aws elemental

# Release notes

## AWS Elemental Live and Statmux version 2.27 GA and AWS Elemental Conductor Live version 3.27 GA

AWS Elemental
1320 SW Broadway
Portland, Oregon, 97201

+1 503 222 3212
www.elemental.com

# Contents

# ABOUT THE SUITE OF LIVE PRODUCTS

## AWS Elemental Live

AWS Elemental Live is a massively parallel video processing system that provides content distributors with video and audio encoding for live streaming to new media platforms. With unprecedented density and support for adaptive bit rate protocols, HTML5, and multiple HD streams, AWS Elemental Live delivers the high-quality, high-efficiency performance required for current and future live streaming applications for any device. An intuitive web-based interface simplifies workflow, providing real-time controls and an easy-to-manage, seamless user experience.

AWS Elemental Live can be deployed in stand-alone mode or as part of a cluster controlled by Conductor Live.

## AWS Elemental Statmux

AWS Elemental Statmux is an extension of the AWS Elemental Live product line that lets you produced MPTS outputs. Statmux functionality works only in a Conductor Live cluster. The Live nodes create the programs for the MPTS, and Conductor Live manages the MPTS itself.

AWS Elemental Statmux requires that each Live node has a license for the Statmux rate control addon.

## AWS Elemental Conductor Live

AWS Elemental Conductor Live is a management system for controlling AWS Elemental Live and AWS Elemental Statmux.

### Node-based redundancy

- AWS Elemental Conductor Live provides redundancy for AWS Elemental Live and AWS Elemental Statmux node (worker node) redundancy. Worker nodes (AWS Elemental Live and AWS Elemental Statmux) controlled by AWS Elemental Conductor Live can be set up so that if one node fails, a backup node takes over the activity of the failed node. A backup node is a passive reserve licensed worker node.
- AWS Elemental Conductor Live provides Conductor node redundancy: the cluster can be set up with one primary and one backup Conductor node, so that if the primary were to fail, the backup would take over management of the worker nodes. Conductor node failure and failover have no impact on work currently in progress on the worker nodes.

### Profiles and parameters

- AWS Elemental Conductor Live requires profiles to create channels.
- AWS Elemental Conductor Live profiles support variables in the form of “channel parameters”. This feature allows profiles to be very flexible: where appropriate, the value of a field can be set to a profile parameter, instead of a hard value. When the profile is used to create the channel, profile parameter values are defined by the operator. This is commonly used for input source and destination values.
- AWS Elemental Conductor Live profile fields with blue treatment support channel parameters. Profile validation requires an operator to define validation values for the user configured profile parameters in order to save the profiles. The validation values are not used when creating a channel with the profile. The operator must specify values for the user configured channel parameters.

- A complete list of profile fields that support channel parameters is located in the AWS Elemental user documentation.
- Once profiles are created, they cannot be modified. Instead, a profile can be duplicated and modified, then saved with a new name.

#### Channel tasks – Bulk actions

- AWS Elemental Conductor Live supports the ability to start, stop, or delete several channels at the same time, and to change the profile of several channels at the same time.

#### MPTS management

- AWS Elemental Conductor Live provides MPTS creation and channel participation via the AWS Elemental Conductor Live interface.
- The MPTS created by AWS Elemental Conductor Live can reside on an AWS Elemental Live or an AWS Elemental Statmux node.

#### Status management

- Alerts and messages that occur on worker nodes are sent to AWS Elemental Conductor Live and displayed in the interface.
- AWS Elemental Conductor Live can be configured to send a notification to an email address or web callback URL when an alert occurs.
- Operators can provide operational notes from the Status notifications page.

# Types of releases

Releases within a major version are numbered starting with 0. For example, a major series might have minor versions from 2.23.0 to 2.23.5. Each release in the series always includes fixes, and usually includes features.

## Downloading the software

If you have an active AWS Elemental agreement, you can download releases from the AWS Appliances & Software services console.

## Currently installed versions

You can find the currently installed version of AWS Elemental Live software at the bottom of the user interface or by typing the following at the command line:

```
cat /opt/elemental_se/versions.txt
```

Note that some features may be available only in certain models of AWS Elemental Live. For example, HEVC encoding is available only on licensed encoders.

# ESSENTIAL NOTES

## Support for the migration lifeboat script

If you have not yet migrated to RHEL 9, note the following.

When you migrate your AWS Elemental software to a version that runs on RHEL 9, you must use the AWS Elemental lifeboat script to create a backup of the data on the node. The usage for this script is described in the *AWS Elemental Live Migration Guide* and the *AWS Conductor Live Migration Guide*.

