aws elemental

Release notes

AWS Elemental Live and Statmux version 2.20 GA and AWS Elemental Conductor Live 3 version 3.20 GA

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Contents

AWS Elemental Live and Statmux 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 and Statmux software release.

Types of releases

There are two types of AWS Elemental Live, Statmux, and Conductor Live 3 releases: general availability (GA) feature releases and general availability (GA) maintenance releases.

GA feature releases

AWS Elemental Live/Statmux GA feature releases are:

- Released monthly and include new features and defect fixes. New features are introduced in the first four releases of each major release line. For example, Elemental Live 2.20.0 GA FR, 2.20.1 GA FR, 2.20.2 GA FR, and 2.20.3 GA FR.
- Available for download from the AWS Appliances & Software services console by any customer with an active AWS Elemental agreement.

GA maintenance releases

AWS Elemental Live/Statmux GA maintenance releases are:

- Released monthly and include only defect fixes. Maintenance releases are introduced after the first four releases of each major release line. For example, Elemental Live 2.20.4 GA MR, 2.20.5 GA MR, and 2.20.6 GA MR.
- Available for download from the AWS Appliances & Software services console by any customer with an active AWS Elemental agreement.

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, refer to the AWS Elemental Live documentation.

Essential Notes

Change to release lines

All AWS Elemental Live, Statmux, and Conductor Live 3 releases are now General Availability (GA). Historical Limited Availability (LA) releases are now available on the AWS Appliances & Console service. For more information, see Types of releases.

Change to release notes

Going forward, AWS Elemental Live/Statmux and AWS Elemental Conductor Live 3 release notes can be found together in one document. This single release notes document will continue to be updated and available at AWS Elemental Live Documentation and AWS Elemental Conductor Live 3 Documentation.

Change to release notes location

The Elemental User Community will no longer be available after December 31st, 2020.
Release notes for AWS Elemental Live/Statmux and Conductor Live 3 will continue to be updated and available at AWS Elemental Live Documentation and AWS Elemental Conductor Live 3 Documentation.

Change to support for Statmux

AWS Elemental Live version 2.20.2 reintroduces support for MPTS and Elemental Statmux features. For information on how to upgrade from Elemental Statmux 2.17 to 2.20, refer to Statmux 2.17 to 2.20 Cluster Upgrade Procedure. Contact AWS Elemental Support if you have additional questions.

Mandatory password reset

There is a mandatory password reset required for AWS Elemental Live and AWS Elemental Conductor Live 3, if your appliances have been configured with user authentication enabled. This change is to ensure that all users of the web interface and API have set strong passwords.

The new password requirements are the following:

- Minimum 8 characters.
- At least one uppercase letter, at least one lowercase letter, at least one number, and at least one symbol.

This password change is a one-time action. Therefore, for example, if you change the password when you install version 2.20, you won't be forced to change it again when you install 2.21.

For more details, and for important information about an issue with this procedure, see the AWS Elemental Conductor Live 3 section of these release notes.

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.

Deprecation information

Civolution watermarking will be deprecated in a later version.

When you start an event with the DTS Express audio encoder feature, you will see a notice that indicates future deprecation in a later version. Please disregard this notice. DTS Express is supported for all 2.20 versions.

New features

Reintroduction of support for MPTS and Statmux features

This release reintroduces support for Statistical Multiplexing (Statmux), including several new features and enhancements:

- New and improved rate control resulting in a 10-25% improvement in MPEG-2, AVC, and HEVC visual quality.
- Elemental Statmux now allows up to 60 channels per MPTS.
- Elemental Statmux now supports a maximum output bitrate of up to 125 Mbps.
- Up to four seconds of latency reduction depending on the former workflow. Latency is also now automatically controlled by the multiplexer rather than through manual settings.
- The MPTS user interface experience has been streamlined and centralized. Elemental Conductor Live 3 is now the primary interface for MPTS configuration and management. MPTS settings can now be edited while an MPTS is running without the need to stop and restart MPTS. MPTS settings in the Statmux user interface are now read-only and MPTS configuration and management directly on Elemental Live nodes has been retired.
- Improved bandwidth management. The video pool is now automatically optimized during run time and dynamic changes in audio and metadata are accounted for automatically.
- New channel priority settings allow for channel-specific tuning.
- Elemental Live node to Elemental Statmux IP address configuration now happens automatically, and is allocated based on a range.
- Elemental Live nodes now support 1+1 channel redundancy for channels included in an MPTS. A new Elemental Live 1+1 Redundancy Group enables automatic creation of a secondary backup channel on a secondary node.
- Elemental Statmux now offers improved support for 1+1 Statmux node redundancy with coordinated failover. The secondary backup node can emit a redundant output continuously, or use output listening to detect failure of the primary node before taking over.
- SMPTE ST 2022-7 is now used for Elemental Live and Statmux internode communication for improved redundancy.
- New Elemental Statmux support for the following PIDs: scte35_esam_pid, smpte_2038_output_pid, ecm_pid, and arib_captions_pid.
- Elemental Statmux now has a new API.
- Controller only mode is now retired.

