceptance | Pending | Available | Deleting | Deleted | Rejected | Failed | Expired | Partial`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcIpv6CidrBlockAssociation

Describes an IPv6 CIDR block associated with a VPC.

## Contents

**associationId**

The association ID for the IPv6 CIDR block.

Type: String

Required: No

**ipSource**

The source that allocated the IP address space. `byoip` or `amazon` indicates public IP address space allocated by Amazon or space that you have allocated with Bring your own IP (BYOIP). `none` indicates private space.

Type: String

Valid Values: `amazon | byoip | none`

Required: No

**ipv6AddressAttribute**

Public IPv6 addresses are those advertised on the internet from AWS. Private IP addresses are not and cannot be advertised on the internet from AWS.

Type: String

Valid Values: `public | private`

Required: No

**ipv6CidrBlock**

The IPv6 CIDR block.

Type: String

Required: No

**ipv6CidrBlockState**

Information about the state of the CIDR block.

Type: VpcCidrBlockState object

Required: No

**ipv6Pool**

The ID of the IPv6 address pool from which the IPv6 CIDR block is allocated.

Type: String

Required: No

**networkBorderGroup**

The name of the unique set of Availability Zones, Local Zones, or Wavelength Zones from which AWS advertises IP addresses, for example, `us-east-1-wl1-bos-wlz-1`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcPeeringConnection

Describes a VPC peering connection.

## Contents

**accepterVpcInfo**

Information about the accepter VPC. CIDR block information is only returned when describing an active VPC peering connection.

Type: VpcPeeringConnectionVpcInfo object

Required: No

**expirationTime**

The time that an unaccepted VPC peering connection will expire.

Type: Timestamp

Required: No

**requesterVpcInfo**

Information about the requester VPC. CIDR block information is only returned when describing an active VPC peering connection.

Type: VpcPeeringConnectionVpcInfo object

Required: No

**status**

The status of the VPC peering connection.

Type: VpcPeeringConnectionStateReason object

Required: No

**TagSet.N**

Any tags assigned to the resource.

Type: Array of Tag objects

Required: No

**vpcPeeringConnectionId**

The ID of the VPC peering connection.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcPeeringConnectionOptionsDescription

Describes the VPC peering connection options.

## Contents

**allowDnsResolutionFromRemoteVpc**

Indicates whether a local VPC can resolve public DNS hostnames to private IP addresses when queried from instances in a peer VPC.

Type: Boolean

Required: No

**allowEgressFromLocalClassicLinkToRemoteVpc**

Deprecated.

Type: Boolean

Required: No

**allowEgressFromLocalVpcToRemoteClassicLink**

Deprecated.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcPeeringConnectionStateReason

Describes the status of a VPC peering connection.

## Contents

**code**

The status of the VPC peering connection.

Type: String

Valid Values: `initiating-request | pending-acceptance | active | deleted | rejected | failed | expired | provisioning | deleting`

Required: No

**message**

A message that provides more information about the status, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpcPeeringConnectionVpcInfo

Describes a VPC in a VPC peering connection.

## Contents

**cidrBlock**

The IPv4 CIDR block for the VPC.

Type: String

Required: No

**CidrBlockSet.N**

Information about the IPv4 CIDR blocks for the VPC.

Type: Array of CidrBlock objects

Required: No

**Ipv6CidrBlockSet.N**

The IPv6 CIDR block for the VPC.

Type: Array of Ipv6CidrBlock objects

Required: No

**ownerId**

The ID of the AWS account that owns the VPC.

Type: String

Required: No

**peeringOptions**

Information about the VPC peering connection options for the accepter or requester VPC.

Type: VpcPeeringConnectionOptionsDescription object

Required: No

**region**

The Region in which the VPC is located.

Type: String

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpnConcentrator

Describes a VPN concentrator.

## Contents

**state**

The current state of the VPN concentrator.

Type: String

Required: No

**TagSet.N**

Any tags assigned to the VPN concentrator.

Type: Array of Tag objects

Required: No

**transitGatewayAttachmentId**

The ID of the transit gateway attachment for the VPN concentrator.

Type: String

Required: No

**transitGatewayId**

The ID of the transit gateway associated with the VPN concentrator.

Type: String

Required: No

**type**

The type of VPN concentrator.

Type: String

Required: No

**vpnConcentratorId**

The ID of the VPN concentrator.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpnConnection

Describes a VPN connection.

