

RELEASE NOTES

AWS ELEMENTAL SERVER AND CONDUCTOR FILE,
VERSION 2.14



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This guide applies to AWS Elemental Server & AWS Elemental Conductor File version 2.14

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INTRODUCTION

About AWS Elemental Server

AWS Elemental Server enables fast and reliable video processing for file-based workflows. The appliance or software-based solution performs simultaneous, faster-than-real-time conversion of media files into mezzanine deliverables, on-demand assets, and adaptive bitrate outputs optionally with encryption for primary and multiscreen devices. AWS Elemental Server integrates easily into existing video workflows and evolves with emerging technologies to create content for premium viewing experiences while maximizing revenue opportunities.

Software Upgrades

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

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

Note that some features may be available only in certain models of AWS Elemental Server.

RELEASE NOTES, 2.14

Essential Notes for AWS Elemental Server 2.14

Changed Default Behavior

COHO-3212 Changed behavior for GPU jobs using the AVC (H.264) encoder and SVQ -2. The following combination of settings is no longer valid:

- SvQ: -2
- Resolution: 1080P
- Codec: MPEG-4 AVC (H.264)
- Reference frames: 3
- GOP Reference B-Frame: enabled
- Profile Level: 4

If you submit a job on a GPU system with this configuration of settings, AWS Elemental Server returns an error.

COHO-3213 AWS Elemental Server now supports a new SVQ level for the codec HEVC (H.265). SVQ settings select encoding features based on performance. Higher values use fewer system resources and allow more streams to be encoded. SVQ 0.5 is optimized for 4K HEVC outputs, and is now the system default for HEVC jobs, in order to maintain performance. On upgrade to version 2.14, existing HEVC jobs will be updated to use SVQ .5, to maintain performance. To improve quality, set SVQ to 0 for HEVC jobs. HEVC jobs using SVQ 0 on CPU may experience a significant reduction in performance.

COHO-3302 The default behavior interaction between dialnorm settings and audio normalization has changed. Previously, if a job had both audio normalization and dialnorm settings in place, audio normalization behavior would override dialnorm. With this change, if dialnorm is set to a value other than zero, AWS Elemental Server now uses the dialnorm setting from the encoder settings on the output, even if you enable audio normalization with correction.

If you don't specify a value for dialnorm, and you set input audio to DTS Express, AWS Elemental Server passes through the dialnorm value from your input file.

If you don't specify a value for dialnorm and you enable Audio Normalization and Correct Audio, then AWS Elemental Server uses the value you specify for Target LKFS for dialnorm.

KARP-2085 AWS Elemental Server now writes additional avail-related lines to job logs. Previously, AWS Elemental Server only wrote these job log lines if you set the environment variable LOG_AVAIL_DETAIL to true.

Removed Features

- COHO-1435 The AWS Elemental Server clustering feature has been removed. When upgrading to Server 2.14, you must dissolve any existing cluster. When you do, the management server becomes a standalone server.

For more information or assistance with your upgrade, contact AWS Elemental Support.

- COHO-2433 The anti-alias scaler option in transcoding jobs is no longer supported. If you submit a job with anti-alias enabled in the UI or with the `anti_alias` parameter set to true via the API, AWS Elemental Server will use the normal scaler instead.

- COHO-2837 The `USE_LEGACY_HTTP_INPUT` environment variable is no longer supported.

- COHO-3001 Starting with AWS Elemental Server 2.14, the software is no longer supported on hardware using NVIDIA K10 GPUs and pre-avx2 CPUs (such as Sandy Bridge, Ivy Bridge). VM versions of 12 or higher or ESXi 6.5+ are required for AVX2 to be passed through to the VM.

For information about hardware upgrade options, contact your account manager.

- COHO-3169 The Nielsen SDK no longer supports breakout codes for PCM to ID3 Tagging (job > Nielsen Configuration). Therefore, in AWS Elemental Server, the Breakout Code field has been replaced by a new Enabled field that you can check to enable Nielsen workflows. The Distribution ID field is still supported.