Version x.27.0 and above are not supported with the lifeboat script and you will not be able to migrate your existing data. To use the lifeboat script and save your existing data, you must first migrate using versions x.26.x. You can then upgrade to x.27.x.

## Changes to 2110 receiver group inputs

### Stream patching – make before break

Starting with Elemental Live 2.27.0, the default mode for stream patching is make-before-break mode. Previously, the only mode that was supported was break-before-make mode.

If you have events that use 2110 receiver group inputs that you created prior to version 2.27.0, you must configure the event for the desired mode. For more information, see "NMOS Next Generation – Receiver patching with two modes" on page 10.

### Shadow inputs

Starting with Elemental Live 2.27.0, shadow inputs are required with 2110 receiver group inputs.

If you have events that use 2110 receiver group inputs that you created prior to version 2.27.0, you must modify those input to enable shadow inputs. For more information, see NMOS inputs next generation – 2110 receiver groups on page 10.

# NEW FEATURES IN 2.27

## New in version 2.27.5

### User Interface

A new option has been added to specify the DVB subtitle type, allowing users to choose between "normal" and "hearing impaired" labels for DVB subtitle tracks.

### Outputs, HLS

Program Date Time (PDT) tags have been added to I-Frame playlists for HLS specification compliance.

## New in version 2.27.4

### CMAF Ingest Outputs

CMAF Ingest Outputs now require explicit framerates (numerator/denominator) configured for H264 outputs. Previously, "Initialize from source" was allowed.

#### User Interface

Added EMPv2 settings section to CMAF Ingest group settings when a Media Package v2 endpoint is configured.

Added MediaPackage v2 destination settings fields (HLS auto-select, HLS default, audio rendition sets, audio group ID)

### Updated Video Engine

Updated Video Engine with general improvements to AVC and HEVC encoded video quality.

## New in version 2.27.3

### Security updates

Various updates have been applied to address potential security issues.

### Maximum audio output encodes

There is a change in the maximum number of supported audio output encodes allowed in one output group. The maximum has increased from 16 to 32 encodes. (GLV-6306)

### SMPTE 2110 with NMOS – multiple bitrates

Elemental Live now supports multiple bitrates when with SMPTE 2110 inputs with different bitrates, in the same event. (GLV-6311)

# New in version 2.27.2

## Color space conversion - support for 3D LUTS files

You can now configure an event to use a 3D LUT file for color correction, in an event that is set up for color conversion. You provide a list of 3D LUT files. Each 3D LUT file contains color mapping information for a specific source/output combination. For example, one file contains information for converting Rec. 709 to HDR10.

### Using 3D LUT files

These rules apply to using 3D LUT files:

- **Sourcing of 3D LUT files.** You must provide the 3D LUT files. Elemental Live doesn't have built-in files.
- **One file for each combination.** You must provide a file for each source/output combination. For example, a file for converting Rec. 601 to HDR10.
- **Maximum 8 files.** You can provide a maximum of 8 files for each channel. This means that Elemental Live supports up to 8 source/output conversion combinations.
- **Global application.** Elemental Live uses a specific file in all the outputs where that file applies. For example, if there is a file to convert Rec. 601 to HDR10, Elemental Live uses that file in every output that it applies to. You can't configure some outputs to use the standard mechanism for conversion.

### Contents of the 3D LUT files

The following rules apply to the contents of the files:

- **Format.** You must make sure that each 3D LUT file follows the .cube 3D LUT format.
- **Maximum one file per combination.** You can provide only one 3D LUT file for each combination. You can't configure some outputs to use a different 3D LUT file. When Elemental Live reads the list of 3D LUT files, it uses the first file that it finds for a source/output combination.
- **HDR10 luminance.** Elemental Live supports conversion of HDR10 content with a maximum luminance of 1000 nits to 4000 nits, but it only supports one maximum luminance. When Elemental Live reads the list of 3D LUT files, it finds the first file for each conversion from HDR10. Even if you one file for 1000 nits and one for 4000 nits (for example), Elemental Live uses only the first file it encounters. Therefore the following guidelines apply:

    - You should make sure that all the HDR10 content in all the inputs in one channel have the same maximum luminance. If a source has a different maximum luminance, Elemental Live will convert the content, but the outputs will have sub-optimal luminance.
    - In each 3D LUT file for converting from HDR10, make sure that the luminance handling is appropriate for the luminance of the source.

