

## Release notes

AWS Elemental Live and Statmux version 2.26 GA and  
AWS Elemental Conductor Live version 3.26 GA



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# ABOUT THE SUITE OF LIVE PRODUCTS

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## 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 produce 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 add-on.

## 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.

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# ESSENTIAL NOTES

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## AWS Elemental Statmux software

AWS Elemental Statmux version 2.26.2 is now available. You can start to plan migration of an AWS Elemental Conductor cluster that includes Statmux, to upgrade the cluster from the 2.25/3.25 versions that run on RHEL 7 or Centos 7, to the 2.26/3.26 version that run on RHEL 9.

For guidance in planning your migration, contact AWS Elemental Customer Support.

## Identifying follow-up action for appliances

In previous revisions of these 3.26.1 and 2.26.1 release notes, we provided information about identifying your AWS Elemental Live appliance SKUs, so that you could take action if you had appliances in a specific category of SKUs.

This information related to recommendations about converting your appliance from software RAID to hardware RAID. This information no longer applies, so we have removed that information in revision 4 and later of the Release Notes.

The new recommendation is in the following section.

## Recommendation for converting from software RAID to hardware RAID

In previous revisions of these Release Notes for version 2.26 and 3.26, we recommended that you convert from software to hardware RAID. We made this recommendation because of a redundancy issue with software RAID. We fixed the issue by releasing kickstart version 5.9.27 (as described below).

Given these fixes, our new advice is that conversion from software RAID to hardware RAID is optional. If you do want to convert to hardware RAID, we recommend that you perform the conversion after you've migrated your system to version 2.26.1 (or higher) of the AWS Elemental Live software.

For information about the Migration guides for version 3.26 and 2.26, see page 7.

For detailed instructions about converting to hardware RAID, see the KBA with the title *How to reconfigure an appliance from software RAID to hardware RAID* in the [AWS Elemental Support Center](#).

## Issue with redundancy on some software RAIDs

There was a problem with some appliances that provide drive redundancy through software RAID (rather than through hardware RAID). The RAID configurations of affected appliances didn't provide redundancy in the event of primary drive failure.

### Remediation plans

When we first released AWS Elemental Live 2.26.1, we advised that we would have a fix to this problem in AWS Elemental Live 2.26.2.

We are now announcing that the fix is actually available immediately, by using an updated version of the RHEL9 kickstart.

## Your action

- If you haven't downloaded AWS Elemental Live 2.26.1 and the accompanying kickstart, you can do so now. Kickstart versions 5.9.27 and later fix the problem.
- If you have downloaded AWS Elemental Live 2.26.1, you can still use that version of the AWS Elemental Live software. But first, download the kickstart that is labelled ISO image 5.9.27.

## Required reading

If you have not upgraded your AWS Elemental Live software since several versions, you must read the Release Notes for the versions you missed.

Specifically, you must read the essential notes in those Release Notes. You can't just read the essential notes in the most recent Release Notes because with each major revision (for example, from 2.23 to 2.24), the essential notes from the previous major revision are removed from the Release Notes.

## Migration guides for version 3.26 and 2.26

Read this information if you are upgrading from an earlier version of AWS Elemental software.

Version 2.26.0 runs on RHEL 9 and won't run on RHEL 7 or CentOS 7. Therefore, to use the new versions of the AWS Elemental software, you must install the new operating system as well as upgrade the software.

There are special migration guides to perform this upgrade:

- To upgrade to AWS Elemental Live 2.26 (or later), follow the instructions in the *AWS Elemental Live migration guide*.
- To upgrade a Conductor cluster to AWS Elemental Conductor 3.26 (or later) and AWS Elemental Live 2.26 (or later), follow the instructions in the *AWS Elemental Conductor Live migration guide*.

This migration guide doesn't apply to clusters that include AWS Elemental Statmux. For guidance in migrating these clusters, contact AWS Elemental Customer Support.

Don't follow the instructions in one of the upgrade guides. Those procedures won't work.

## Installing RHEL 9 on a SuperMicro chassis

You can't use a USB stick to perform a kickstart of RHEL 9 on a SuperMicro chassis.

You must perform the kickstart using the SuperMicro BMC IPMI.

In addition, when you connect to the virtual console to perform the kickstart, you must choose to use the Java remote console applet. You can't use the HTML remote console. This restriction applies only when you are kickstarting, not when you are performing other tasks.

# The Customer Extras RPM Repository

AWS Elemental maintains a Customer Extras RPM repository for use with RHEL 9. The repository contains third-party packages that some customers use with AWS Elemental software.

You can download the customer extras repository on the software downloads page in the AWS Elemental Support Center.

1. Go to the [AWS Elemental Support Center](#). In the left panel, choose Software downloads.
2. Download `customer_extras_rhel9.tgz` to your laptop, then move the file to the `/home/elemental/` directory of the AWS Elemental node.