Product Enhancements in AWS Elemental Server Version 2.14

- COHO-23 AWS Elemental Server now supports audio normalization using any of the following four algorithms:
- ITU BS.1770-1
 - ITU BS.1770-2
 - ITU BS.1770-3
 - ITU BS.1770-4

- COHO-1269 Added support for encoding outputs with a combination of hard telecine and interlaced sequences. Output frames are adaptively converted from the input per frame as follows:
- interlace 29.97 or 30 fps -> interlace 29.97 or 30 fps (passthrough)
 - hard telecine 29.97 or 30 fps -> hard telecine 29.97 or 30 fps (passthrough)
 - progressive 23.98 or 24 fps -> hard telecine 29.97 or 30 fps (telecine insertion)

- COHO-1609 Transcoding workflows can include AVC inputs to AWS Elemental Server with mixed hard- and soft- telecine. The AVC decoder now supports soft to hard telecine conversion. This is similar to the existing MPEG-2 decoder, providing greater accuracy in input clipping and increased smoothness when using framerate conversion.

This release also adds hard telecine insertion to the HEVC decoder.

- COHO-2495 AWS Elemental Server now supports Dolby Atmos passthrough, Atmos signaling, and Atmos encoding.
- Dolby Atmos encoding is supported using Channel Based Immersive (CBI) audio. Use of this feature mandates 2-pass encoding. To use this feature, provide input audio 16 PCM monophonic channels, specified as follows: L, R, C, LFE, Ls, Rs, Lrs, Rrs, Lw, Rw, Ltf, Rtf, Ltm, Rtm, Ltr, Rtr. Input channels can be combined into an interleaved 9.1.6 PCM buffer which the Dolby Digital Plus with Joint Object Coding will encode as static objects. ADM or DAMF sources are not supported.
- COHO-2692 Dolby Atmos is now supported in DASH and MP4 outputs.
- COHO-3221 HLS audio-only outputs are now supported in both raw and MPEG2 Transport Stream formats. Video output is no longer required.
- COHO-3301 AWS Elemental Server has added a set of controls to manage DDS metadata specification and image sizing for DVB-Sub in TS outputs. These metadata specify a display window inside of which the DVB-Sub image will be contained on playback and in which caption height and width can be specified.
- The DVBSUB_INSERT_DDS environment variable is no longer supported.
- COHO-3367 Infrastructure Upgrade: the NVIDIA GPU driver has been updated.

Other Changes to AWS Elemental Server in Version 2.14

- COHO-2095 Fixed an issue causing audio glitch with Dolby E-AC3 streams.
- COHO-2679 Fixed an issue causing MOV sources with empty entries in an edit list to produce out-of-sync audio. Empty entries in the ELST box will now result in silent frames added to the output track.
- COHO-3009 Fixed an issue causing no audio on output using certain MOV/MP4 inputs. Empty edit list entries in source video and audio tracks are now handled to provide blank frames for the specified duration at the specified media time.
- COHO-3011 MXF sources without footer partition byte offset in the Header Partition Pack can now be demuxed.
- COHO-3160 Fixed an input clipping issue for MXF files with open GOP structure when starting timecode is on I-frame.
- COHO-3187 Fixed an issue outputting Nielsen ID3 tags when the input audio codec is AAC.
- COHO-3246 Fixed an issue causing SCC to MXF embedded captions to be unreadable when 708 upconvert was enabled.
- COHO-3303 Fixed an issue causing silence at the beginning of some outputs created from input-clipped MXF files with PCM audio.

- COHO-3308 Local path destinations containing illegal characters are now safely parsed.
- COHO-3319 Resolved an issue in which vertical line numbers for specific entries in the STL were not being honored. STL captions without max col and row will now use expected row placement.
- COHO-3344 Resolved an issue with input clipping on input sources with embedded timecodes where the timecode crosses over midnight. Input clipping is not supported with start times that begin more than 12 hours after the initial input timecode.
- COHO-3361 MXF caption channel remapping now correctly outputs A/53 in MPEG-2 608/708 embedded captions.
- COHO-3379 Fixed output SRT timestamps for jobs that transcode embedded captions to SRT where a caption is active at the boundary from one input to the next.
- COHO-3384 When more than one input is used, frame capture will now emit the proper frame.
- COHO-3386 Input clipping works accurately on transport streams with closed or open GOP streams.
- COHO-3397 Fixed a bug which could cause encoding to deadlock when multiple audio tracks were configured on a job.
- COHO-3426 Dolby Digital audio input jobs may now passthrough dialnorm settings.
- COHO-3481 Fixed an issue causing jobs to error if output destinations used both a network path (starting with "https://", "s3://") and illegal special characters in the file_input, name_modifier, or extension.
- Note: If the '#' character is used in a network path destination, AWS Elemental Server will now consider it the start of a "fragment identifier". To use a literal '#' in the destination such as "s3://", you must escape it as "%23". This is not recommended, per "Characters to Avoid": <https://docs.aws.amazon.com/AmazonS3/latest/dev/UsingMetadata.html#object-keys>
- COHO-3544 Fixed a GPU runtime error when inserting blank frames in video sync according to empty ELST entries on MP4 source files.
- COHO-3567 When Burn-In captions and DVB-Sub captions were in any of the outputs for the same job, fixed an issue causing one set of settings to overwrite the other.
- KARP-1675 Fixed an issue with multiple WebVTT HLS tracks where multiple tracks were marked as the DEFAULT. Now, only the first track will be set to DEFAULT=YES, subsequent tracks will be set to DEFAULT=NO.
- KARP-1798 WebVTT outputs no longer contain non-monotonic timestamps when input clipping is used.
- KARP-1860 HLS and CMAF audio and text segments will now be written with appropriate content-type metadata.