### To set up to use 3D LUTS files

1. Place the 3D LUTS files in a location accessible to Elemental Live:
    - In a location local to the Elemental Live appliance. For example, /data/assets/LUTS
    - On a remote server accessed via a mount point. For example, /data/mnt/assets/LUTS
    - In an Amazon S3 bucket. For example, ssl://company.test/DOC-EXAMPLE-BUCKET/LUTS
2. In the Elemental Live web interface, in the **Global Processors** section of the event, move the **Color Mapping** slider to ON.

3. Click **Add Color Map** to display a maximum of 8 lines. In each line, enter the following information:
   - The location of the 3D LUT file.
   - The input (source) color space that this file handles.
   - The output color space that this file handles.

   To set up a combination that works when converting to Dolby Vision 8.1, choose HDR10 as the output color space.
4. Then set up the inputs and the outputs in the usual way, as described in the AWS Elemental Live User Guide.

### Audio inputs – limits for SMPTE 2110 audio inputs

Previously, there was a limit of 16 audio channels with SMPTE ST 2110-30 or SMPTE ST 2110-31 input stream. Live now supports up to the limits defined in SMPTE 2110-30:2017 Table 2. (GLV-5504)

### Audio outputs – limit per event

The maximum number of audio output encodes in a single event has been increased from 20 to 32.

# New in version 2.27.0

### Dolby Digital Plus with Atmos - Decode

Elemental Live now supports decoding audio that is Dolby Digital Plus with Dolby Atmos (eAC3 Atmos). This means that you can set up an eAC3 Atmos input to eAC3 Atmos output in two ways: You can pass it through (as already supported) or you can re-encode it by selecting EAC3 ATMOS as the output codec. In this second case, you must have the Audio Decoder Package installed on the node.

Version 2.27.0 and later also uses newer Dolby Digital and Dolby Digital libraries, which results in general improvements.

### EBU-TT-D Captions

EBU-TT-D captions have a new metadata section, in order to conform to the standard. (GLV-2573) For example:

```
<metadata>
    <ebuttm:documentMetadata>
        <ebuttm:conformsToStandard>urn:ebu:tt:distribution:2018-
04</ebuttm:conformsToStandard>
        <ebuttm:documentOriginatingSystem>Elemental Media Engine(TM) Live 64-bit
v2.27.0.0</ebuttm:documentOriginatingSystem>
    </ebuttm:documentMetadata>
</metadata>
```

### ID3 segment tagging in HLS

HLS outgroup groups now support ID3 segment tagging. (GLV-4956)

### Installer – user authentication

The installer has been revised to include options that let you enable or disable user authentication. You can set up so that when either enabling or disabling, the installer doesn't present any authentication prompts. This change allows for hands-free installs.

- To install without enabling authentication, include the `--skip-auth` flag,
- To install so that authentication gets enabled, include both `--admin-login` and

`--admin-password`.

On an existing deployment, the possibilities are the following:

- To change the configuration without changing the current user authentication status, enter:
  `./configure --skip-auth`
- To enable or disable authentication on an existing deployment, enter:
  `./configure --config-auth`

  You will be prompted to enable or disable authentication.

Note that in earlier versions of the software, --skip-all skipped the user authentication prompts. Starting with version 2.27.0, --skip-all doesn't skip those prompts.

For help, go to the AWS Elemental Support Center, and read this Knowledge article or open a case.

(GLV-4468)

## Installer Port Restrictions

There is a change to the handling of ports when the firewall is enabled. The installation process now restricts ports 22, 80, and 443 to private subnets, by default. The default private subnets are 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16.

To customize the CIDR ranges for port restrictions, use the --cidrs option in the install command, or perform an interactive install. To use the default configuration, use the --skip-all or --skip-cidrs options.

For help, go to the AWS Elemental Support Center, and read this Knowledge article or open a case.

(GLV-4464)

## Licenses

The JPEG XS license is now restricted to 75 events running at the same time. Contact AWS Elemental Customer Support if you run into issues with this restriction. (GLV-4322)

## Logging

Video backend logging now includes improved detail about configuration of the color corrector, scaler, and encodes. (GLV-5129)

## NMOS inputs next generation – 2110 receiver groups

### NMOS Next Generation – 2110 Receiver Groups

Elemental Live now supports 2110 receiver groups as a way of handling NMOS-controlled 2110 inputs. You create a 2110 receiver group and add 2110 streams to it. You then create (or modify) an event to use a 2110 receiver group. You do this instead of creating 2110 inputs directly in the event.

The 2110 receiver groups are independent of the event. You can modify an event to detach a 2110 receiver group. The 2110 receiver group continues to exist.