## Contents

**category**

The category of the VPN connection. A value of `VPN` indicates an AWS VPN connection. A value of `VPN-Classic` indicates an AWS Classic VPN connection.

Type: String

Required: No

**coreNetworkArn**

The ARN of the core network.

Type: String

Required: No

**coreNetworkAttachmentArn**

The ARN of the core network attachment.

Type: String

Required: No

**customerGatewayConfiguration**

The configuration information for the VPN connection's customer gateway (in the native XML format). This element is always present in the CreateVpnConnection response; however, it's present in the DescribeVpnConnections response only if the VPN connection is in the `pending` or `available` state.

Type: String

Required: No

**customerGatewayId**

The ID of the customer gateway at your end of the VPN connection.

Type: String

Required: No

**gatewayAssociationState**

The current state of the gateway association.

Type: String

Valid Values: `associated | not-associated | associating | disassociating`

Required: No

**options**

The VPN connection options.

Type: VpnConnectionOptions object

Required: No

**preSharedKeyArn**

The Amazon Resource Name (ARN) of the Secrets Manager secret storing the pre-shared key(s) for the VPN connection.

Type: String

Required: No

**Routes.N**

The static routes associated with the VPN connection.

Type: Array of VpnStaticRoute objects

Required: No

**state**

The current state of the VPN connection.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

**TagSet.N**

Any tags assigned to the VPN connection.

Type: Array of Tag objects

Required: No

**transitGatewayId**

The ID of the transit gateway associated with the VPN connection.

Type: String

Required: No

**type**

The type of VPN connection.

Type: String

Valid Values: `ipsec.1`

Required: No

**VgwTelemetry.N**

Information about the VPN tunnel.

Type: Array of VgwTelemetry objects

Required: No

**vpnConcentratorId**

The ID of the VPN concentrator associated with the VPN connection.

Type: String

Required: No

**vpnConnectionId**

The ID of the VPN connection.

Type: String

Required: No

**vpnGatewayId**

The ID of the virtual private gateway at the AWS side of the VPN connection.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpnConnectionDeviceType

List of customer gateway devices that have a sample configuration file available for use. You can also see the list of device types with sample configuration files available under Your customer gateway device in the *AWS Site-to-Site VPN User Guide*.

## Contents

**platform**

Customer gateway device platform.

Type: String

Required: No

**software**

Customer gateway device software version.

Type: String

Required: No

**vendor**

Customer gateway device vendor.

Type: String

Required: No

**vpnConnectionDeviceTypeId**

Customer gateway device identifier.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpnConnectionOptions

Describes VPN connection options.

## Contents

**enableAcceleration**

Indicates whether acceleration is enabled for the VPN connection.

Type: Boolean

Required: No

**localIpv4NetworkCidr**

The IPv4 CIDR on the customer gateway (on-premises) side of the VPN connection.

Type: String

Required: No

**localIpv6NetworkCidr**

The IPv6 CIDR on the customer gateway (on-premises) side of the VPN connection.

Type: String

Required: No

**outsideIpAddressType**

The type of IPv4 address assigned to the outside interface of the customer gateway.

Valid values: `PrivateIpv4` | `PublicIpv4` | `Ipv6`

Default: `PublicIpv4`

Type: String

Required: No

**remoteIpv4NetworkCidr**

The IPv4 CIDR on the AWS side of the VPN connection.

Type: String

Required: No

**remoteIpv6NetworkCidr**

The IPv6 CIDR on the AWS side of the VPN connection.

Type: String

Required: No

**staticRoutesOnly**

Indicates whether the VPN connection uses static routes only. Static routes must be used for devices that don't support BGP.

Type: Boolean

Required: No

**transportTransitGatewayAttachmentId**

The transit gateway attachment ID in use for the VPN tunnel.

Type: String

Required: No

**tunnelBandwidth**

The configured bandwidth for the VPN tunnel. Represents the current throughput capacity setting for the tunnel connection. `standard` tunnel bandwidth supports up to 1.25 Gbps per tunnel while `large` supports up to 5 Gbps per tunnel. If no tunnel bandwidth was specified for the connection, `standard` is used as the default value.

Type: String

Valid Values: `standard | large`

Required: No

**tunnelInsideIpVersion**

Indicates whether the VPN tunnels process IPv4 or IPv6 traffic.