To use these new features, Statmux customers require at least two Elemental Live, two Conductor Live 3, and two Statmux nodes in a cluster. For information on how to upgrade your Elemental Statmux cluster, refer to **Statmux 2.17 to 2.20 Cluster Upgrade Procedure**. Contact AWS Elemental Support if you have additional questions.

Support for SMPTE ST 2022-6 inputs on 25GbE interfaces

AWS Elemental Live and Conductor Live 3 now support SMPTE ST 2022-6 as a new input type on L800 series appliances with 25 GbE interfaces.

Video
SD and HD sources (25, 29.97, 30, 50, 59.94, 60 fps) progressive and interlaced

Audio
PCM, Dolby AC3, Dolby EAC3

Ancillary data
Teletext, 608, 708, OP42, OP47, SCTE 104

To enable your 25 GbE interface to use SMPTE ST 2022-6

1. From the Elemental Live web interface, navigate to **Settings**, and then select **Network Devices**.
2. Select the icon that looks like a pencil next to the device that you want to enable.

Notes:

- Eth0 and Eth1 are not configurable for SMPTE 2110 or SMPTE 2022-6.
- For Conductor Live 3 redundancy, failover only works if both machines have the same devices configured.

3. Select the **SMPTE 2110 and SMPTE 2022-6 Enabled** check box, and then click **Save**.
4. Restart your Elemental services:

   From the web interface, go to the **Settings** tab and select **Stop service**. When the service stops, select **Start service**.

   OR

   From the command line interface (CLI), run:
   ```
   sudo service elemental_se restart
   ```

   OR

5. Reboot the machine

SMPTE 2022-7 Seamless Protection Switching for SMPTE ST 2110 and SMPTE ST 2022-6 inputs

Elemental Live now supports SMPTE 2022-7 seamless protection switching for SMPTE 2110 and SMPTE 2022-6 inputs. Elemental Live can now perform packet redundancy for SMPTE ST 2110 and 2022-6 inputs over two ports at once. This enables seamless failover between sources, as well as strong protection against lost packets. To configure SMPTE 2022-7 for a SMPTE 2110 input, use a single SDP file that describes the redundant inputs and specifies a secondary interface. To configure SMPTE 2022-7 for a SMPTE 2022-6 input, specify a secondary network location, secondary interface, and secondary IGMP Source for the redundant input.

Binary, Identical Reliable TS output destinations

Reliable TS outputs can now transmit data to two destinations, with each destination having its own stream ID and encryption information. The two destinations can have the same IP address and port, provided that the interface and stream ID are different.

Virtual input switcher

Elemental Live now allows video switching between up to seven program streams within a multi-program transport stream (MPTS). Elemental Live uses in-band SCTE 35 signals in coordination with the guidance of an external event signaling and management (ESAM) server to determine which program stream to switch to, and when. A new add-on pack is required to use this feature. Contact AWS Elemental Support for more information.

Dolby Vision enhancements

Elemental Live now includes the following enhancements for Dolby Vision:

- Dolby Vision LDP_SIDK_v1.1 support.
- Fixes for video range color squashing.
- Pass-through with Dolby Vision Profile 5 output. This is helpful when the input range is not properly identified as full.
- Stabilized MP4 output with Dolby level output signaling.
- HLS and TS output for Dolby Vision signaling.
- Color Corrector help in the interface warns about Full-Swing conversion.

Elemental Video Engine (EVE) 22 integration with Elemental Live

The latest EVE 22 was integrated with Elemental Live. EVE 22 includes video quality improvements and performance optimizations.

4Kp30 AVC Performance improvements

Additional encoder resources are allocated for 4Kp30 AVC encodes, which enables higher event densities on L84X and L88X series Elemental Live appliances.

DVB-sub selector filter

Elemental Live now enables you to filter DVB-subs using a caption selector.
The default behavior remains as it was: By default, all DVB-subs are passed on the input in pass-through mode. Now, if you deselect the new "Passthrough All DVB-Sub Captions" check box, only the DVB-sub that is associated with the caption selector is passed.