KARP-1908	Fixed an issue that could cause long-running Microsoft Smooth output jobs with TTML captions to hang when writing outputs to S3.
KARP-2252	I-frame manifests now include the #EXT-X-PLAYLIST-TYPE:VOD header, in compliance with the Apple HLS Authoring Spec.
KARP-2295	Cache-Control header is no longer added on HLS and DASH manifests.
KARP-2347	Apple HLS specifications require sidecar captions to be WebVTT format only. This is now enforced.
KARP-2382	Fixed an audio sync issue that impacted some 23.976 FPS inputs when using input clipping.
KARP-2401	RGB RAW / FOURCC('r', 'a', 'w', ' ') input will now transcode correctly to color output.
KARP-2415	Deinterlacer Force Mode is now observed in all setting configurations.
KARP-2468	Resolved an issue with MP4 inputs causing jobs to error when first entry in the video track ELST is an empty edit with abnormally long duration.
KARP-2472	Resolved an issue that caused incorrect MIME type to be specified in mpd files when target caption type is TTML.

Issues Resolved in AWS Elemental Server 2.14

COHO-3354	Fixed an issue causing missing caption characters for SCC to 708 MXF (ancillary and embedded caption) output workflows, when input clipping is used.
COHO-3444	HEVC (H.265) encoder now enforces the limit on BinCountsInNALunits from section 7.4.3.10 of the HEVC specification.
COHO-3492	HLS output with alternate manifest destination on S3 will now correctly be generated.
COHO-3521	Fixed an issue causing jobs to fail if S3 watch folder contained any characters not safe for use in a URI path (e.g., a space character).
KARP-1751	AWS Elemental Server will set MimeType for WebVTT caption subtitle adaptation sets in DASH manifests to "text/vtt," as required by DASH-IF player, rather than "application/ttml+xml."
KARP-2010	HLS and CMAF audio and subtitle outputs will now be created with appropriate content-type metadata.
KARP-2242	Resolved an issue causing transport stream input clipping to be off by 1 frame when input timecode source is ZEROBASED.

Upcoming Feature Removals

- COHO-3114 Starting with version 2.15, AWS Elemental Server will no longer support HDS or HDS encryption, including removal of HDS Output Groups, Flash Access DRM, pHDS encryption, and pHLS encryption on HLS outputs.
- COHO-3358 Starting with version 2.15, the option to select the Ultraviolet (UVU) container type in transcoding jobs will no longer be supported. Any legacy jobs with this option enabled will default to require the user to select a new container type.
- COHO-3610 Starting with version 2.15, AWS Elemental Server will no longer support Amazon S3 path-style URI (example: `http(s)://s3.amazonaws.com/<bucketname>/key`). The virtual-hosted style (also known as V2) which uses the bucket name as part of the domain name is preferred (example: `://<bucketname>.s3.amazonaws.com/key`). Customers should update their applications to use the virtual-hosted style request format when making S3 API requests before September 30, 2020 to avoid any service disruptions. Customers using the AWS SDK can upgrade to the most recent version of the SDK to ensure their applications are using the virtual-hosted style request format.

Virtual-hosted style requests are supported for all Amazon S3 endpoints in all AWS regions. S3 will stop accepting requests made using the path-style request format in all regions starting September 30, 2020. Any requests using the path-style request format made after this time will fail.

If there is any reason why your application is not able to utilize the virtual-hosted style request format, or if you have any questions or concerns, please reach out to AWS Support.

