aws elemental

RELEASE NOTES

AWS ELEMENTAL LIVE AND STATMUX, VERSION 2.17 GA

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Contents

INTRODUCTION

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 delivers four times the performance of CPU-only encoding solutions, significantly reducing total cost of ownership. High performance and reduced operating expenses drive immediate business value – improving monetization opportunities and optimizing video delivery.

AWS Elemental Live can be deployed in stand-alone mode or as part of a cluster controlled by Conductor Live 3.

AWS Elemental Statmux is an extension of the AWS Elemental Live product line. The Statmux feature is available on an AWS Elemental Live node, or can be installed as a dedicated AWS Elemental Statmux node. The AWS Elemental Live/Statmux integrated node contains all the features of AWS Elemental Live, plus the Statmux. The AWS Elemental Statmux dedicated node contains only the Statmux feature.

AWS Elemental Statmux can be deployed in stand-alone mode or as part of a cluster controlled by Conductor Live 3.

These Release Notes describe new features, product enhancements, and known issues up to this AWS Elemental Live software release.

Types of Releases

AWS Elemental Live appliances currently offer monthly builds designated either General Release Major (GA), GA Maintenance, or Limited Release (LA).

GA Major Builds

The Live "Major Feature Release" GA builds:

- Are released several times a year and are intended for all standard workflows. For example, Elemental Live 2.17.3 GA.
- Are available for download from the Elemental User Community by any customer with an active support agreement
- May be installed on new Elemental Live appliances which ship from the factory.
- Are production ready builds that receive the spectrum of software support entitlements from the AWS Elemental Support team.

GA Maintenance Builds

The Elemental Live "Maintenance" GA builds follow GA builds and contain only fixes to issues. For example, Live 2.17.4 GA (Maintenance).

LA Builds

The Elemental Live LA "Feature Release" builds:

- Are intended to deliver new features quickly to early adopter customers. For example, 2.17.0 LA.
- Are only available for download from the Elemental User Community by pre-authorized customers with an active support agreement
- Are production ready builds that receive the spectrum of software support entitlements from the AWS Elemental Support team for a limited period of time.
- LA builds must be updated to GA builds within two GA release cycles after the LA build, or within eight (8) months, whichever is shorter. For example, you install Live 2.17.1 LA on your Live appliance. Two months later Live 2.17 GA is available – you should update your production system to this GA build. Subsequently the next Live GA, Live 2.13 GA is released. You must update your LA build to either Live 2.17 GA or Live 2.18 GA in order to qualify for AWS Elemental Support, as the Live 2.17.1 LA support window timed out upon the release of Live 2.18 GA.

SOFTWARE UPGRADES

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

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

For information on upgrading and configuring, see the following guides, which are all available on the AWS Elemental User Community (https://community.AWS Elemental.com/).

For Information on	See
General information on install options	Installing AWS Elemental Products – Orientation Guide
Upgrading to version 2.17.x	See page 15
Configuring an Appliance Edition for the first time	AWS Elemental Live Appliance Edition Configuration Quick Start, or AWS Elemental Statmux Appliance Edition Configuration Quick Start
Installing on a physical machine with a node-locked license for the first time	AWS Elemental Live with a Node-locked License - Install Guide
Installing on a virtual machine with a pooled license	Pooled License Deployments on a VM – Install Guide

OPEN SOURCE SOFTWARE ACKNOWLEDGEMENTS

This version of AWS Elemental Live and this version of AWS Elemental Statmux do not include any new open source libraries.

For general information about open source libraries in these products:

1. Go to the Elemental Live or Elemental Statmux web interface.
2. From the main menu, choose Support > Legal.
3. Scroll to the bottom of the page and click the Third Party Licenses link.

Release Notes AWS Elemental Live 2.17.10 GA

Essential Notes

Upcoming Change to Statmux Support: Affects 2.18.x Versions

Caution: AWS Elemental Live version 2.18.x does not support MPTS or Statmux features. The functionality related to MPTS and Statmux is currently being updated and will be reinstated in a later release. If you have questions, contact AWS Elemental Support.

Resolved Issues

Key	Topic	Description
SOCK-35975	Inputs; CL3; Statmux	There was a race condition during which Elemental Live sometimes did not respond to API requests to switch or create inputs. This is now fixed.

Known Issues

There are no new known issues for this version. Also see the known issues in the previous version.

Release Notes AWS Elemental Live 2.17.9 GA

Essential Notes

Upcoming Change to Statmux Support: Affects 2.18.x Versions

Caution: AWS Elemental Live version 2.18.x does not support MPTS or Statmux features. The functionality related to MPTS and Statmux is currently being updated and will be reinstated in a later release. If you have questions, contact AWS Elemental Support.