You can also modify a 2110 receiver group without modifying the event. You can modify the 2110 receiver group when the associated event (if any) is running, which lets you perform NMOS receiver patching (as described below). You can also modify an event to detach a 2110 receiver group. The 2110 receiver group continues to exist.

To set up 2110 receiver groups on the Live web interface:

1. In the main menu, choose **Settings** then **Input Devices**. Choose **Create 2110 Receiver Group**.
2. In the **SMPTE 2110 Receiver Groups** section, in the **NMOS Label** field, enter a name for the 2110 receiver group.

3. Complete the **Video Receiver** row to configure the video stream: complete the **NMOS Label** field, **Interface** field (for example, ETH6), and the optional **Secondary Interface** field.
4. To add audio or ancillary streams, click **Add Audio SDP** or **Add Ancillary SDP**, and complete each **Label** row that appears.
5. Choose **Save 2110 Receiver Groups**.

To use the 2110 receiver group in a Live event that you are creating or editing:

- Click **Add Input**. In the selector field, choose the 2110 receiver group that you created.
- Click **Add Input** again and choose the same 2110 receiver group. Under the **Input,** click **Advanced,** and turn on **NMOS Patching Pair** for both of the 2110 receiver group inputs. Each 2110 receiver group input needs this additional patching pair input. (GLV-3754)

### NMOS Next Generation – Receiver patching with two modes

Prior to version 2.27.0, Elemental Live supported only break-before-make receiver patching. Starting with version 2.27.0, Elemental Live also supports make-before-break.

- Break-before-make (BBM) means that Elemental Live will tear down the 2110 input before starting to build up the new input processing. The benefit of this mode is that it doesn't require extra network bandwidth when patching. The drawback is that streams are patched one by one, which results in short periods of video fill and audio silence.

  With version 2.27.0, there is one change in the implementation: you must create a shadow input for each 2110 receiver group input. Elemental Live will tear down the first 2110 input, then start to build up the shadow 2110 input. For more information about shadow inputs, see the next topic.
- Make-before-break (MBB) means that the second Elemental Live input must be built up and ready-to-go before seamlessly switching from the original input to the new input. This mode therefore requires double the network bandwidth for the time when the second input is being prepared.

To configure for BBM or MBB:

1. In the main menu, choose **Settings** then **NMOS**.
2. In **Enable NMOS Access**, choose **Yes**. More fields appear.
3. In the **Use make-before-break for NMOS Receiver patching** field, choose the correct value:
   - **Yes**: To use MBB. This is the default.
   - **No**: To use BBM.

(GLV-4965)

### Shadow inputs are required for 2110 receiver group inputs

As described in more detail above, in order to use 2110 receiver group inputs,, you must create a shadow input for that input. You must set up in this way for both Break-before-make (BBM) and Make-before-break (MBB).

To set up to use a shadow input in a Live event that you are creating or editing:

1. Go to the input that uses a 2110 receiver group.
2. Find the **NMOS Patching Pair** field just above the **Add Failover Condition** button.
3. Set **NMOS Patching Pair** field to **Yes**.

(GLV-4730)

### Web interface and API support for 2110 receiver groups

2110 receiver groups are exposed in the NMOS Node APIs. NMOS support, including 2110 receiver groups, can be disabled using the NMOS settings API and using the web interface. (GLV-3736)

## TLS

TLS handling has been improved. (GLV-4695)

The cryptographic security for SSL/TLS connections has been strengthened. (GLV-3389)

# RESOLVED ISSUES AND NEWLY IDENTIFIED ISSUES IN 2.27.5

## AWS Elemental Live 2.27.5 GA

### Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-7202 | Captions, SCTE-35 | Previously, SCTE-35 messages with a non-zero pts_adjustment field were not being output when processed through the ESAM pipeline. This issue has been fixed. |
| GLV-7194 | Event processing | Previously, editing an event with an audio selector group could cause the preview to break. This issue has been fixed. |
| GLV-6577 | Outputs, encoding | Previously, the field_based_flag value was not being set correctly for AVC interlaced encodes. This has been corrected for improved spec compliance. |
| GLV-6798 | Platform, database | Previously, the sessions database table could encounter limitations with very high usage over time. The primary key has been migrated to support larger values. |
| GLV-7083 | Platform, imports | Previously, importing event XML files from older software versions could fail. An automatic upgrade process has been added to handle older XML formats during import. |
| P391933808 | Outputs, CMAF | Previously, CMAF outputs with Dolby content could fail validation unnecessarily. Validation has been updated to allow CMAF outputs past Dolby validation where appropriate. |
| P375412968 | Outputs, CMAF | Previously, MP4/CMAF outputs with EC-3 or AC-3 audio could have an incorrect track count in the sample description. This issue has been fixed. |
| P381199744 | Captions, SCTE-35 | Previously, when ESAM returned late for immediate splice insert or time signal events, the start time was not adjusted. Changes have been made to move the start time forward in this situation. |
| V2041197194 | Event processing | Previously, stopping an event could result in a gradual increase in memory usage over time. This issue has been fixed. |
| V1994113448 | Event processing | Previously, unexpired SCTE-35 network end/start messages could be processed incorrectly. This issue has been fixed. |