Type: String

Valid Values: `ipv4 | ipv6`

Required: No

**TunnelOptionSet.N**

Indicates the VPN tunnel options.

Type: Array of TunnelOption objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpnConnectionOptionsSpecification

Describes VPN connection options.

## Contents

**EnableAcceleration**

Indicate whether to enable acceleration for the VPN connection.

Default: `false`

Type: Boolean

Required: No

**LocalIpv4NetworkCidr**

The IPv4 CIDR on the customer gateway (on-premises) side of the VPN connection.

Default: `0.0.0.0/0`

Type: String

Required: No

**LocalIpv6NetworkCidr**

The IPv6 CIDR on the customer gateway (on-premises) side of the VPN connection.

Default: `::/0`

Type: String

Required: No

**OutsideIpAddressType**

The type of IP address assigned to the outside interface of the customer gateway device.

Valid values: `PrivateIpv4` | `PublicIpv4` | `Ipv6`

Default: `PublicIpv4`

Type: String

Required: No

**RemoteIpv4NetworkCidr**

The IPv4 CIDR on the AWS side of the VPN connection.

Default: `0.0.0.0/0`

Type: String

Required: No

**RemoteIpv6NetworkCidr**

The IPv6 CIDR on the AWS side of the VPN connection.

Default: `::/0`

Type: String

Required: No

**StaticRoutesOnly**

Indicate whether the VPN connection uses static routes only. If you are creating a VPN connection for a device that does not support BGP, you must specify `true`. Use CreateVpnConnectionRoute to create a static route.

Default: `false`

Type: Boolean

Required: No

**TransportTransitGatewayAttachmentId**

The transit gateway attachment ID to use for the VPN tunnel.

Required if `OutsideIpAddressType` is set to `PrivateIpv4`.

Type: String

Required: No

**TunnelBandwidth**

The desired bandwidth specification for the VPN tunnel, used when creating or modifying VPN connection options to set the tunnel's throughput capacity. `standard` supports up to 1.25 Gbps per tunnel, while `large` supports up to 5 Gbps per tunnel. The default value is `standard`. Existing VPN connections without a bandwidth setting will automatically default to `standard`.

Type: String

Valid Values: `standard | large`

Required: No

**TunnelInsideIpVersion**

Indicate whether the VPN tunnels process IPv4 or IPv6 traffic.

Default: `ipv4`

Type: String

Valid Values: `ipv4 | ipv6`

Required: No

**TunnelOptions.N**

The tunnel options for the VPN connection.

Type: Array of VpnTunnelOptionsSpecification objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpnGateway

Describes a virtual private gateway.

## Contents

**amazonSideAsn**

The private Autonomous System Number (ASN) for the Amazon side of a BGP session.

Type: Long

Required: No

**Attachments.N**

Any VPCs attached to the virtual private gateway.

Type: Array of VpcAttachment objects

Required: No

**availabilityZone**

The Availability Zone where the virtual private gateway was created, if applicable. This field may be empty or not returned.

Type: String

Required: No

**state**

The current state of the virtual private gateway.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

**TagSet.N**

Any tags assigned to the virtual private gateway.

Type: Array of Tag objects

Required: No

**type**

The type of VPN connection the virtual private gateway supports.

Type: String

Valid Values: `ipsec.1`

Required: No

**vpnGatewayId**

The ID of the virtual private gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpnStaticRoute

Describes a static route for a VPN connection.

## Contents

**destinationCidrBlock**

The CIDR block associated with the local subnet of the customer data center.

Type: String

Required: No

**source**

Indicates how the routes were provided.

Type: String

Valid Values: `Static`

Required: No

**state**

The current state of the static route.

Type: String

Valid Values: `pending | available | deleting | deleted`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpnTunnelLogOptions

Options for logging VPN tunnel activity.

## Contents

**cloudWatchLogOptions**

Options for sending VPN tunnel logs to CloudWatch.

Type: CloudWatchLogOptions object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpnTunnelLogOptionsSpecification

Options for logging VPN tunnel activity.

## Contents

**CloudWatchLogOptions**

Options for sending VPN tunnel logs to CloudWatch.

Type: CloudWatchLogOptionsSpecification object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# VpnTunnelOptionsSpecification

The tunnel options for a single VPN tunnel.

## Contents

**DPDTimeoutAction**

The action to take after DPD timeout occurs. Specify `restart` to restart the IKE initiation. Specify `clear` to end the IKE session.