Resolved Issues

Key	Topic	Description
SOCK-35868	Outputs – Audio; SCTE-35	Previously, SCTE-35 audio sometimes segmented at different times for different versions, leading to segment drift that accumulated over time. This is now fixed.
SOCK-35835	Inputs – MPTS	Demuxing MPTS input that had varying frames per second could cause events to fail to determine which FPS to start with. A change was introduced to make FPS calculations start after a period of time, which fixed the issue.
SOCK-35705	Outputs	Cue points can now be canceled in Elemental Live.

Known Issues

There are no new known issues for this version. Also see the known issues in the previous version.

Release Notes AWS Elemental Live 2.17.8 GA

Essential Notes

Upcoming Change to Statmux Support: Affects 2.18.x Versions

Caution: AWS Elemental Live version 2.18.x does not support MPTS or Statmux features. The functionality related to MPTS and Statmux is currently being updated and will be reinstated in a later release. If you have questions, contact AWS Elemental Support.

Resolved Issues

Key	Topic	Description
SOCK-35554	Outputs – SCTE-35	SCTE-35 splices were sometimes delayed after FrameSync dropped frames. This is now fixed.

Known Issues

There are no new known issues for this version. Also see the known issues in the previous version.

Release Notes AWS Elemental Live 2.17.7 GA

Essential Notes

Upcoming Change to Statmux Support: Affects 2.18.x Versions

Caution: The upcoming AWS Elemental Live version 2.18.x will not support MPTS or Statmux features. The functionality related to MPTS and Statmux is currently being updated and will be reinstated in a later release. If you have questions, contact AWS Elemental Support.

Resolved Issues

Key	Topic	Description
SOCK-34533	Outputs	Slow-down issues, such as thumbnail generation, sometimes clogged up the encoder and caused dropped frames. This is now resolved.
SOCK-35041	Outputs; CL3	Log messages in /var/log/messages were too verbose, causing the log to fill up quickly. This is now fixed.

Known Issues

There are no new known issues for this version. Also see the known issues in the previous version.

Release Notes AWS Elemental Live 2.17.6 GA

Essential Notes

Upcoming Change to Statmux Support: Affects 2.18.x Versions

Caution: The upcoming AWS Elemental Live version 2.18.x will not support MPTS or Statmux features. The functionality related to MPTS and Statmux is currently being updated and will be reinstated in a later release. If you have questions, contact AWS Elemental Support.

Resolved Issues

Key	Topic	Description
SOCK-32655	Outputs > web interface	The web interface was not usable on machines with more than 200 CPUs, and there were some issues with https. These issues are now fixed.
SOCK-32839	Outputs > ancillary data; MS Smooth	When sparse tracks were scheduled to trigger at the same time, they were discarded by USP as duplicates because they had the same UUID/baseMediaDecodeTime. To work around this, Live now tracks the fragment_absolute_time on sparse tracks to ensure that they are unique to bypass duplicate detection.
SOCK-33942	Outputs > output locking	An improvement has been made to alerts and messages when you use the output locking feature. When a remote host joins or leaves the output locking pool, the eme log includes messages about the action. The alert 6706 "Not Output Locked To [RemoteHost.Event.OutputGroup=<remote host name>.<live event number>.<output group name>]" has been added.
SOCK-34418	Outputs > output locking	Epoch locking events were requiring a resync every 2-3 segments. This is now fixed.
SOCK-34434	Timezone	As a result of Brazil's decision to no longer observe Daylight Saving Time, a customer attempted to change their timezone in Live, and was unable to do so. This is now fixed.
SOCK-34657	Inputs	Hot-hot failover combined with an improperly configured image inserter was causing event to lock up. This is now fixed.
SOCK-34688	Outputs > SCTE-35; MS Smooth	In version 2.16 and higher, SCTE-35 markers sometimes caused sparse tracks to return server errors while streaming MS Smooth. This is now fixed.
SOCK-34740	Dolby audio	There was a fix in versions 2.11 and 2.12 that resolved an issue with Dolby Digital Plus audio encoder when running in "Follow input metadata" mode. This fix was inadvertently removed in version 2.16. The fix is now back in place.
SOCK-34874	Inputs	WebVTT character escaping wasn’t handling style class names with “_” in them. This is now fixed.