# AWS Elemental Live 2.27.5 GA

## Resolved issues (Cont'd)

| Key | Topic | Description |
|---|---|---|
| EMM-4248 | Event processing | In certain situations, H.264 auPPS and auSPS field parsing could cause event processing errors. This issue has been fixed. |
| 828de255b9c | Inputs, SMPTE 2110 | Previously, SMPTE 2110 setup could fail when hyperthreading was disabled. This has been fixed to handle the configuration more gracefully. |

## Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Statmux 2.27.5 GA

## Resolved issues

There are no newly resolved issues with this release.

## Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Conductor Live 3.27.5 GA

## Resolved issues

There are no newly resolved issues with this release.

## Newly identified issues

There are no newly identified issues with this release.

# RESOLVED ISSUES AND NEWLY IDENTIFIED ISSUES IN 2.27.4

## AWS Elemental Live 2.27.4 GA

### Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-7161 | Platform, Downgrades | Previously, license files could be lost during software downgrades. Changes have been made to preserve license files from existing installations when performing downgrades. |
| GLV-2849 | Inputs, RTMP | SRT output could block indefinitely in some instances. Send timeout and buffer size configuration has been added for reliable transport stream SRT senders to prevent blocking. |
| GLV-7090 | Outputs, SRT | SRT output could block indefinitely in some instances. Send timeout and buffer size configuration has been added for reliable transport stream SRT senders to prevent blocking. |
| GLV-7001 | Outputs, CMAF Ingest | Previously, CMAF Ingest output groups required epoch locking when using custom epoch configuration. This restriction has been removed. |
| GLV-7116 | Outputs, CMAF Ingest | The CMAF Ingest destinations have been updated for better path handling. |
| GLV-6993 | Event processing | Previously, input pipeline preparation could fail to reset properly when cancelled for perpetually decoded inputs. This issue has been fixed. |
| GLV-7132 | Platform, NMOS | Previously, there was an issue with null sender IDs in NMOS implementation. This issue has been resolved. |
| GLV-5513 | Event processing | A timeout has been added to prevent indefinite blocking during event processing operations. |
| GLV-7074 | Event processing | Frame sync black fill behavior has been improved to differentiate between active and ended input states. |
| GLV-7081 | SCTE-35 | Previously, SCTE-35 NotIndicated signals could cause HLS segment doubling. This issue has been fixed. |
| GLV-3400 | SCTE-35 | Excessive "Does not contain an avail" messages could be generated in certain workflows. Message frequency has been limited to reduce log noise. |

# AWS Elemental Live 2.27.4 GA

## Resolved issues (Cont'd)

| Key | Topic | Description |
|---|---|---|
| GLV-7109 | Captions, CMAF Ingest | Previously, embedded captions could interfere with MediaPackage v2/CMAF frame capture functionality. This issue has been resolved. |
| EMM-4062 | Outputs, CMAF Ingest | CMAF Ingest segment numbers could be incorrect after event stop/start operations. This issue has been fixed. |
| LIVESEC-12 | API | Stricter validations on /devices/{device_id}/preview endpoint now restrict image locations to the /public/images/preview directory and filenames to alphanumeric characters. |
| GLV-7083 | NMOS | Previously, importing an XML with a 2110 receiver group input without a corresponding shadow input required manual correction. The import process now automatically adds the shadow input. |
| GLV-7185 | Platform | We continue to take in latest Redhat security patches to keep our appliance secure in a accordance with the shared security model |

## Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Statmux 2.27.4 GA

## Resolved issues

There are no newly resolved issues with this release.

## Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Conductor Live 3.27.4 GA

## Resolved issues

There are no newly resolved issues with this release.

## Newly identified issues

There are no newly identified issues with this release.