SCTE-35 messages with HLS DATERANGE variable

Setting the environment variable SCTE_HLS_DATERANGE_PASSTHROUGH to TRUE now reports unique SCTE-35 messages in the HLS manifest through the DATERANGE tag. This feature does not report duplicate SCTE35 messages.

There are some exceptions that are not configurable at this time:

- Content_Identification
- Program_Breakaway
- Program_Resume
- Program_Runover_Planned
- Program_Runover_Unplanned
- Chapter_Start
- Chapter_End
- Unscheduled_Event_Start
- Unscheduled_Event_End

Note that all SCTE-35 segmentation_type_ids can be decorated by setting the environment variable SCTE_HLS_DATERANGE_DECORATE_ALL to TRUE.

User password expiration duration

There is a new option to set user password expiration to 90 days. This is in addition to the existing one day, one week, two week, and one month options.

Release notes AWS Elemental Live 2.20.7 GA

Resolved issues

Key	Topic	Description
SOCK-36931; SOCK-36693	Outputs	There was an issue that caused streaming to local Amazon S3 storage to fail with a 403 error. This is now fixed.
SOCK-36875	Outputs	When DVB subs were missing PTS values, Elemental Live DVB subs could become out of sync. This is now fixed.
SOCK-36044	Outputs	Publishing to an endpoint in chunked transfer mode could cause playback to fail when using DASH for ultra-low latency streaming. This is now fixed.
SOCK-35976	Outputs	After the WebDAV server disconnected and was restored, DASH output could still fail to recover the stream. This is now fixed.

Known issues

Key	Topic	Description
SOCK-37013	Inputs – SMPTE ST 2110	There is sometimes a sync drift of up to .1 seconds between audio and video for Elemental Live SMPTE ST 2110 inputs.

Release notes AWS Elemental Live 2.20.6 GA

Resolved issues

Key	Topic	Description
SOCK-36832	Outputs; Statmux; CL3	The variable bitrate (VBR) check box was removed from the output transport stream settings page erroneously. This is now fixed, and the check box is once again present and functional.
SOCK-36823	Outputs	Previously, one failed endpoint statistics call resulted in a Zixi send error. It now takes three sequential failed endpoint statistics calls to trigger a Zixi send error and cause the link to reset and reconnect.
SOCK-36822	Outputs - HLS	Missing presentation timestamp (PTS) values could result in delayed captions. This is now fixed.
SOCK-36769	Inputs; Downgrade	Downgrading to version 2.18.1 or later of Elemental Live while simultaneously attempting to restore a database could cause the downgrade to fail. This is now fixed.
SOCK-36766	Inputs - SMPTE ST 2110; Audio	Issues with packet timestamps could cause audio to drop for SMPTE ST 2110 inputs. This is now fixed, and SMPTE ST 2110 inputs now require the source to be synchronized to precision time protocol (PTP).
SOCK-36737	Inputs - SMPTE	When an event is configured to use a SMPTE ST 2110 or SMPTE ST 2022-6 input with SMPTE ST 2022-7 redundancy, the network input could drop packets. This could lead to the per-event ingest log filling up the /opt disk partition. This is now fixed.
SOCK-36701	Inputs - Frame rates	Corrupt input sources could cause Elemental Live to determine framerate incorrectly, resulting the termination of the event. This is now fixed.
SOCK-36684	Inputs	Elemental Live sometimes failed to probe again after a network input degraded. This is now fixed.
SOCK-36674	Inputs - Failover	Differences between CPU and GPU HEVC NAL could cause problems with failover. An environment variable now forces CPU only systems to use 64x46 HEVC treeblocks so that NAL packet PPS and SPS values between CPU and GPU encodes match.
SOCK-36540	Inputs; Captions	Elemental Live events with SCTE-27 caption PIDs that didn't match between inputs sometimes caused validation errors. This halted events in a preprocessing state. This is now fixed.
SOCK-36465	Outputs	For distributed-encoding output-locked events that use UDP/TS outputs, if one of the events had an AAC audio output and the other did not, the PTS times between the two could be consistently off due to initial PTS calculations. These calculations are now updated, and the PTS values for configurations like this one now synchronize correctly.
SOCK-36377	Outputs - SMPTE ST 2022	Elemental Live now sets the FEC packet source port to be the same as the data packet source port for RTP inputs per SMPTE ST 2022-1-007

