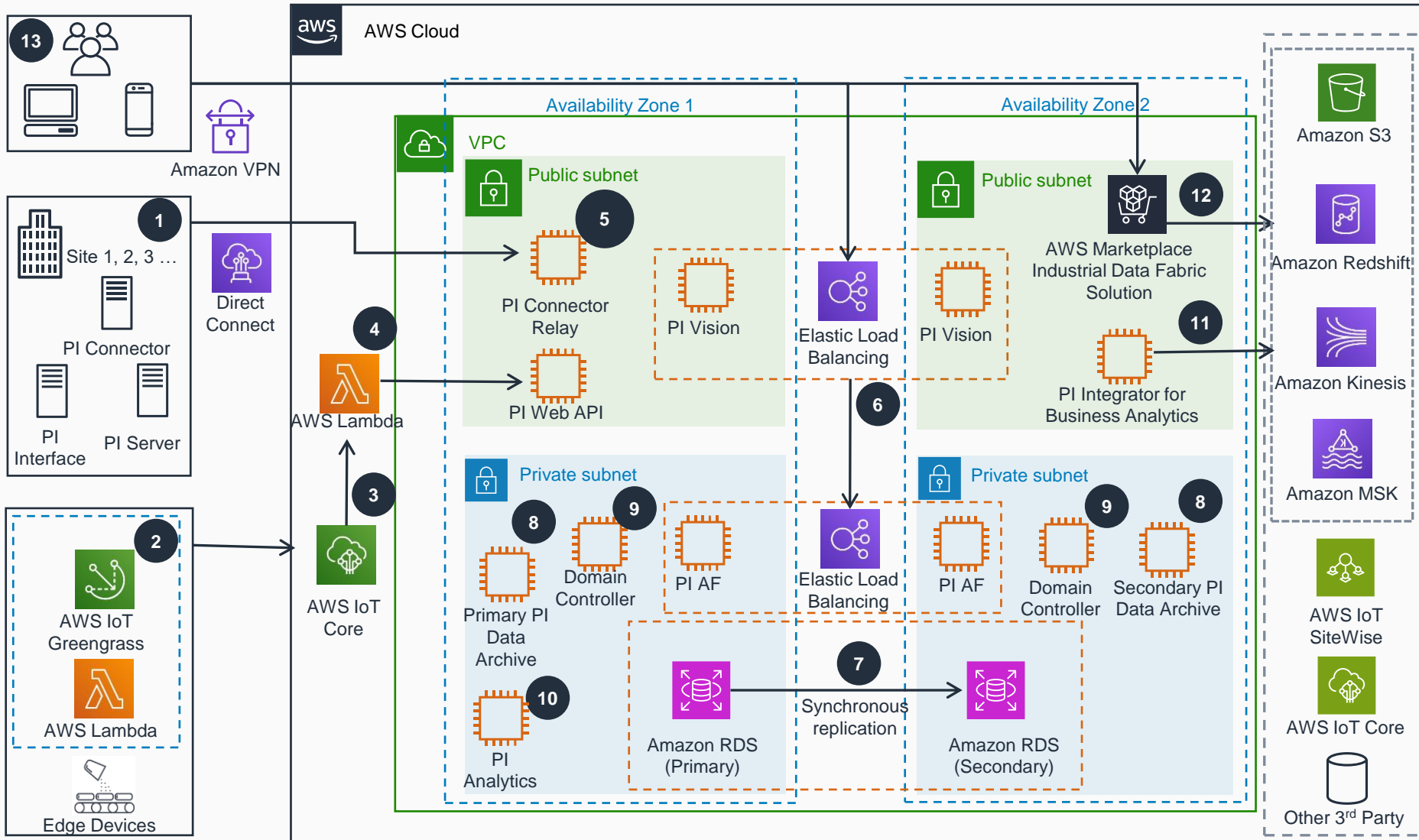


Guidance for Aveva PI System on AWS

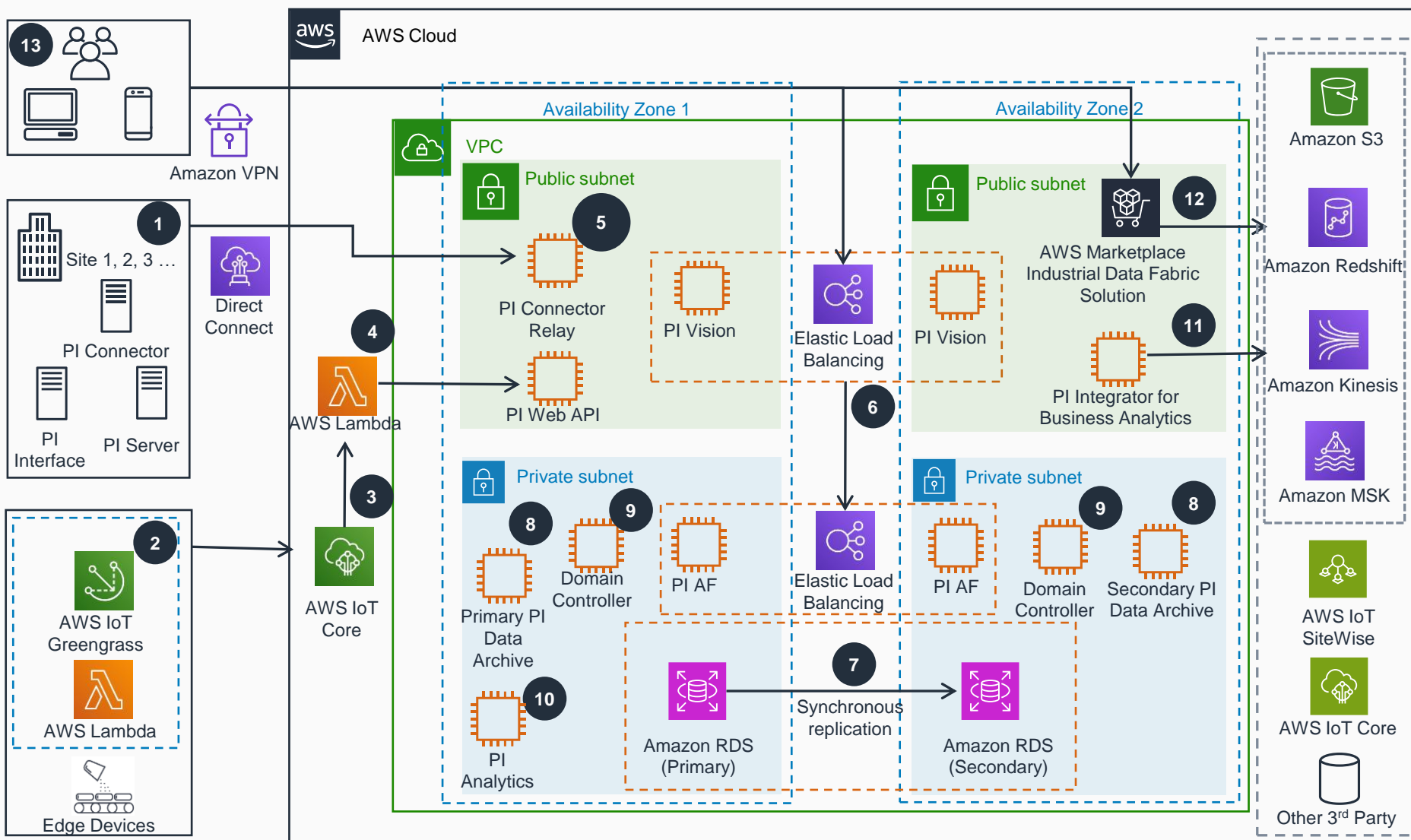
This architecture diagram illustrates how to effectively deploy a highly available Aveva PI System on AWS and extract data into AWS services. It shows the key components and their interactions, providing an overview of the architecture's structure and functionality.



- 1 Connect PI System from individual sites to the roll-up PI System on AWS using PI Interfaces and PI Connectors. Establish connectivity through **AWS Direct Connect** or AWS Site-to-Site VPN.
- 2 Ingest data from edge devices that communicate via Modbus, OPC UA, or MQTT into **AWS IoT Greengrass**. Process the data locally using **AWS Lambda** functions running on Greengrass.
- 3 Send data from edge devices to **AWS IoT Core** in MQTT format through **AWS IoT Greengrass**. Trigger an **AWS IoT Core** rule to invoke an **AWS Lambda** function, passing in the ingested data for processing.
- 4 Translate data from the MQTT message into Aveva Message Format (OMF) using a custom **AWS Lambda** function. Send the translated data to PI Web API, which posts it to the PI System.
- 5 Send on-premises PI System data to the PI Connector Relay deployed on **Amazon EC2**. The relay posts the data to the roll-up PI System hosted on AWS.
- 6 Direct PI System traffic from the public subnet through Elastic Load Balancing. Route traffic from PI Connector Relay, PI Web API, PI Vision, and PI Integrator for Business Analytics deployed on **Amazon EC2** to the PI Asset Framework (PI AF) in the private subnet.