# RESOLVED ISSUES AND NEWLY IDENTIFIED ISSUES IN 2.27.3

## AWS Elemental Live 2.27.3 GA

### Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-6571 | API | The playlist API endpoint (used to create a playlist of inputs to ingest) can sometimes result in a 500 error code. This issue has been fixed. |
| GLV-6342 | Data delivery | Previously, large file transfers to AWS S3 could fail because the transfer timed out. The timeout has been increased. |
| GLV-6662 | Data delivery | Previously, data transfers over slower connections could fail. This issue has been fixed. |
| GLV-6947 | Deleting events | Previously, archived events sometimes didn't get deleted on the expected date. This issue has been fixed. |
| GLV-6363 | Input preview | Sometimes input preview didn't appear when it was enabled. This issue has been fixed. |
| GLV-6944 | Inputs, SMPTE 2110 with NMOS | There was an issue with patching of a SMPTE 2110 input that uses NMOS. If user authentication was enabled, the patch didn't occur. This issue has been fixed. |
| GLV-6714 | Outputs, RTMP | There was an issue when creating an RTMP output group by duplicating an event or using a Conductor Live profile. Some settings didn't get copied over. This issue has been fixed. |
| GLV-5843 | Performance | The resource allocation logic on Elemental Live, Elemental Statmux, and Conductor Live has been raised to prevent event crashes. |
| GLV-6383 | Platform, downgrades | Previously, a downgrade to Elemental Live 2.27.0 might fail. This issue has been fixed. |
| GLV-6350 | Platform, upgrades | There was an issue with events not automatically restarting after upgrading the software. This issue has been fixed. |

### Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Statmux 2.27.3 GA

## Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-5843 | Performance | The resource allocation logic on Elemental Live, Elemental Statmux, and Conductor Live has been raised to prevent event crashes. |

## Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Conductor Live 3.27.3 GA

## Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-5754 | Deleting profiles | Previously, it was not possible to delete Conductor Live profiles that used SMPTE 2110 inputs This issue has been fixed. |
| GLV-6619 | Inputs, SMPTE 2110 with NMOS | There was a problem with updating Conductor Live profiles on SMPTE 2110 inputs that use NMOS. The problem resulted in an error in the web interface. This issue has been fixed. |
| GLV-6714 | Outputs, RTMP | There was an issue when creating an RTMP output group by duplicating an event or using a Conductor Live profile. Some settings didn’t get copied over. This issue has been fixed. |
| GLV-5843 | Performance | The resource allocation logic on Elemental Live, Elemental Statmux, and Conductor Live has been raised to prevent event crashes. |

## Newly identified issues

There are no newly identified issues with this release.

# RESOLVED ISSUES AND NEWLY IDENTIFIED ISSUES IN 2.27.2

## AWS Elemental Live 2.27.2 GA

### Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-2972 | Authentication | A recent change in advertently introduced the rule that if authentication was enabled, only users with the Admin role could download the XML from the web interface or using the API. This issue has been fixed so that any authenticated user can perform these actions. |
| GLV-5785 | Captions, EBU-TT and TTML | Previously, Live might omit or skip some non-ASCII characters when encoding captions into TTML/EBU-TT format. This problem has been fixed. |
| GLV-5843 | Event crash | Previously, a node might crash when a lot of events were running. Changes have been made to prevent the crash in this situation. |
| GLV-4829 | Event crash | Previously, MXF archive output used in conjunction with WAV audio output could cause crashes. This problem has been fixed. |
| GLV-5881 | Inputs, Dolby | Previously, there was an issue with handling Dolby audio input. The issue forced the user to restart the event.<br>The issue has been fixed. In addition, a change has been made to reduce the number of log messages when problems like this one occur. |
| GLV-6069 | Inputs, SMPTE 2110 | ST 2110-30 output timing handling has been adjusted to be more resilient when faced with input timing disruptions. |
| GLV-5889 | Platform, downgrade | Previously, there was an issue that prevented a downgrade from 2.27.1 to 2.26.5. This issue has been fixed. |
| GLV-5432 | XML import | An issue has been corrected that prevented the import of a Live event XML file that included a SMPTE 2110 input. |

### Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Statmux 2.27.2 GA

## Resolved issues

There are no newly identified issues with this release.

## Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Conductor Live 3.27.2 GA

## Resolved issues

There are no newly identified issues with this release.

## Newly identified issues

There are no newly identified issues with this release.