Key	Topic	Description
SOCK-36266	Outputs - HLS; Output locking	Previously, the #EXT-X-DISCONTINUITY HLS tag was placed a segment late for output locking workflows when decorating audio configuration discontinuities on remote encoders. This is now fixed. It now is consistently placed correctly across all output-locked encoders.
SOCK-36101	Outputs	An SNMP trap cannot be sent out if the event name contains a double byte character. To work around this, Elemental Live now replaces invalid ASCII-8BIT characters with ? for SNMP traps that use event names.
SOCK-34897	Captions	When running an event with teletext input and WebVTT output with "Pass Style Information" enabled, there were occasional extraneous characters present in the output. This is now fixed.
SOCK-34727	Event log	The XML REST API Elemental Live event status was not reporting values for <buffer_avg>, <buffer_max>, and <fill_msec>. This is now fixed.

Known issues

There are no new known issues in this version of AWS Elemental Live. Also see known issues in previous versions.

Release notes AWS Elemental Live 2.20.5 GA

Resolved issues

Key	Topic	Description
SOCK-36726	Outputs - SMPTE ST 2110	Downgrading to a previous version of Elemental Live with events that had SMPTE ST 2110 outputs could fail to retain video settings. This is now fixed.
SOCK-36635	Inputs - Audio	Elemental Live events that used a SMPTE ST 2022-6 stream with AC-3 audio as an input could crash during ingest if the first AC-3 audio frame parsed had an invalid AC-3 header. This is now fixed. The invalid AC-3 header is now discarded so that the audio stream continues to be probed until a valid audio frame is processed.
SOCK-36595	Outputs - MS Smooth	HTTP sometimes timed out after 30 seconds when publishing Microsoft Smooth (MSS) output to IIS servers/endpoints. This is now fixed.
SOCK-36385	Outputs; CL3	Elemental Live events in Elemental CL3 clusters sometimes failed over to a backup, but came back with events running that could not be stopped by CL3. This caused duplicate events to be published to customer endpoints. This is now fixed.
SOCK-35578; SOCK-35097	Time codes	The new environment variable FORCE_LTC_TO_UTC allows the forcing of LTC time codes to UTC.
SOCK-34876	Time zones	Web callback timestamps were inconsistent for assertions and de-assertions. This is now fixed by adjusting them to local time.
SOCK-25526	Inputs; CL3	The ZeroMQ library is updated to version 4.3.3 to address potential crashes in the web layer.

Known issues

Key	Topic	Description
SOCK-36737	Inputs - SMPTE	When an event was configured to use a SMPTE ST 2110 or SMPTE ST 2022-6 input with SMPTE ST 2022-7 redundancy, the network input could drop packets. This led to the per-event ingest log filling up the /opt disk partition. This is now fixed.

Release notes AWS Elemental Live 2.20.4 GA

Resolved issues

Key	Topic	Description
SOCK-36593	Captions	In some situations, motion graphics overlays and non-passthrough image captions (burn-in, SMPTE-TT, and CFF-TT) appeared backwards or upside-down for HD inputs. This is now fixed.

Known issues

There are no new known issues in this version of AWS Elemental Live. Also see known issues in previous versions.

Release notes AWS Elemental Live 2.20.3 GA

Resolved issues

Key	Topic	Description
SOCK-36367	Outputs – MPEG-2	Switching from a progressive input to an interlaced output sometimes caused a ghosting effect. This is now fixed.
SOCK-36344	Inputs – SMPTE ST 2022-6	In some cases, SMPTE ST 2022-6 sources with unexpectedly large gaps between end of active video (EAV) markers and start of active video (SAV) markers caused video to freeze while audio continued. This is now fixed.
SOCK-36324	Inputs – SCTE-35	In some situations, a shortened SCTE-35 segmentation descriptor caused rejection of subsequent correctly formatted segmentation descriptors. This is now fixed.
SOCK-36005	Outputs – Log files	In some cases, log files were inundated with messages about overwriting fragment start times, which did not belong in the log. This is now fixed, and these messages no longer appear in log files.
SOCK-34448	Inputs – Audio	When an upstream signal provider changed from PCM to Dolby E audio, mismatched audio tracks in the audio selector group could sometimes cause audio frames to drop, resulting in silence in the output and error messages in the log. This is now fixed.
SOCK-34145	Outputs – MS Smooth; Audio	Audio was not spliced at the correct locations relative to the video for some MS Smooth outputs. This resulted in mismatched audio and video. This is now fixed.

Known issues

There are no new known issues in this version of AWS Elemental Live. Also see known issues in previous versions.