Known Issues

Key	Topic	Description
SOCK-27253	Outputs	Low latency mode is no longer supported, but there is still a low latency mode check box in the UI. This does not negatively affect anything, and no longer does anything when selected. It will be removed in 2.18.x.
SOCK-34955	Outputs > output locking	Resync by output locking on behalf of HLS causes a negative interaction with DASH, which not support resyncs after the initial sync.
SOCK-34969	Inputs > SMPTE-2110	When the ancillary data contains OP-47 (Teletext) captions, they are not being processed by Live.

Also see the known issues in the previous version.

Release Notes AWS Elemental Live 2.17.5 GA

Essential Notes

Upcoming Change to Statmux Support: Affects 2.18.x Versions

Caution: The upcoming AWS Elemental Live version 2.18.x will not support MPTS or Statmux features. The functionality related to MPTS and Statmux is currently being updated and will be reinstated in a later release. If you have questions, contact AWS Elemental Support.

Resolved Issues

Key	Topic	Description
SOCK-34658	Inputs	When Live ingested inputs, it was not properly detecting pixel aspect ratio changes mid-stream. This is now fixed.
SOCK-34145	Outputs – Audio	Sometimes output audio and video were not aligned. This is now fixed.
SOCK-34441	Inputs – Audio	Some audio streams were parsed incorrectly during demuxing, causing audio errors. This is now fixed.
SOCK-34500	Inputs – Video	There was an invalid input video frame rate error message when ingesting a transport stream input even when the frame rate was valid. This is now fixed.
SOCK-34662	Inputs	Sometimes Live was unable to detect 1080 PSF inputs. This is now fixed.
SOCK-34675	Networking	Socket buffer sizes were too small for network inputs and outputs, causing errors. Socket buffer sizes are now large enough to prevent errors.
SOCK-33826	Outputs – Microsoft Smooth	For some Microsoft Smooth outputs, Live terminated the connection before all of the data was received. This is now fixed.
SOCK-34596	SCTE-35	When using SCTE-35 markers with HLS outputs, segment sizes were sometimes inconsistent and too large. This is now fixed.

Known Issues

There are no new known issues for this version. Also see the known issues in the previous version.

Release Notes AWS Elemental Live 2.17.4 GA

Essential Notes

Upcoming Change to Statmux Support: Affects 2.18.x Versions

Caution: The upcoming AWS Elemental Live version 2.18.x will not support MPTS or Statmux features. The functionality related to MPTS and Statmux is currently being updated and will be reinstated in a later release. If you have questions, contact AWS Elemental Support.

Resolved Issues

Key	Topic	Description
SOCK-34341	Web interface	The bandwidth graph has been missing from the web interface since Elemental Live version 2.16.5. The graph is now present again.
SOCK-34329	Output locking	A problem can sometimes arise in an HLS output with output locking enabled between different encoders (separate Live appliances), if there are problems with the timecode in the input. In order to synchronize with the other encoders, one encoder might produce segments of an invalid length. This problem has been resolved. The encoders now resynchronize with each other and all also produce segments of a valid length.
SOCK-34343	Inputs – SMPTE-2110	Previously, when an event with SMPTE-2110 runs, the web interface view did not display media info (stream information). The web interface now displays this information.
SOCK-34251	Inputs – SMPTE-2022-7	Previously, if a SMPTE 2022-7 input had one invalid URL, Elemental Live incorrectly displayed an error message for both URLs. The error message now appears for only the invalid input.
SOCK-34109	Platform	In earlier version of CentOS versions of Elemental Live (from 2.15.x to 2.17.1), there was a problem in the Linux kernel that could result in an operating system deadlock. This deadlock resulted in messages in the kernel and dmesg logs as 'CPU Hard Lockup'. The deadlock required a system reboot to recover. This issue has been resolved.
SOCK-34022	Captions	Previously, some special characters did not show correctly in WebVTT output captions. This issue has been resolved.
SOCK-33474	Captions	Previously, there was a problem when Live switches from an SDI input with Teletext captions to a UDP input with Teletext captions, and the captions are being converted to a different format. As soon as the switch occurs, the output captions became corrupted. This issue has been resolved.

Known Issues

There are no new known issues for this version. Also see the known issues in the previous version.

Release Notes AWS Elemental Live 2.17.3 GA

Essential Notes

Changes to the Operating system

CentOS 7.5 and RHEL 7.5 Support

AWS Elemental Live 2.17.x GA operates on CentOS 7.5 and RHEL 7.5. It cannot be installed on CentOS 6.9.