# RESOLVED ISSUES AND NEWLY IDENTIFIED ISSUES IN 2.27.1

## AWS Elemental Live 2.27.1 GA

### Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-525 | Alerts, logs, and messages | Loudness log files will now be retained for 30 days (by default) before being deleted from the appliance. The retention period is configurable in the Settings > General tab, and cleanup can be disabled by setting to 0 days. |
| GLV-2606 | Backup files | TGF files will now be retained for 30 days (by default) before being deleted from the appliance. The retention period is configurable in the Settings > General tab, and cleanup can be disabled by setting to 0 days. |
| GLV-5696 | Captions, EBU-TT-D | In Live 2.27.0, the calculation of tts:lineHeight in EBU-TT-D captions outputs which was incorrect. This error caused the text to appear noticeably larger. This issue has been fixed. |
| GLV-5241 | HLS manifests | Fixed an issue where pausing and unpausing an output group could result in partial HLS parent manifests being written. |
| GLV-5816 | Inputs, SDI | In Live 2.27.0, the configuration of ancillary data (SCTE 35 messages) in an SDI input was reset when the channel was started. This caused any channel that was already running to stop ingesting ancillary data. This issue has been fixed. |
| GLV-5545 | Inputs, SMPTE 2110 | Fixed an issue where new NMOS events weren't being imported properly. |
| GLV-5677 | Inputs, SMPTE 2110 | Previously, the system status API didn't apply to 2110 inputs configured with NMOS receiver groups, or with SDI input groups. This meant that it wasn't possible to verify the status of these inputs. This issue has been fixed. |
| GLV-5764 | Inputs, SMPTE 2110 with NMOS | There was an issue when importing the XML for an event, when the event included configuration for a 2110 NMOS input. Elemental Live didn't handle the audio selectors correctly. This issue has been fixed. |
| GLV-3024 | Motion graphic overlays | Previously, Elemental Live might lose AV Sync if motion graphics overlays were enabled and many input switches happened. Additionally, there was a memory leak with MOV motion graphics. Both of these issues have been fixed. |
| GLV-5382 | Motion graphic overlays | Fixed an issue where motion graphics insertion would stop on looping inputs after the first input switch. |

| Key | Topic | Description |
|---|---|---|
| GLV-5609 | Outputs, CMAF ingest | Previously Elemental Live was incorrectly validating against output name modifiers across different CMAF Ingest output groups. Now, Live enforce modifier name uniqueness only within each output group. |
| GLV-5383 | Outputs, SRT | Increased the send delay for SRT outputs to 4 seconds. Now, after a successful connection, Elemental Live attempts to send data for 4 seconds before timing out. |
| GLV-5610 | Outputs, SRT | The passphrase length for SRT outputs has been increased from 72 characters to 80 characters. |
| GLV-5257 | Video | Fixed an issue where Elemental Live was not always inserting RAI markers per specification. |
| GLV-5763 | Web interface | In Elemental Live 2.27.0, you couldn't save changes to settings in the Settings > General page. This issue has been fixed. |

### Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Statmux 2.27.1 GA

### Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-5763 | Web interface | In Elemental Statmux 2.27.0, you couldn't save changes to settings in the Settings > General page. This issue has been fixed. |

### Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Conductor Live 3.27.1 GA

### Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-4997 | Alerts, logs, and messages | Fixed an issue where some alerts were not clearing properly after channels were stopped or restarted. |

### Newly identified issues

There are no newly identified issues with this release.

# RESOLVED ISSUES AND NEWLY IDENTIFIED ISSUES IN 2.27.0

# AWS Elemental Live 2.27.0 GA

## Support for the migration lifeboat script

If you have not yet migrated to RHEL 9, note the following.

When you migrate your AWS Elemental software to a version that runs on RHEL 9, you must use the AWS Elemental lifeboat script to create a backup of the data on the node. The usage for this script is described in the *AWS Elemental Live Migration Guide*.

Version 2.27.0 and above are not supported with the lifeboat script and you will not be able to migrate your existing data. To use the lifeboat script and save your existing data, you must first migrate using version 2.26.x. You can then upgrade to 2.27.x.

## Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-4662 | Alerts and logging | Improved logging of SCTE 35 handling, to include a unique ID. This ID makes it easier to trace processing of customer SCTE 35 messages through the transcoding pipeline. |
| GLV-5070 | Alerts and logging | There is improved logging during the assignment of output PIDs to used input streams. |
| GLV-4669 | Alerts and logs | Logs for NMOS and motion graphics could grow indefinitely. There is now a limit to the number and size of these logs. |
| GLV-4749 | Alerts and logs | Fixed an issue where the logs in /opt/elemental_se/web/log on Conductor Live were not correctly rotated. |
| GLV-5097 | Alerts and logs | Useless messages have been removed from the logs. |
| GLV-5262 | Alerts and logs | SVQ is defined by the encoder favoring speed over quality. Diagnostic logging has been improved when SVQ occurs. |
| GLV-5367 | Alerts and logs | Fixed an issue where missing IDs on deferred caption stores could cause spamming in logs. |
| GLV-4847 | Audio | Fixed an issue where normalized mono audio can begin to slowly decay towards silence. |
| GLV-3763 | Audio-only outputs | There was an issue with HLS audio-only outputs whereby the media segments were faster than real time. This issue has been fixed. |
| GLV-2571 | Captions, EBU-TT-D | Previously, the data included in EBU-TT-D captions outputs had unreferenced (and unnecessary) style and region elements. This data has been removed. |