Release notes AWS Elemental Live 2.20.2 LA

Resolved issues

Key	Topic	Description
SOCK-36430	Outputs - Frame rates	Previously, every frame in 59p/60p/50p was used to create interlaced fields in progressive to interlaced converted outputs. Elemental Live now produces better output for some progressive to interlaced workflows by interlacing output from the Frame Rate Conversion (FRC) with the progressive input. This helps conversions when the input frame rate is near the output field rate.
SOCK-36427	Outputs - Frame rates	Ancillary time codes were sometimes not parsing properly for frame rates greater than 30 fps. This is now fixed.
SOCK-36424	Inputs	The ProgramStart and ChapterStart markers were not correctly identified for durations of 0. This is now fixed.
SOCK-36419	Outputs - MS Smooth; HLS	For HLS output groups with ad markers enabled, MS Smooth outputs were incorrectly treated as sparse tracks, causing video to be discarded. This is now fixed.
SOCK-36417	Outputs - YouTube	Elemental Live now supports publishing of HLS URLs to YouTube.
SOCK-36414	Outputs - SCTE-35	Output locking now synchronizes SCTE-35 Program Transport Stream (PTS) values.
SOCK-36412	Inputs - Message log	Previously, multiple frequent "FrameSync: Unexpectedly long wait time calculated" messages displayed. To resolve this, Elemental Live now switches to limited logging in cases of log spamming.
SOCK-36354	Inputs - SMPTE ST 2110	When the Session Description Protocol (SDP) file contained a URL that was not valid, it could cause Elemental Live to fail during ingest. This is now fixed.
SOCK-36308	Inputs	The sdirecorder utility did not properly record 1080p or 4K input sources. This is now fixed.
SOCK-36226	Inputs	Previously, content containing frequent, long-duration avails exhausted the allocated memory before Elemental Live registered the need to purge. This caused a fatal error, which caused Elemental Live to stop emitting outgoing streams. This was fixed by allocating enough memory to support up to 2500 concurrent avails.
SOCK-36176	Inputs - Network	Elemental Live failed when it switched to a network input with a dirty signal. This is now fixed.

Resolved issues continued

Key	Topic	Description
SOCK-36146	Outputs - SMPTE ST 2110	Previously, the Real-time Transport Protocol (RTP) Payload Type was automatically set to 96 for all SMPTE ST 2110 outputs. This can now be set independently for each SMPTE ST 2110 output.
SOCK-36086	Outputs - Captions	Previously, the ancillary data line number was automatically set to 2047 for all SCTE 104 messages and CEA 608 E captions. These line numbers can now be set independently.
SOCK-35960	Outputs	Elemental Live could not see SEI messages, and this resulted in the absence of time codes in MS Smooth outputs. Setting the OUTPUT_LOCKING_ENABLE_INPUT_TIMECODE_PASSTHROUGH environment variable to true enables SEI data for MS Smooth outputs, which resolves this issue.
SOCK-35847	Inputs - SMPTE ST 2110; NMOS	When Elemental Live switched away from a running NMOS-controlled SMPTE ST 2110 input and then back again, the input failed. This is now fixed. Elemental Live is now able to return successfully with the settings intact.
SOCK-35779	Inputs	When running events with low frame rates, high CPU usage sometimes caused Elemental Live to fail. This is now fixed.
SOCK-35751	Outputs - SMPTE ST 2110; SCTE 104	When a SCTE 104 splice request message was sent by SMPTE ST 2110 output, it could cause an SDI time code error. Elemental Live now uses the system clock to resolve this issue.
SOCK-35743	Outputs - SMPTE ST 2110	There was a timing issue with SMPTE ST 2110-21 narrow sender profile support. This is now fixed by adding a small but critical offset in microseconds to meet the specifications expected by SMPTE ST 2110 timing constraints.
SOCK-35283	Outputs - Audio; Dolby-E	Previously, Dolby-E audio did not play on L800 series appliances. This was fixed by updating the Dolby-E Audio Decoder package to version 2.1.2.
SOCK-34732	Outputs	When the connection to the Azure origin was lost, Elemental Live could take up to 10 minutes to reconnect. The issue is now fixed, and reconnecting takes only a few seconds.
SOCK-34209	Outputs - Zixi	The Elemental Live event details page was missing Zixi Stream ID and Zixi latency configuration. This is now fixed.
SOCK-32279	Outputs; Statmux	Previously, channels were not assigned PIDs for DVB subtitles by default when an MPTS was first created. This resulted in an MPTS output bit rate of zero. This is now fixed.