3. Enter this command to create a directory:

```
mkdir customer_extras_rhel9
```

4. Untar the archive file to that directory:

```
tar -xzf customer_extras_rhel9.tgz -C customer_extras_rhel9
```

5. Change to the directory:

```
cd customer_extras_rhel9
```

6. Install the repo on the node:

```
sudo ./run.sh
```

7. To confirm that the Customer Extras repository was installed, enter:

```
dnf repolist
```

Make sure that a repository with the ID `customer-extras` appears in the list.

8. You can now install packages from that repository. Use the DNF software package manager with the following syntax:

```
sudo dnf install -y <package_name>
```



# Changes to features in version 2.26.0

## Changes to support for Python, Ruby, and scripts

Starting with AWS Elemental Live version 2.26.0, there are new versions for some libraries. The supported versions are installed with AWS Elemental Live 2.6.0. Make sure that you update scripts (including preprocessing and post-processing scripts) that you have created so that they are compliant with the new versions.

- Python version 3
- Ruby version 2.6.10.

## Change to support for HTTPS

Starting with version 2.26.0, HTTPS is enabled by default. (Previously, HTTP was enabled by default. You could enable HTTPS using the install script or configuration script.)

You can't disable HTTPS. But you can set up with both HTTP and HTTPS enabled:

- To enable HTTP when it is currently disabled, run the script with `--http`.
- To disable HTTP when it is currently enabled, run the script with `--https`.
- To retain the current protocol configuration (whatever that is), run the script without the option. (Note that this is a change in behavior. Previously, if you ran the script with no option, you disabled HTTPS.)

Take these steps:

- Review any scripts that you have created to make sure that you are happy with the new behavior, especially with the fact that `--https` disables HTTP.
- Make sure that users or applications use a secure connection and trusted certificates to communicate with AWS Elemental Live. You must provide the trusted certificates.

Note that if you don't provide your own trusted certificates, you will see an error in your browser when you access the web interface. The error will indicate the site certificate is not valid.

## Changes to Elemental AWS licenses

Starting with AWS Elemental Live version 2.26.0, SMPTE 2110 outputs require an Elemental license. The add-on package is free of charge, but it must be installed on appliances where you want to run events that create SMPTE 2110 outputs.

To obtain the license, contact your AWS Elemental sales person. To deploy the license, see the section about configuring licenses in the [AWS Elemental Live Configuration Guide](#).

## Removed features

Starting with AWS Elemental Live 2.26.0 GA software release, the following features are no longer part of the software:

- Civolution watermarking
- DTS Express encoding, which means that you can no longer choose DTS as the codec for video outputs.
- Flash motion graphics

If you obtain an appliance that already has version 2.26.0 or later installed, or if you install version 2.26.0 or later on qualified hardware (as a fresh install), these features are not part of the software.

If you migrate a node to version 2.26.0 or later, the migration procedure includes a step to remove fields related to removed features from the event XML. You don't have to manually remove these fields.

## Impact of Mellanox driver changes

The following information applies if you implement SMPTE 2110 inputs or outputs.

RHEL 9 works only with versions 5.8 and higher of the Mellanox driver. As a result, the AWS Elemental Live installer for versions 2.26.0 and higher installs this new version of the Mellanox driver.

This version of the Mellanox driver isn't compatible with CIFS.

If you have an appliance that includes a Mellanox NIC, and you have been using CIFS to mount remote file shares, you must decide which feature you want to use:

- You can continue to use Mellanox. When you install, the install script will detect the Mellanox NIC and will automatically install the driver. In this case, you will no longer be able to use CIFS.
- You can postpone installation of the new Mellanox driver. This option is useful, for example, if you have an appliance with a Mellanox NIC that you aren't yet ready to use in your workflows. You can continue to use CIFS until you need to use the Mellanox NIC. When you install, include the `--skip-mellanox` option in order to skip driver detection. The installer won't install the new Mellanox driver.

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# NEW FEATURES IN VERSION 2.26

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## New in version 2.26.1

There are no new features in this version.

## New in version 2.26.2

### AWS Elemental Statmux

AWS Elemental Statmux version 2.26.2 is now available. You can start to plan migration of an AWS Elemental Conductor cluster that includes Statmux, to upgrade the cluster from the 2.25/3.25 versions that run on RHEL 7 or Centos 7, to the 2.26/3.26 version that run on RHEL 9.

For guidance in planning your migration, contact AWS Elemental Customer Support.

### Timecodes

AWS Elemental Live now includes a Program-Date-Time-Clock field. This field lets you set the PDT clock to System Clock, in order to automatically resynchronize PDT to the wall clock, when PDT drifts.

The default value for this field is "Initialize From Output Timecode", which means that there is no automatic resynchronization of PDT.

### Improved density on AWS Elemental Live 98x appliances

This version of AWS Elemental Live includes density improvements in SDI UHD inputs on AWS Elemental Live 98x appliances.

### Video quality improvements

This version of AWS Elemental Live introduces core improvements to video quality in HEVC outputs, specifically in the handling of dark scenes and moving objects.

### Tiled media

AWS Elemental Live now supports the tiled media feature.