| Key | Topic | Description |
|---|---|---|
| GLV-2572 | Captions, EBU-TT-D | Previously, the data included in EBU-TT-D captions outputs had the style elements in both the body and paragraph sections. Now, the tts:fontSize and tts:lineHeight appear only in the paragraph <p> sections. |
| GLV-5404 | Epoch locking | Very rarely, epoch locked events could crash. The underlying issue has been fixed. |
| GLV-5172 | Inputs, RTP | There was an issue when a Live event with an RTP FEC input is erroneously sent streams from two different sources at the same time. The log might get filled with misleading messages about a change in the FEC protection parameters. This issue has been fixed. |
| GLV-3705 | Motion graphics | Fixed an issue where motion graphics might render with an incorrect hue. |
| GLV-5039 | NMOS | When upgrading from Live 2.26.1 to Live 2.26.4 or later, NMOS could stop working. This issue been fixed. |
| GLV-4280 | NMOS 2110 | Live events with NMOS-controlled 2110 outputs sometimes would not appear in the NMOS network. This issue has been fixed. |
| GLV-4454 | NMOS 2110 | Fixed an issue whereby changing the secondary interface on a 2110 Receiver Group would not update the NMOS receiver. |
| GLV-4656 | Output listening | There was an issue with Live's handling of output when output listening is enabled. The output bandwidth was unexpectedly high. This issue has been fixed. |
| GLV-4856 | Outputs, CMAF Ingest | Fixed an issue in CMAF Ingest outputs where video and audio segments didn't align when video had non-integer framerate |
| GLV-5241 | Outputs, HLS | Fixed an issue where pausing and unpausing an output group could result in partial HLS parent manifests being written. |
| GLV-5301 | Outputs, SRT | There was an issue where SRT output connection failures resulted in the encoder favoring speed over quality. This SVQ resulted in alarms. The issue has been resolved. |
| GLV-5312 | Outputs, Zixi | Fixed an issue where secondary Zixi outputs failed to initialize correctly. |
| GLV-5334 | Platform | The operating system has been upgraded from RHEL 9.2 to RHEL 9.4 |
| GLV-5175 | PTS | There was an issue where the PTS adjustment has been set to 0. Elemental Live still performed the adjustment on some messages. This issue has been fixed. |
| GLV-4729 | SCTE 35 | Fixed a case where long Network Start blackouts didn't work properly. |
| GLV-4850 | SCTE 35 | Previously, some SCTE 104 messages in a 2110 input might not get successfully converted. This issue has been fixed. |
| GLV-5116 | SCTE 35 | There was an issue when an event includes SMPTE 2110 input and the SMPTE 2110 ancillary stream carries a SCTE 104 message with the duration_extension_frames field is non-zero. The duration calculated for the number of frames was incorrect. This issue has been fixed. |

| Key | Topic | Description |
|---|---|---|
| GLV-5370 | SCTE 35 | Fixed an issue where resynching could cause empty SCTE 35 segments in CMAF Ingest outputs. |
| GLV-5226 | SDI | Fixed an issue with the SDI router. |

### Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Statmux 2.27.0 GA

### Support for the migration lifeboat script

If you have not yet migrated to RHEL 9, note the following.

When you migrate your AWS Elemental software to a version that runs on RHEL 9, you must use the AWS Elemental lifeboat script to create a backup of the data on the node. The usage for this script is described in the *AWS Conductor Live Migration Guide*.

Version 3.27.0 and above are not supported with the lifeboat script and you will not be able to migrate your existing data. To use the lifeboat script and save your existing data, you must first migrate using versions 3.26.x. You can then upgrade to 3.27.x.

### Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-5070 | Alerts and logging | There is improved logging during the assignment of output PIDs to used input streams. |
| GLV-5333 | Virtual IPs | Fixed an issue where Statmux crashed when using virtual source IPs. |

### Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Conductor Live 3.27.0 GA

### Resolved issues

| Key | Topic | Description |
|---|---|---|
| GLV-3720 | Schedule | Fixed an issue where the user couldn't enable schedules in Conductor Live |
| GLV-5385 | Upgrading | Sometimes a channel would not restart after an upgrade of the Conductor node. This issue has been fixed. |

## Newly identified issues

There are no newly identified issues with this release.