Known issues

There are no new known issues in this version of AWS Elemental Live. Also see known issues in previous versions.

Release notes AWS Elemental Live 2.20.1 LA

Resolved issues

Key	Topic	Description
SOCK-36219	Inputs - HLS	When the HLS reader took too long to download segments, the real time buffer could fall behind. The HLS input cache size is now increased so that HTTP errors don't cause accumulating delay of segments. Additionally, a breadcrumb is added when the internal HLS buffer size grows to 100 segments.
SOCK-36217	Inputs -HTTP	Previously, HTTP input requests had a 30 second connect timeout, which was too long. HTTP input requests now have a 2 second connect timeout and a low speed limit timeout of 7 seconds.
SOCK-36216	Outputs - Output locking	During output locking resync, muxers ask output locking, "what should my state be at timecode T"? If the output locking algorithm fails to answer, a fallback algorithm answers. In this case, the fallback algorithm failed. This is now fixed.
SOCK-36212	Outputs - HLS	Previously, the filecache_duration for HLS outputs could be set below 50 seconds, which is not recommended. The minimum length for the filecache_duration is now set at 50 seconds.
SOCK-36144	Networking; firmware	Due to a firmware compatibility issue, 1GbE CU SFP+ modules weren't working on some L810, L820, and L840 SKUs. This is now fixed.
SOCK-36117	Inputs; Web interface; CL3	Using the REST API to modify the input of a running event sometimes caused a problem with input switching. This is now fixed.
SOCK-36048	Outputs; Web interface	Previously, the web interface allowed customers to save without warning if they removed an AWS Elemental Live event output stream without updating the output. This led to a generic "something went wrong" message that was confusing. To resolve this, an error now displays if an existing event's stream is removed without updating the output.
SOCK-35869	Outputs - HLS	Previously, AWS Elemental Live inserted the HLS tag EXT-X-DISCONTINUITY into the HLS media playlist one segment later than it should have. This is now fixed.
SOCK-35543	Inputs - Web interface	Previously, setting the Network Device Type to None versus setting it to Static erroneously yielded the same results, and alerts displayed when an Ethernet cable was removed even when the Network Device Type was set to None. There is now an Enabled check box on the network device form. Deselect this check box if there is not a network device, and you will not receive erroneous alerts.

Known issues

Key	Topic	Description
SOCK-36235	Inputs - Audio	There are unexpected audio drops at the switch points during networked input switching.
SOCK-36227	Outputs - SMPTE ST 2110; NMOS	Sending a REST command to the activate_nmos_output endpoint for NMOS-enabled SMPTE ST 2110 outputs can cause the endpoint to erroneously report a status of "Success" when repeating a command that previously failed.
SOCK-36225	Outputs - SMPTE ST 2110; NMOS	When sending a REST command to the set_smpte_st2110_destination endpoint for NMOS-enabled SMPTE ST 2110 outputs, AWS Elemental Live erroneously allows you to include a protocol when you configure a destination address. This is not valid. Do not include the protocol as part of the destination address. Correct destination address example: 239.255.255.255:5001 Incorrect destination address example: rtp://239.255.255.255:5001

Release notes AWS Elemental Live 2.20.0 LA

Resolved issues

Key	Topic	Description
SOCK-32863; SOCK-34739	Outputs – Network protocol	In some cases, the network protocol signal was blocked on reconnect, which caused the upstream encoder to underflow, which in turn blocked all other output that was using the same encoder. This is now fixed.
SOCK-35523	Outputs – Network protocol	In some cases, disconnecting a single network protocol could cause other outputs to degrade. This is now fixed.
SOCK-35750	Outputs	In some cases, if an event took longer than five seconds to shut down, it caused the encoder to crash. This is now fixed.
SOCK-35815	Outputs	In rare cases, Elemental Live crashed during inter-process communication. This is now fixed.
SOCK-35834; SOCK-35772	Outputs – SMPTE ST 2110	In some cases, stopping and starting a channel or rebooting the appliance caused NMOS channel configurations to be lost. This is now fixed. NMOS channel configurations now persist, regardless of stops, starts, or reboots.
SOCK-35972	Statmux; CL3	Statmux presets were removed from Elemental Live. MPTS configuration and management will be performed using Conductor Live 3 3.20.x and beyond for Elemental Live and Statmux 2.20.x and beyond.
SOCK-35975	Inputs; CL3	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.
SOCK-35978	Outputs – NMOS	In some cases, NMOS output did not appear when it was enabled. This is now fixed.
SOCK-36024	Outputs – PTP	Elemental Live now includes an enhancement that allows custom configuration changes to ptp4l.conf to be honored when PTP is enabled using the web interface.
SOCK-36035	Web interface	In some cases, Elemental Live erroneously issued a "CPU Alert: > 95%" notification every 30 days. This did not have an impact on the output, and is now fixed.
SOCK-36063	Outputs – SMPTE ST 2110	For SMPTE ST 2110 outputs, when a secondary interface was not specified, the NMOS sender activation failed. This is now fixed.