# RESOLVED ISSUES AND NEWLY IDENTIFIED ISSUES IN 2.26.2

## AWS Elemental Live 2.26.2 GA

### Resolved issues

Key	Topic	Description
SOCK-38878	Audio output	Fixed an issue where the initial audio gain was not being set correctly when the event starts.
GLV-829	Captions	Fixed an issue whereby captions weren't included in the output in an event with hot backup inputs.
GLV-715	Captions, input	Previously, in very specific use cases, AWS Elemental Live failed to extract SMPTE 2038 Teletext data from the input because the decoder didn't read the data correctly. This issue has been fixed.
GLV-1448	Captions, output	There was an issue with EBU-TT-D captions. If the caption didn't have a specified alignment with its text region, AWS Elemental Live didn't choose the best default alignment. AWS Elemental Live now right-aligns the captions in the text region.
GLV-3388	Inputs, SMPTE 2110	There was an issue when a Live event is configured to use a SMPTE 2110 input with SMPTE 2022-7 and embedded timecodes. If one of the ancillary streams (either primary or secondary) that carries the timecode ancillary packets drops, the event might fail to resync timecodes. This issue has been fixed.
GLV-2800	Inputs, SMPTE 2110	There was an issue with SMPTE 2110 inputs that have an ancillary stream that contains timecodes. Sometime, the timecodes were being parsed incorrectly. This issue has been fixed.
GLV-1834	Outputs, in transport steams	There was an issue whereby SDTs in transport streams were always labeled as stream type of 1, regardless of content. This issue has been fixed.
GLV-2114	Platform	A firmware issue has been fixed.
GLV-3314	REST API	There was an issue with the /api/devices/preview endpoint returning 500 errors. This issue has been fixed.
GLV-3452	SCTE 35	The encoder now performs segment drift correction on SCTE 35 boundaries.
GLV-2553	SCTE 35	There was an issue with using ESAM POIS server to process SCTE 35 messages. Sometimes, if frames were dropped, the splice preroll could get set to a negative number. This issue has been fixed.

Key	Topic	Description
GLV-2414	SCTE 35	Previously, SCTE 35 messages weren't detected if the PID wasn't present in an input when the channel starts. This issue has been fixed.

## Newly identified issues

Key	Topic	Description
GLV-3408	Output captions	There is an issue with the following event configuration: Two (or more) HLS output groups that both include DVB-Sub input captions and Web VTT output captions that using OCR. When the event starts, the event gets stuck in the pre-processing stage. This message appears: All Caption Target OCR Languages must match for a given caption selector. The workaround for this issue is to set up each HLS output group in a separate event.

# AWS Elemental Statmux 2.26.2 GA

## Resolved issues

Key	Topic	Description
GLV-2243	Passthrough programs	There was an issue on AWS Elemental Statmux, whereby audio-only passthrough programs could fail after 20 to 30 minutes. This problem has been fixed.

## Newly identified issues

There are no newly identified issues with this release.

# AWS Elemental Conductor Live 3.26.2 GA

## Resolved issues

Key	Topic	Description
GLV-2540	Web interface	There was an issue with the MPTS Perform tab. It was possibly to press a combination of keys and buttons that makes a different tab appear.
GLV-1104	Logging	There was an issue with continually duplicated entries the PSQL log when the user enables HA. This issue has been fixed.

## Newly identified issues

There are no newly identified issues with this release.

# RESOLVED ISSUES AND NEWLY IDENTIFIED ISSUES IN 2.26.1

## AWS Elemental Live 2.26.1 GA

### Resolved issues

Key	Topic	Description
GLV-2614	Inputs, SMPTE 2110	When an AWS Elemental Live event with SMPTE 2110 input had JPEG XS video, Live was incorrectly rejecting a valid JPEG XS license. This has been fixed.
GLV-1122	Installer	Previously, there was no error message when the user installed a GPU build on a CPU-only node. Now, the installer validates the system hardware matches the installer type.
GLV-2389	Licenses	There was an issue where the MOTD was not always accurately displaying correct license information. This has been fixed.
GLV-2773	Logging	Response times were not being printed in Apache SSL access logs. This issue has been resolved
GLV-1489	Output locking	There was an issue where output locking resync was off by 1 frame when the input is 50fps and the output is 25fps. This issue has been fixed
GLV-907	Outputs, HLS	Previously, Live didn't honor the baseurl setting for fMP4 HLS output init files. This issue has been fixed
GLV-2510	SCTE 35	We have added an environment variable, REPEAT_AVAIL_IN_NEST, that toggles to determine whether or not previously reported avails are repeated when a nested avail occurs.

### Newly identified issues

There are no newly identified issues with this release.

## AWS Elemental Conductor Live 3.26.1 GA

### Resolved issues

Key	Topic	Description
GLV-1859	User authentication	There was an issue with how Conductor Live handled user login attempts. The issue has been resolved.

Key	Topic	Description
GLV-2773	Logging	Response times were not being printed in Apache SSL access logs. This issue has been resolved

## Newly identified issues

There are no newly identified issues with this release.