You must perform a kickstart to migrate from CentOS 6.9 and RHEL 6.9 to CentOS 7.5 and RHEL 7.5. You must create a database backup of AWS Elemental Live 2.14.x and run a script to prepare for the kickstart. For information, see Kickstarting and Upgrading from CentOS 6.9 / RHEL6 to CentOS 7.5/RHEL7

The kickstart will preserve AWS Elemental Live application data. This preserved data includes live event XMLs, profiles, and presets. The kickstart will not preserve network bonds, network vlans, firewall configurations, and network mounts. Please refer to the following documents:

- Creating a Network Bond in CentOS7 and RHEL7 from the CLI
- Creating a Network VLAN in CentOS7 and RHEL7 from the CLI
- Creating a network mount in CentOS7 and RHEL7 from the CLI

CentOS 7.5 and RHEL 7.5 Kickstart Does not Preserve Bond and VLAN Network Configurations

Network bond and VLAN configurations created in CentOS 6.9 and RHEL 6.9 will be deleted during the kickstart to CentOS 7.5 and RHEL 7.5. You must recreate this advanced network configurations from the Linux CLI following the kickstart. For information, see:

- Creating a Network Bond in CentOS7 via CLI
- Creating a Network VLAN in CentOS7 and RHEL7 from the CLI
- Creating a network mount in CentOS7 and RHEL7 from the CLI

Network Bond and VLAN Can Be Created from the Linux CLI

You must create advanced network configurations from the Linux CLI. For information see:

- Creating a Network Bond in CentOS7 via CLI
- Creating a Network VLAN in CentOS7 and RHEL7 from the CLI
- Creating a network mount in CentOS7 and RHEL7 from the CLI

Downgrade to Live 2.14.x Requires a Kickstart

CentOS 7.5 and RHEL 7.5 cannot be used as the operating system for AWS Elemental Live 2.14.x or below.

If you want to return to AWS Elemental Live 2.14.4 or below, you must perform a kickstart using the AWS Elemental version 3.4 kickstart to return to the CentOS 6.9 and RHEL 6.9. See Downgrading from CentOS7 to CentOS6.

Version 2.17.x Does Not Install on Group 2 Hardware

You cannot install version 2.17.x and later of AWS Elemental Live and AWS Elemental Statmux on "group 2" hardware. For a list of SKUs in group 2, see https://community.elemental.com/docs/DOC-4042.

If you have group 2 hardware, you must continue on the 2.14.x release version.

Adding a 2.17.x Worker Node to a 3.7.x Conductor Live Cluster

To add an Elemental Live 2.17.x or Elemental Statmux 2.17.x worker node to an AWS Elemental Conductor Live cluster running version 3.7.8 and above you must perform special steps. (You don't have to follow these special steps when adding a 2.17.x worker node to a version 3.17.x Conductor Live cluster.) Follow this procedure:

- Remove the static route from the worker.
- Add the worker node to the cluster.
- Add the static route back to the worker.

End of Support – DASH Manifest Option

Starting with version 2.17.3 GA, AWS Elemental Live does not support publishing DASH manifests with an .init suffix. Only the .mp4 suffix is supported.

Reminder to Cycle the Power when Upgrading or Downgrading

When you upgrade or downgrade any version of AWS Elemental Live, we strongly recommend that you turn off the appliance and turn it back on. Doing so ensures that any installer and firmware updates (or downgrades) are correctly set up.

Video Quality vs. Density

AWS Elemental invests in continuous improvement of VQ for the AWS Elemental Live appliance. In some cases, VQ improvements are achieved by trading off stream density. By upgrading to this new software version, you may experience moderate loss of density on some workflows. If density is more important than VQ, you may be able to recover lost density by adjusting VQ parameters, such as for an H.264 or HEVC stream changing SvQ from 0 to 1.

Downgrading No Longer Requires the prepare-for-downgrade Option

AWS Elemental Live 2.17 versions do not require a prepare for downgrade operation. Simply run the intended 2.17.x software installer with the options to downgrade and manage the database. Installer options --downgrade, --c and --restore-db-backup can be used for downgrading to a previous release.

New Features

New Input Type – SMPTE 2110

AWS Elemental Live supports ingest of SMPTE-2110 inputs via a 10Gb Ethernet network card installed on the appliance. SMPTE-2110 is a standard that provides a solution to migrating from SDI infrastructure to an all-IP infrastructure. This input supports ingest of specific formats of video, audio, captions (via ancillary data streams), and other ancillary data.

The AWS Elemental Live User Guide at https://docs.aws.amazon.com/elemental-live will be updated with a section on this input. This section will contain information about the scope of the feature and about setting it up in an event. (SOCK-28437)

New Input Type – SMPTE 2022-7

AWS Elemental Live adds support for a new SMPTE 2022-7 network input type. This allows Live to receive UDP/RTP inputs over two ports at once and perform per packet redundancy. This allows seamless failover between sources, as well as strong protection against lost packets.