Known issues

There are no new known issues in this version of AWS Elemental Live. Also see known issues in previous versions.

Release notes for AWS Elemental Statmux 2.20.7 GA

Resolved issues

There are no new resolved issues in this version of AWS Elemental Statmux. Also see known issues in previous versions.

Known issues

There are no new known issues in this version of AWS Elemental Statmux. Also see known issues in previous versions.

Release notes for AWS Elemental Statmux 2.20.6 GA

Resolved issues

Key	Topic	Description
SOCK-36832	Outputs; Statmux; CL3	The variable bitrate (VBR) check box was removed from the output transport stream settings page erroneously. This is now fixed, and the check box is once again present and functional.

Known issues

There are no new known issues in this version of AWS Elemental Statmux. Also see known issues in previous versions.

Release notes for AWS Elemental Statmux 2.20.5 GA

Resolved issues

Key	Topic	Description
SOCK-36469	Statmux	Stopping a Multi Program Transport Stream (MPTS) could cause Elemental Statmux to become unresponsive as it continued attempting to run. This is now fixed.

Known issues

Key	Topic	Description
SOCK-36700	Statmux - Log	A critical log message "Failed to send update MultiplexProgram message to MME" erroneously displays. This message is coming from Statmux, but there is no impact to Statmux customers.

Release notes for AWS Elemental Statmux 2.20.4 GA

Resolved issues

See Reintroduction of support for MPTS and Statmux in the New features section for resolved issues related to the reintroduction of AWS Elemental Statmux.

Known issues

There are no new known issues in this version of AWS Elemental Statmux. Also see known issues in previous versions.

Release notes for AWS Elemental Statmux 2.20.3 GA

Resolved issues

See Reintroduction of support for MPTS and Statmux in the New features section for resolved issues related to the reintroduction of AWS Elemental Statmux.

Known issues

There are no new known issues in this version of AWS Elemental Statmux. Also see known issues in previous versions.

Release notes for AWS Elemental Statmux 2.20.2 LA

AWS Elemental Statmux is reintroduced in this version.

Resolved issues

Key	Topic	Description
SOCK-36204	Statmux	In some cases, the monitors that trigger alerts in Statmux were not in place. This is now fixed.
SOCK-32279	Outputs; Statmux	Previously, channels were not assigned PIDs for DVB subtitles by default when an MPTS was first created. This resulted in an MPTS output bit rate of zero. This is now fixed.
SC-3630	CL3; Statmux	In some cases, MPTS did not pick up streams from the backup encoder until the failed primary encoder returned. This is now fixed.
SC-1721	CL3; Statmux	In some cases, pressing Start on the MPTS Performance page did not refresh the screen. This is now fixed.

Known issues

Key	Topic	Description
SOCK-36376	Web interface	On the Elemental Statmux Network Devices page, "SMPTE 2110 and SMPTE 2022-6 Enabled" erroneously displays. This field is not configurable in Statmux.

AWS Elemental Conductor Live 3 introduction

AWS Elemental Conductor Live 3 is a management system for controlling AWS Elemental Live and AWS Elemental Statmux.

These release notes describe features and known issues for AWS Elemental Conductor Live version 3.20.x.

Version 3.20.x of AWS Elemental Conductor Live is compatible with AWS Elemental Live 2.20.x and AWS Elemental Statmux 2.20.x and above. You must upgrade your AWS Elemental Live and AWS Elemental Statmux nodes to the 2.20.x release in order to control them in a cluster using for AWS Elemental Conductor Live 3 version 3.20.x.

AWS Elemental Conductor Live version 3.20.x communicates to the nodes in the cluster via the 2.20.x APIs.

Node-based redundancy

- AWS Elemental Conductor Live 3 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 3 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 3 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 3 requires profiles to create channels.
- AWS Elemental Conductor Live 3 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 3 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 3 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 3 provides MPTS creation and channel participation via the AWS Elemental Conductor Live 3 interface.
- The MPTS created by AWS Elemental Conductor Live 3 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 3 and displayed in the interface.
- AWS Elemental Conductor Live 3 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.