Valid Values: `clear` | none | `restart`

Default: `clear`

Type: String

Required: No

**DPDTimeoutSeconds**

The number of seconds after which a DPD timeout occurs.

Constraints: A value greater than or equal to 30.

Default: `30`

Type: Integer

Required: No

**EnableTunnelLifecycleControl**

Turn on or off tunnel endpoint lifecycle control feature.

Type: Boolean

Required: No

**IKEVersion.N**

The IKE versions that are permitted for the VPN tunnel.

Valid values: `ikev1` | `ikev2`

Type: Array of IKEVersionsRequestListValue objects

Required: No

**LogOptions**

Options for logging VPN tunnel activity.

Type: VpnTunnelLogOptionsSpecification object

Required: No

**Phase1DHGroupNumber.N**

One or more Diffie-Hellman group numbers that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: 2 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24

Type: Array of Phase1DHGroupNumbersRequestListValue objects

Required: No

**Phase1EncryptionAlgorithm.N**

One or more encryption algorithms that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: AES128 | AES256 | AES128-GCM-16 | AES256-GCM-16

Type: Array of Phase1EncryptionAlgorithmsRequestListValue objects

Required: No

**Phase1IntegrityAlgorithm.N**

One or more integrity algorithms that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: SHA1 | SHA2-256 | SHA2-384 | SHA2-512

Type: Array of Phase1IntegrityAlgorithmsRequestListValue objects

Required: No

**Phase1LifetimeSeconds**

The lifetime for phase 1 of the IKE negotiation, in seconds.

Constraints: A value between 900 and 28,800.

Default: `28800`

Type: Integer

Required: No

**Phase2DHGroupNumber.N**

One or more Diffie-Hellman group numbers that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: 2 | 5 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24

Type: Array of Phase2DHGroupNumbersRequestListValue objects

Required: No

**Phase2EncryptionAlgorithm.N**

One or more encryption algorithms that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: `AES128` | `AES256` | `AES128-GCM-16` | `AES256-GCM-16`

Type: Array of Phase2EncryptionAlgorithmsRequestListValue objects

Required: No

**Phase2IntegrityAlgorithm.N**

One or more integrity algorithms that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: `SHA1` | `SHA2-256` | `SHA2-384` | `SHA2-512`

Type: Array of Phase2IntegrityAlgorithmsRequestListValue objects

Required: No

**Phase2LifetimeSeconds**

The lifetime for phase 2 of the IKE negotiation, in seconds.

Constraints: A value between 900 and 3,600. The value must be less than the value for `Phase1LifetimeSeconds`.

Default: `3600`

Type: Integer

Required: No

**PreSharedKey**

The pre-shared key (PSK) to establish initial authentication between the virtual private gateway and customer gateway.

Constraints: Allowed characters are alphanumeric characters, periods (.), and underscores (_). Must be between 8 and 64 characters in length and cannot start with zero (0).

Type: String

Required: No

**RekeyFuzzPercentage**

The percentage of the rekey window (determined by `RekeyMarginTimeSeconds`) during which the rekey time is randomly selected.

Constraints: A value between 0 and 100.

Default: `100`

Type: Integer

Required: No

**RekeyMarginTimeSeconds**

The margin time, in seconds, before the phase 2 lifetime expires, during which the AWS side of the VPN connection performs an IKE rekey. The exact time of the rekey is randomly selected based on the value for `RekeyFuzzPercentage`.

Constraints: A value between 60 and half of `Phase2LifetimeSeconds`.

Default: 270

Type: Integer

Required: No

**ReplayWindowSize**

The number of packets in an IKE replay window.

Constraints: A value between 64 and 2048.

Default: 1024

Type: Integer

Required: No

**StartupAction**

The action to take when the establishing the tunnel for the VPN connection. By default, your customer gateway device must initiate the IKE negotiation and bring up the tunnel. Specify start for AWS to initiate the IKE negotiation.

Valid Values: add | start

Default: add

Type: String

Required: No

**TunnelInsideCidr**

The range of inside IPv4 addresses for the tunnel. Any specified CIDR blocks must be unique across all VPN connections that use the same virtual private gateway.