Apple HLS – Chunked Transfer of Outputs to MediaStore

Apple HLS outputs now support chunked transfer to AWS Elemental MediaStore. Previously, HLS outputs supported chunked transfer for all Basic PUT, WebDAV, and Akamai.

With chunked delivery, the downstream system can start processing the data before the entire segment has been encoded. (33195)

DASH Outputs and Chunked Encoding

DASH outputs now support chunked encoding and chunked transfer for delivery to all HTTP destinations (BasicPUT, WebDAV, Akamai, and AWS Elemental MediaStore).

- If you don't enable either chunked transfer or chunked encoding, then the DASH player can begin downloading content only after the entire segment has been encoded.
- If you enable chunked transfer, then any DASH player that can read the DASH MPD (media presentation description) attributes can start reading the MPD and start downloading a segment without waiting for the segment to be completely encoded. Other DASH players wait for the entire segment.
- If you enable both chunked transfer and chunked encoding, then any DASH player that can read the DASH MPD attributes and that supports HTTP chunked transfer can start downloading a segment without waiting for the segment to be completely encoded.

The advantage of enabling both features is in improved latency when a player starts playing content in mid-stream or when it must restart. When only chunked transfer is enabled, when a player starts in mid-stream, it must wait for the start of the next segment. When both chunking features are enabled, the player does not need to wait. Similarly, if delivery to the player fails, the player must retrieve the entire segment from the start. When both chunking features are enabled, if delivery fails, the player must retrieve only the last failed chunk in the segment.

We recommend that you enable both features. To enable these features, go to the DASH output group and check the Chunked Encoding field and complete the Chunk Length field. Then check the Chunked Transfer field.

The values you enter in the Chunk Length, Fragment Length, and Segment Length fields (in the Output Group section) and in GOP Size (in the Output > Streams section) must all work together. If necessary, Live adjusts the fragment length and segment length that you enter so that fragment length is a multiple of GOP size and segment length is a multiple of fragment length. Also, if necessary, Live adjusts the chunk length that you enter so that the number of frames per chunk is an even divisor of the number of frames in a fragment. (SOCK-33763)

The improvement in latency offered by these features is also affected by the end-to-end workflow, the video encoding parameters, and other factors. (SOCK-33763, SOCK-33195)

DASH Outputs and Start Time

In DASH outputs, the availabilityStartTime (AST) in the MPD will now match the start time of the first segment of video that is being generated by the event. (SOCK-33265)

Color space (HDR)

AWS Elemental Live now supports conversion from HDR (on input) to SDR (on output), when the input follows the HLG 2020 specification, and you set up the output as SDR 709. Live does not support conversion from either HDR color space to SDR 601. (SOCK-34263)

Network

Web server TLS settings have been hardened. (SOCK-33550)

Platform

The base operating system packages have been upgraded to align with the Centos 7.7 Release. (SOCK-34264)

Resolved Issues

Key	Topic	Description
SOCK-32854	Alerts and messages	If Elemental Live cannot write to the output destination, an alert appears on the web interface. Previously, the alert did not clear after the problem with the destination has been solved. Now, the alert does clear.
SOCK-34347	Alerts and messages	New messages have been added to the EVE log.
SOCK-33493	Captions	Previously, there was a problem with the XML header in EBU-TT-D captions in the output. This problem sometimes causes the header to become bloated and to contain irrelevant information. Now, the headers are always clean and relevant.
SOCK-34114	Captions	Previously, there was an issue when a Live event is configured to use epoch output locking on an MS Smooth output with EBU-TT-D or TTML captions. It might happen that the captions aren't always synchronized with the video/audio or that captions are missing for portions of the output. This problem has been resolved.
SOCK-34229	Captions	Previously, there were several issues with EBU-TT-D or TTML captions in an MS Smooth output group that is configured to use epoch locking. First, it might happen that the output caption start and/or end times were incorrect and do not line up properly with the corresponding video and audio. Secondly, it might happen that the caption start time and/or end time might be beyond the end of the associated MP4 segment. Thirdly, it might happen that the output caption start time was after the end time. All of these problems have been fixed. The caption start/end times in the MS Smooth MP4 segments are now correct.
SOCK-34245	Captions	This version of AWS Elemental Live introduces two changes to captions. 1. Live now honors the DVB-Sub "graphics safe area" for both DVB-Sub and Burn-in output captions. This safe area defines a border around the edges of the frame where captions must not appear, so it ensures that captions are never cut off. As a result of implementing this safe area, the font size and weight are adjusted slightly to fit the content in the smaller area. 2. For Teletext input captions converted to DVB-Sub or Burn-in, the placement of the captions now better matches the placement relative to the original Teletext grid.
SOCK-33644	Captions – ARIB	Previously, the Live event might fail if it included a UDP/TS output with ARIB captions. This issue has been resolved. This configuration no longer causes the event to fail.
SOCK-33609	Captions – RTMP CaptionInfo	A memory leak has been resolved in a Live event that includes an output with RTMP CaptionInfo captions.
SOCK-33807	Crash at end of event	Previously, Live could crash at the end of an event for no discernible reason. This crash would occur after all processing was completed and therefore had no impact on the output. Improvements have been made to better handle the problem, decreasing the possibility of a crash.