- 7 Store metadata used by PI Vision and PI Asset Framework (PI AF) in a highly available **Amazon RDS** for SQL Server instance.
- 8 Receive data from the PI Connector Relay on both PI Collective servers — the Primary PI Data Archive and the Secondary PI Data Archive deployed on **Amazon EC2** — ensuring high availability for data ingestion.

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- 9 Use Microsoft Active Directory to provide Windows Integrated Security access across PI System components. Authenticate and authorize users through Active Directory for centralized identity management.
- 10 Connect PI Analytics to PI Asset Framework (PI AF) and PI Data Archives. Perform KPI calculations and Event Frame computations to derive operational insights from your PI System data.
- 11 Export asset data, event view data, and PI Event Frame data from PI System into AWS services — including **Amazon S3**, **Amazon Redshift**, **Amazon Kinesis**, and Amazon Managed Streaming for Apache Kafka (**Amazon MSK**) — using PI Integrator for Business Analytics.
- 12 Alternatively, use the AWS Industrial Data Fabric solution, supported by ISV partners, to ingest PI System data into a broader set of AWS services and third-party platforms such as Snowflake, Databricks, or other applications.
- 13 Access the roll-up PI System through PI Vision or PI Integrator for Business Analytics using a web browser or mobile device. **Elastic Load Balancer** distributes traffic across PI Vision application nodes for high availability.