Constraints: A size /30 CIDR block from the 169.254.0.0/16 range. The following CIDR blocks are reserved and cannot be used:

- 169.254.0.0/30
- 169.254.1.0/30
- 169.254.2.0/30
- 169.254.3.0/30

- `169.254.4.0/30`
- `169.254.5.0/30`
- `169.254.169.252/30`

Type: String

Required: No

**TunnelInsideIpv6Cidr**

The range of inside IPv6 addresses for the tunnel. Any specified CIDR blocks must be unique across all VPN connections that use the same transit gateway.

Constraints: A size /126 CIDR block from the local `fd00::/8` range.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- AWS SDK for C++
- AWS SDK for Java V2
- AWS SDK for Ruby V3

# Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see Signing AWS API requests in the *IAM User Guide*.

**Action**

The action to be performed.

Type: string

Required: Yes

**Version**

The API version that the request is written for, expressed in the format YYYY-MM-DD.

Type: string

Required: Yes

**X-Amz-Algorithm**

The hash algorithm that you used to create the request signature.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

**X-Amz-Credential**

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4_request"). The value is expressed in the following format: *access_key*/*YYYYMMDD*/*region*/*service*/aws4_request.

For more information, see Create a signed AWS API request in the *IAM User Guide*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

**X-Amz-Date**

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'T'HHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: `20120325T120000Z`.

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see Elements of an AWS API request signature in the *IAM User Guide*.

Type: string

Required: Conditional

**X-Amz-Security-Token**

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS STS, see AWS services that work with IAM in the *IAM User Guide*.

Condition: If you're using temporary security credentials from AWS STS, you must include the security token.

Type: string

Required: Conditional

**X-Amz-Signature**

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

**X-Amz-SignedHeaders**

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see Create a signed AWS API request in the *IAM User Guide*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

# Common Error Types

This section lists common error types that this AWS service may return. Not all services return all error types listed here. For errors specific to an API action for this service, see the topic for that API action.

**AccessDeniedException**

You don't have permission to perform this action. Verify that your IAM policy includes the required permissions.

HTTP Status Code: 403

**ExpiredTokenException**

The security token included in the request has expired. Request a new security token and try again.

HTTP Status Code: 403

**IncompleteSignature**

The request signature doesn't conform to AWS standards. Verify that you're using valid AWS credentials and that your request is properly formatted. If you're using an SDK, ensure it's up to date.

HTTP Status Code: 400

**InternalFailure**

The request can't be processed right now because of an internal server issue. Try again later. If the problem persists, contact AWS Support.

HTTP Status Code: 500

**InvalidParameterCombination**

Parameters that must not be used together were used together. Remove one of the conflicting parameters and try again.

HTTP Status Code: 400

**InvalidParameterValue**

A value that you provided for a parameter isn't valid. Check the parameter constraints and try again.

HTTP Status Code: 400

**InvalidQueryParameter**

The AWS query string is malformed or doesn't adhere to AWS standards. Verify the query string format and try again.

HTTP Status Code: 400

**MalformedQueryString**

The query string contains a syntax error. Verify the query string and try again.

HTTP Status Code: 404

**MissingAction**

The request is missing the Action parameter. Add the Action parameter and try again.

HTTP Status Code: 400

**MissingAuthenticationToken**

The request must contain a valid AWS access key ID or X.509 certificate. Verify that your credentials are included in the request.

HTTP Status Code: 403

**MissingParameter**

A required parameter for the specified action isn't included in the request. Add the missing parameter and try again.

HTTP Status Code: 400

**NotAuthorized**

You don't have permissions to perform this action. Verify that your IAM policy includes the required permissions.

HTTP Status Code: 401

**OptInRequired**

Your AWS account needs a subscription for this service. Verify that you've enabled the service in your account.

HTTP Status Code: 403

**RequestExpired**

The request has expired. This can happen if the request took more than 15 minutes to reach the service, the date stamp is more than 15 minutes in the future, or a pre-signed URL has expired. Generate a new request with a current timestamp and try again.

HTTP Status Code: 400

**ServiceUnavailable**

The service is temporarily unavailable. Try again later.

HTTP Status Code: 503

**ThrottlingException**

Your request rate is too high. The AWS SDKs automatically retry requests that receive this exception. Reduce the frequency of requests.

HTTP Status Code: 400

**UnrecognizedClientException**

The X.509 certificate or AWS access key ID you provided doesn't exist in our records. Verify that you're using valid credentials and that they haven't expired.

HTTP Status Code: 403

**ValidationError**

The input doesn't meet the required format or constraints. Check that all required parameters are included and that values are valid.

HTTP Status Code: 400