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 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.

Conductor Live 3 release notes 3.20.7 GA

Resolved issues

There are no new resolved issues in this version of Conductor Live 3. Also see the known issues in previous versions.

Known issues

There are no new known issues in this version of Conductor Live 3. Also see the known issues in previous versions.

Conductor Live 3 release notes 3.20.6 GA

Resolved issues

Key	Topic	Description
SOCK-36832	Outputs; Statmux; CL3	The variable bitrate (VBR) check box was removed from the output transport stream settings page erroneously. This is now fixed, and the check box is once again present and functional.
SC-4243	CL3	An SNMP trap cannot be sent out if the event name contains a double byte character. To work around this, Elemental Live now replaces invalid ASCII-8BIT characters with ? for SNMP traps that use event names.

Known issues

There are no new known issues in this version of Conductor Live 3. Also see the known issues in previous versions.

Conductor Live 3 release notes 3.20.5 GA

Resolved issues

Key	Topic	Description
SOCK-25526	Inputs; CL3	The ZeroMQ library is updated to version 4.3.3 to address potential crashes in the web layer.
SOCK-36385	Outputs; CL3	Elemental Live events in Elemental CL3 clusters sometimes failed over to a backup, but came back with events running that could not be stopped by CL3. This caused duplicate events to be published to customer endpoints. This is now fixed.
SC-4245	CL3 web interface	There was a defect in the web interface that caused profile duplication of SMPTE ST 2022-6 input to fail. This is now fixed.
SC-4244	Inputs - CL3	Previously, it was not possible to enter parameters for all SMPTE ST 2110 and SMPTE ST 2022-6 input fields. This is now fixed.

Known issues

There are no new known issues in this version of Conductor Live 3. Also see the known issues in previous versions.

Conductor Live 3 release notes 3.20.4 GA

Resolved issues

See the New features section for resolved issues related to AWS Elemental Conductor Live 3. Also see the resolved issues in the previous version.

Known issues

There are no new known issues in this version of Conductor Live 3. Also see the known issues in previous versions.

Conductor Live 3 release notes 3.20.3 GA

Resolved issues

See the New features section for resolved issues related to AWS Elemental Conductor Live 3. Also see the resolved issues in the previous version.

Known issues

There are no new known issues in this version of Conductor Live 3. Also see the known issues in previous versions.

Conductor Live 3 release notes 3.20.2 LA

Resolved issues

Key	Topic	Description
SC-4207	Outputs	There was an issue that prevented the successful creation of profiles with Apple HLS external outputs. This is now fixed.
SC-4194	Web interface	The Elemental Conductor Live 3 web interface displayed an incorrect SDI label in some locations. This is now fixed.
SC-4131	Web interface	In some cases, the play button and pause button disappeared from the web interface for a few seconds after starting a channel. This is now fixed.
SC-3630	CL3; Statmux	In some cases, MPTS did not pick up streams from the backup encoder until the failed primary encoder returned. This is now fixed.
SC-3131	Web interface	The table below the performance graph in the MPTS web interface is improved.
SC-1721	CL3; Statmux	In some cases, pressing Start on the MPTS Performance page did not refresh the screen. This is now fixed.

Also see the resolved issues in the previous version.

Known issues

There are no known issues in this version of Conductor Live 3. Also see the known issues in previous versions.

Conductor Live 3 release notes 3.20.1 LA

Resolved issues

Key	Topic	Description
SOCK-36117	Inputs; Web interface; CL3	Using the REST API to modify the input of a running event sometimes caused a problem with input switching. This is now fixed.

Also see the resolved issues in the previous version.

Known issues

There are no known issues in this version of Conductor Live 3. Also see the known issues in the previous version.

Conductor Live 3 release notes 3.20.0 LA

Resolved issues

Key	Topic	Description
SOCK-35975	Inputs; CL3	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.
SOCK-35972	Statmux; CL3	Statmux presets were removed from Elemental Live. MPTS configuration and management will be performed using Conductor Live 3 3.20.x and beyond for Elemental Live and Statmux 2.20.x and beyond.
SOCK-35726	Inputs – MPTS; CL3	The bitrate range for an MPTS channel is now calculated by the type of event that feeds the MPTS.

Also see the resolved issues in the previous version.

Known issues

There are no known issues in this version of Conductor Live 3. Also see the known issues in the previous version.