Key	Topic	Description
SOCK-34137	Dolby Vision	A change has been made for DolbyVision output. HDR display mastering meta-data is now present in the resultant output stream.
SOCK-32978	EULA	The EULA text has been updated with this release. To view the EULA, click the Legal tab on the web interface and follow the prompts.
SOCK-33789	GPU-enabled versions	Previously, the GPU-enabled version of Live could crash for no discernible reason. Improvements have been made to better handle the problem, decreasing the possibility of a crash.
SOCK-33705	Input switching	Previously, Live could crash during an input switch or during event shutdown for no discernible reason. The race conditions that caused these problems have now been addressed.
SOCK-33980	Input switching	Previously, when you enabled sparse track in an MS Smooth output, input switching might stop working correctly. This issue has been resolved.
SOCK-34198	Inputs – 2022-7	Previously, when viewing the status of an event that uses 2022-7 input, the second input URL was not consistently displayed. This issue has been resolved.
SOCK-34200	Inputs – 2022-7	With a 2022-7 input into AWS Element Live, it is acceptable for the two sources to have the same RTP address/port, so long as they have different IGMP sources. Previously, Live would not accept this configuration in an event. This issue has been resolved and Live now accepts the configuration.
SOCK-34076	Inputs – AJA	After the last upgrade of the AJA firmware and drivers, the sdirecorder tool (for capturing SDI input for testing) no longer worked for AJA devices. This issue has been resolved and the tool now works again.
SOCK-33704	Inputs – AVC	Previously, Elemental Live might incorrectly interpret corrupted AVC input as healthy content, and attempt to process the content. Eventually processing would fail. Live now has improved detection of corrupted AVC input.
SOCK-33803	Inputs – AVC	Previously, Live might crash for no discernible reason when an input using the AVC (H.264) codec. Improvements have been made to better handle the problem, decreasing the possibility of a crash.
SOCK-33937	Inputs – AVC	A Live appliance with GPU-enabled software can now ingest H.264 input with resolutions above 1440p.
SOCK-33664	Inputs – Dolby audio	Previously, if an event included corrupt Dolby audio input, errors could occur that caused the input or the entire event to fail. Elemental Live now includes better handling of corrupted Dolby input.
SOCK-33438	Inputs – HDR	For HDR source content, AWS Elemental Live now automatically detects the HDR format, as conveyed in the SDI signal.
SOCK-33761 SOCK-33891	Inputs – MPEG-2	Live could crash for no discernible reason when the input uses the MPEG-2 codec. Improvements have been made to better handle the problem, decreasing the possibility of a crash.