Previously Identified Known Issues

Audio

- SOCK-22543 AAC SBR signaling is incorrect in MPEG-2 TS with LATM/LOAS (Low overhead Audio Transport Mux / Low Overhead Audio Stream) transport. The output is playable although the audio quality may not have optimal quality.
- KARP-2389 AAC Audio output is cropped by 2 frames and out of sync depending on audio norm and offset settings.

Captions

- COHO-1151 In jobs that have multiple input ancillary caption selectors, some caption channels are not created in the output.

- SOCK-13956 If the minimum I-frame spacing option is used with the CPU AVC (H.264) encoder then the GOP markers needed for ARIB compatibility won't work. Avoid using Min I-Frame spacing in ARIB application for the CPU H.264 encoder.
- SOCK-17447 SCTE-27 in some instances produces zero-length (or no) captions.
- SOCK-20574 There is an issue with AWS Elemental Server running on VM servers with limited CPU resources. When running two simultaneous jobs that convert DVB-Sub to TTML captions, and if the inputs have parity errors, the VM node may enter into delayed shutdown. Workarounds include running one job at a time, providing clean content for processing, or running the VM on a server with more CPU resources.
- COHO-2155 If an input has TTML captions and the captions are converted to SMPTE-TT, the captions may produce empty SMPTE-TT tracks.
- SOCK-23150 If an input has DVB Sub captions and the captions are converted to SMPTE-TT, the captions that span HLS segments have incorrect first time-spans referenced in the SMPTE-TT.

Conductor

- COHO-3659 Uploading .tgz conductor license file through UI causes an error. For more information regarding a workaround for this issue, see <https://community.elemental.com/docs/DOC-1327>.

DRM and Encryption

- COHO-918 When you duplicate a job that uses Adobe Flash Access encryption, you will need to re-enter your destination username and password before creating your new job.
- SOCK-22735 When creating encrypted HLS outputs of an asset, including one output with VOD mode (Archive), the VOD asset may not play. This is a result of non-VOD outputs using a sliding key and the VOD asset using a fixed key. Contact AWS Elemental Support for more details.

General

- COHO-944 Attempting to upgrade a failed worker node via the Conductor File UI does not return an error. The target node fails to upgrade and the Conductor File UI and logs do not reflect the failure.
- COHO-633 Deleting a failed mount point from Conductor File with not stop the Conductor File/Server nodes from constantly attempting to reconnect to it.
- COHO-1755 The system may not reconfigure failed worker nodes when the user instructs it to via the web interface (UI). This can impact AWS Elemental Server worker nodes that are configured in a cluster controlled by AWS Elemental Conductor File.

HDR

- SOCK-23572 If a job using HDR was created on a node running 2.9 software, then when you update to 2.10 or greater you must reconfigure the job. The location of the HDR tags (such as `blue_primary_x`) has changed from `stream_assembly/video_description/` to `stream_assembly/video_description/h265_settings`.

Inputs

- SOCK-23571 Reading .png assets from S3 has been observed to take multiple seconds. At the time of release the root cause of the excess latency has not been identified.
- SOCK-23580 URI protocol field for S3 inputs is case sensitive. Example `s3://...` works, whereas `S3://...` fails with a 1010 error.

Log Files

- SOCK-23564 Running a large number of small jobs creates a large number of log files. You should periodically check the log file directory and remove log files for completed tasks.

Motion Graphic Overlay

- SOCK-23557 With motion graphic overlay (motion image inserter), PNG images from an S3 bucket are not being inserted.
- SOCK-23567 For .png assets to be used with the motion image inserter, every .png image must have the same resolution.

Outputs

- COHO-3359 When an HLS job is running, the status page shows the HLS output destinations without the forward slashes in the URL.
- COHO-2154 ESAM support is intended for TS or Archive (TS) outputs only. ESAM should not be configured in conjunction with packaged outputs such as HLS.
- COHO-1786 The system will fail to properly de-mux some MXF files on slow networks. This failure does not generate any errors.
- COHO-3647 Assets encoded with QVBR into mp4 have average bitrate set to max bitrate in the `btrt` atom.

SCTE-35 Ad Avails

SOCK-23482 Avails durations are supported up to a limit of 13 hours. Avoid avail durations longer than 13 hours as they can cause inaccurate avail state transitions.

Security

SOCK-22495 SSL fails to enable when running configure script with “--config-auth --https”.

XDS Insertion

SOCK-23204 XDS insertion works for embedded sources, but not for SCC or MXF ancillary inputs. This issue is known to affect AWS Elemental Server versions 2.8.4, 2.9.x, and 2.10.