Key	Topic	Description
SOCK-33808	Inputs – MPEG-2	Live could crash for no discernible reason when the input uses the MPEG-2 codec. Improvements have been made to better handle the problem, decreasing the possibility of a crash.
SOCK-34073	MediaPackage interoperation	Improvements have been made in communicating with AWS Elemental Media Package so that there is less likelihood of receiving HTTP 404 errors.
SOCK-31736	Nielsen	In the web interface for an event, the Nielsen configuration section now correctly identifies the Nielsen SDK version as version 2.3.
SOCK-33939 SOCK-33942	Output locking	An improvement has been made to alerts and messages when you use the output locking feature. When a remote host joins or leaves the output locking pool, the eme log includes messages about the action. The alert 6706 "Not Output Locked To [RemoteNode=<remote node name>" has been added.
SOCK-34363	Output locking	This version of Elemental Live fixes a deadlock problem that could occur when epoch output locking was enabled.
SOCK-33433	Outputs – Archive	Previously, if an event with a paused mp4 archive outputs was stopped, that output was truncated and thus unreadable. Now, if an event with a paused mp4 archive output is stopped, the output will be closed gracefully and thus be readable.
SOCK-33800	Outputs – MS Smooth	Previously, Live might crash when sending output to an MS Smooth destination that was experiencing an outage, particularly when the output included SCTE-35 ad avails. Live no longer crashes in this scenario.
SOCK-33589	Outputs – RTMP	Previously, when a Live event restarted, the timestamp in an RTMP output might cause a problem for the system downstream of Live. After a restart, the timestamp in the output was reset to 0, so the downstream system might not recognize the restarted output as a continuation of the previous content. Now, the timestamp starts with the UTC time, so that the downstream system should correctly interpret the restarted output.
SOCK-33863	Outputs – RTMP	The timestamp for an RTMP output is initially set as an absolute time, then subsequent timestamps are relative. When the absolute timestamp for the RTMP output hits the 32-bit limit, Live rolls over the timestamp internally. Previously there was a problem because after the rollover, Live continued to specify a relative timestamp in the header. A downstream player that was internally calculating an absolute timestamp would not be able to add this relative timestamp to the previous time without an overflow. Now, after the rollover, Live specifies a new absolute timestamp in the first header, then continues with relative timestamps. Downstream systems should note the absolute timestamp and therefore should not encounter an overflow problem.
SOCK-34234	Outputs – RTMP	Previously, there was an issue at the RTMP timestamp rollover point. This problem could cause downstream packagers to get confused about the timing of the packets. This issue has been resolved.
SOCK-33676	Outputs – UDP/TS	Previously, a PMT update was sometimes missed when changes included a removing the Audio PID. This issue has been resolved.

Key	Topic	Description
SOCK-33999	Outputs to Amazon S3	Previously, MP4 or fMP4 outputs (e.g., DASH, HLS) to a custom Amazon S3 bucket could fail due to inaccurate destination filename manipulation. This is now corrected, and these Live outputs fully handle custom S3 endpoints and regions. When you enter an output destinations, avoid including an extension where necessary. With Archive outputs, Live lets you define the extension, but with other file-based outputs, Live handles the extensions; if you include an extension yourself, you might end up with a file name such as myoutput.mp4.mp4.
SOCK-34097	Outputs with HTTP	There is a change to the retry logic when connecting to a server using HTTP. This affects delivery of outputs for HLS, DASH, and MS Smooth. Prior to 2.16.3, the logic involved a cycle of retrying using an interval that related to the length of the segments, and doing that a specified number of times (number of retries). In 2.16.4, the interval pattern for the cycle was improved to use an exponential backoff algorithm (start after 250ms; then double that; then double again...) but the "number of retries" parameter was inadvertently removed: Live performed the retry cycle only once. Now, the number of retries has been reinstated. So Live still has the improved retry cycle, and you can once again specify how many cycles you want. We believe that the retry logic allows for quick recovery from network “hiccups” while allowing a longer retry for network issues that aren’t simple hiccups.
SOCK-34107	Platform	Previously, in versions of AWS Elemental Live that ran on CentOS 7, PAM authentication did not work. Staring with Elemental Live 3.17.4, PAM authentication works again.
SOCK-34050	SCTE-35	Previously, Live was tacitly adding data to SCTE 35 messages that required sub-segment information but did not have it. However, the descriptor_length field was not updated to reflect this change. Now, when this information is explicitly added, the descriptor_length field is updated so that downstream parsing of the SCTE 35 message won't fail. In addition, entries are add to the Live logs to reflect the addition.
SOCK-34313	SCTE-35	The information in SCTE 35 messages was not always properly being included in ad marker messages in RTMP output. These messages have been corrected to accurately reflect the intended information.
SOCK-33212	Statmux	An issue with memory usage when using AWS Elemental Live with statmux or when using AWS Elemental Statmux has been resolved.
SOCK-34247	Timecode	Previously, MPEG2 GOP timecode did not roll over correctly after 24 hours. This issue has been corrected.
SOCK-33809	Video – SVQ	Recent versions of the CPU-only versions of Live have supported the value of -3 in the SVQ field. With this version of Live, this value is now included in the field dropdown in the web interface.
SOCK-33203	Web interface	Previously, the web interface for AWS Elemental Live might become unresponsive when running multiple events using MPTS inputs that contained a lot of programs. This issue has been resolved.

Key	Topic	Description
SOCK-33670	Web interface	The help text on the web interface for the DVB Compliance checkbox has been improved. This field appears for the UDP/TS, Archive (with MPEG-2 container), and Reliable TS output groups.
SOCK-34087	Web interface	Previously, it sometimes happened that an exception occurred when viewing individual alerts on the web interface. This issue has been resolved.
SOCK-34236	Web interface	Previously, when SSL was enabled on a worker, there was no control on the web interface to start an MPTS. Now, there is a control on the Event Control - MPTS Control page.
SOCK-34389	Web interface	Previously, when previewing events, the Live user interface would not always display the preview of the input as expected. This issue has been corrected.

Known Issues

Key	Topic	Description
SOCK-33859	Installer	If you try to install version 2.17.x on CentOS 6.9, the installation fails because this version requires CentOS 7.0. It is a known issue that there is no error message when the installation fails.

Release Notes for AWS Elemental Statmux 2.17.10 GA

Resolved Issues

Key	Topic	Description
SOCK-35975	Inputs; CL3; Statmux	There was a race condition during which Elemental Live sometimes did not respond to API requests to switch or create inputs. This is now fixed.

Known Issues

There are no new known issues in this version. Also see the known issues in the previous version.

Release Notes for AWS Elemental Statmux 2.17.9 GA

Resolved Issues

There are no new resolved issues in this version. Also see the resolved issues in the previous version.

Known Issues

There are no new known issues in this version. Also see the known issues in the previous version.

Release Notes for AWS Elemental Statmux 2.17.8 GA

Resolved Issues

There are no new resolved issues in this version. Also see the resolved issues in the previous version..

Known Issues

There are no new known issues in this version. Also see the known issues in the previous version.

Release Notes for AWS Elemental Statmux 2.17.7 GA

Resolved Issues

Key	Topic	Description
SOCK-35417	Outputs	Statmux complexity and allocation messages were arriving late, sometimes causing Statmux Multiplex to stop output. This is now fixed.

Also see the resolved issues in the previous version.

Known Issues

There are no new known issues in this version. Also see the known issues in the previous version.

Release Notes for AWS Elemental Statmux 2.17.6 GA

Resolved Issues

There are no new resolved issues in this version.

Also see the resolved issues in the previous version.

Known Issues

There are no new known issues in this version. Also see the known issues in the previous version.

Release Notes for AWS Elemental Statmux 2.17.5 GA

Resolved Issues

Key	Topic	Description
SOCK-34675	Networking	Socket buffer sizes were too small for network inputs and outputs, causing errors. Socket buffer sizes are now large enough to prevent errors.

Also see the resolved issues in the previous version.

Known Issues

There are no new known issues in this version. Also see the known issues in the previous version.

Release Notes for AWS Elemental Statmux 2.17.4 GA

Resolved Issues

There are no new resolved issues in this version. Also see the resolved issues in the previous version.

Known Issues

There are no new known issues in this version. Also see the known issues in the previous version.

Release Notes for AWS Elemental Statmux 2.17.3 GA

Essential Notes

Changes to the Operating System

See page 17 for important information about the upgrade to CentOS 7.5 and RHEL 7.5.

Reminder to Cycle the Power when Upgrading or Downgrading

When you upgrade or downgrade any version of AWS Elemental Live, we strongly recommend that you turn off the appliance and turn it back on. Doing so ensures that any installer and firmware updates (or downgrades) are correctly set up.

Version Compatibility

The AWS Elemental Statmux version must match the version of AWS Elemental Live. Therefore, if you upgrade AWS Elemental Live nodes to 2.17.x, you must upgrade existing Statmux nodes to 2.17.x. If you do not upgrade AWS Elemental Live nodes, do not upgrade the Statmux nodes.

If you downgrade the AWS Elemental Live node from 2.17.x to an earlier version, you must downgrade the Statmux nodes.

Adding a 2.17.x Worker Node to a 3.7.x Conductor Live Cluster

To add an Elemental Live 2.17.x or Elemental Statmux 2.17.x worker node to an AWS Elemental Conductor Live cluster running version 3.7.7 and above, you must perform special steps. (You don't have to follow these special steps when adding a 2.17.x worker node to a version 3.17.x Conductor Live cluster.) Follow this procedure:

- Remove the static route from the worker.
- Add the worker node to the cluster.
- Add the static route back to the worker.

Reminder to Cycle the Power when Upgrading or Downgrading

When you upgrade or downgrade any version of AWS Elemental Statmux, we strongly recommend that you turn off the appliance and turn it back on. Doing so ensures that any installer and firmware updates (or downgrades) are correctly set up.

Downgrading No Longer Requires the prepare-for-downgrade Option

AWS Elemental Statmux 2.17 versions do not require a prepare for downgrade operation. Simply run the intended 2.17.x software installer with the options to downgrade and manage the database. Installer options --downgrade, --c and --restore-db-backup can be used for downgrading to a previous 2.17 release.

Resolved Issues

Key	Topic	Description
SOCK-33212	Memory usage	An issue with memory usage when using AWS Elemental Live with statmux or when using AWS Elemental Statmux has been resolved.