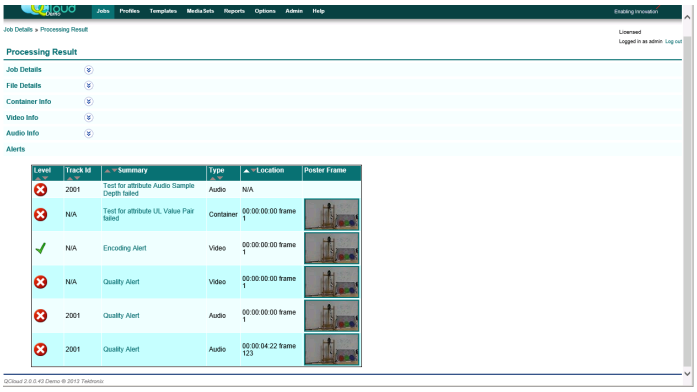
Cloud Media Workflow Automated QC

QCloud Datasheet



Features and benefits

- No upfront CapEx cost
- Instant scalability always ensuring perfect sizing to workflow
- Metered usage billing ensures you only pay for what you use
- QC content from Amazon S3 location
- EBS optimized to ensure persistence of data across instance reboots
- Provides Exception-based Technical Compliance to Enable QC Teams to Focus on Problem Content and Subjective Requirements
- Performs Consistent and Thorough Checks of Incoming Video Files against User-defined Templates
- Ensures compliance to regulatory requirements such as U.S. CALM Act, EBU R128, Canadian Closed Caption mandates, U.K. OfCom & Japan NAB Photo-Sensitive Epilepsy (PSE)
- Ensure Quality of All Audio Tracks Contained in the File Simultaneously
- Automatically corrects audio loudness and peak audio level issues to increase workflow efficiency and reduce CapEx/OpEx
- Logs Errors, Informs Automation Systems, plus Programmable Actions such as E-mail User Alert, Quarantine and Move Files
- Integrates with Video Servers, Automation and MAM/DAM systems via Web-services (SOAP) API
- Web-based Multiuser Interface
- Unlimited Scalability from Stand-alone (single instance) to Enterprise (multi-instance cluster for higher parallel processing and high availability)

Tests Include

- Encoding Errors, Syntax Errors, Format, Bit Rate, Quantization, Frame Rate, GOP (Length, Bit Rate, and P-frame) Tests, Aspect Ratio, Color Format, Buffer Analysis, File Size, Correct PID, CableLabs VoD Compliance, Number of Video and Audio Streams, Number of Audio Channels/Tracks
- Video Playtime, Signal Levels, Gamut, Luminance, Chrominance, Black Frame Detection, Video Quality (Blockiness), Freeze Frame Detection, Field Order, Quantization, Cadence, Missing Frame, Tape Artifact Detection, Color Bar Detection, AFD Detection
- Audio Playtime, Peak and Minimum Levels, Audio Loss, Clipping, Silence, Mute, Test Tones, Dolby-E Guard Band Interval Testing, Multitrack Audio Testing, Peak Audio-level Reporting, Audio Loudness Testing per ATSC A/85 and EBU R128, PPM Audio Ballistics, Loudness Tests across Multiple Tracks, Automated Audio Loudness & Level Correction using Dolby DPLC engine
- Perform All Audio Tests on All Audio Tracks in a File with 1 Pass
- Closed Caption, Teletext, and DVB Subtitles: Presence and Standards Compliance
- Timecode Continuity, Integrity, Synchronization, and Comparison
- Photosensitive Epilepsy (PSE) Testing per U.K.'s OfCom & Japan NAB specifications

Formats

- Format – All Frame Sizes, Bit Rates, and Resolutions for SD/HD and Mixed Workflows
- Container – MPEG TS/PS, MXF, GXF, MP4, QuickTime, ASF (Windows Media), 3GPP, AVI, LXF, Apple HLS, Microsoft Smooth Streaming
- Video – MPEG-2 (IMX, XDCAM), H.264/AVC, MPEG-4, H.263, VC-1/WMV, DV/DVCPro25/50/100/HD, Apple ProRes 422/422(HQ)/422(Proxy)/422(LT)/444, AVC-Intra (High10 Intra, High422 Intra, High444 Intra, and CAVLC Intra), JPEG-2000, DNxHD, Raw YUV and RGB
- Audio – MPEG-1/2, AAC, HE AAC (LOAS/LATM), PCM (AES, BWF, AIFF, WAV), DV, WMA, Dolby D / AC-3, Dolby E, SMPTE 302M

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Applications

- Broadcasters and Video Service Providers – Ensuring quality, compliance, and playability of audio and video after encoding, at ingest, after editing, after transcoding, and before playout for terrestrial, satellite, cable, internet, and video-on-demand content
- Archiving – Ensuring quality, compliance, and playability of archive content before archiving, while in archival or prior to retrieval from the archive.
- Content Providers – Ensuring post production and aggregated content has been correctly encoded and conforms to the required quality and format

With QCloud you can ensure that your content is ready for delivery

Quality control of file-based video that may be ingested from different sources and encoded at different bit rates, formats, and compression standards for SD/HD, VOD, and IPTV delivery presents considerable operational challenges. File-based video must be quality checked for:

- **Correct Encoding Syntax**: At the digital level, the audio and video must be correctly encoded without errors in accordance with the compression standard, so that it plays out correctly at the playout server and at the customer's STB/playout device
- **Correct Encoding Parameters**: The audio and video bit rates, GOP structure, video color-space, color depth, frame size, frame rate, aspect ratio, and quantization levels must be correct
- **Correct Baseband and Quality Levels**: The analog parameters of signal levels, luma, chroma, gamut, quality levels of black frames, video quality (blockiness), loss of audio, audio clipping, and video and audio playtime, and verification of audio loudness and peak level
- **Correct Ancillary Data**: Closed Captions, Teletext, DVB Subtitles, and Timecode
- **Regulatory Compliance**: US CALM Act, EBU R128, Canadian CC mandates, U.K. & Japanese PSE regulations

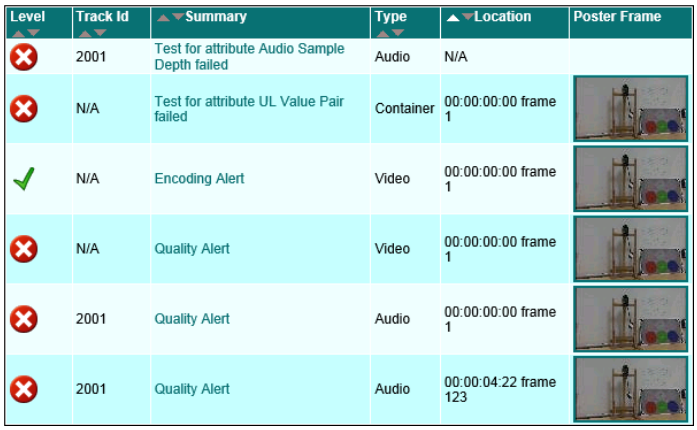
Manual inspection can playout, watch, and listen but is subjective and cannot look inside the encoding to check that the correct syntax and parameters have been used. Moreover, manual inspection is prohibitively expensive, especially given today's increasing content growth.

QCloud solves these problems, and can be easily integrated with Automation and Asset Management systems using the ***CeriTalk*** API; thus feeding them with data required to automatically decide on next workflow steps or drawing attention to the few assets that need review by experts.

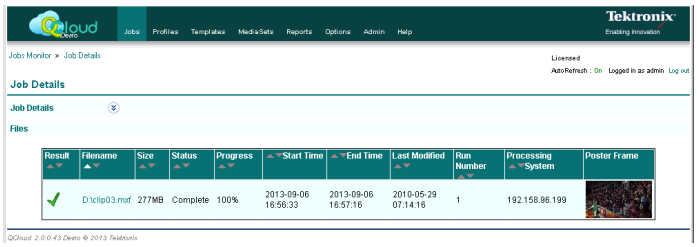
The XML-based test templates can be exchanged between QCloud systems, and applied as the definition of the required test standards between suppliers and broadcasters to establish Service-level Agreements and reduce costly churn (rework of content).

QCloud's Partner Network is an ever-growing partnership program with over 50 companies working together on integrated solutions that work straight out of the box and deliver higher values by removing interoperability hurdles.

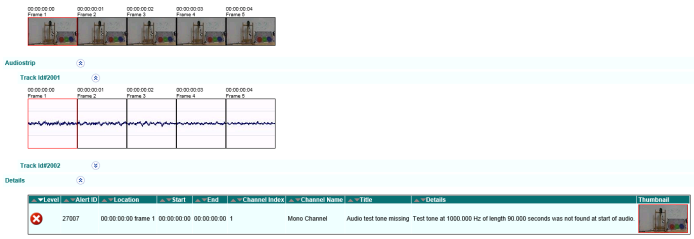
User interface



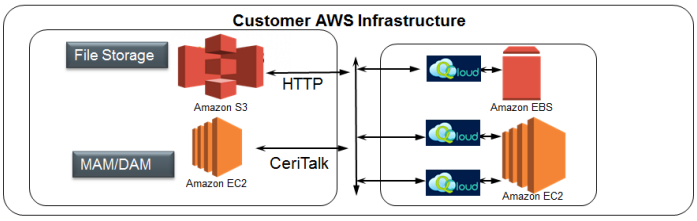
Easy-to-use Web browser interface shows job status results at top level as red light / green light



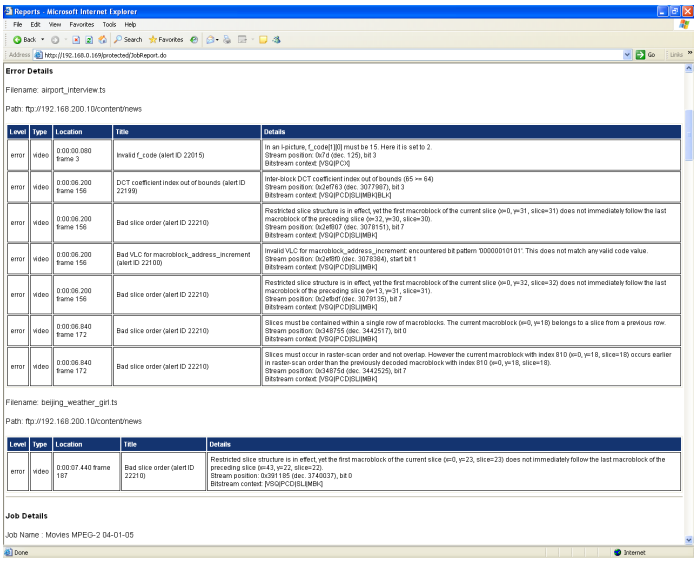
Click to get job details



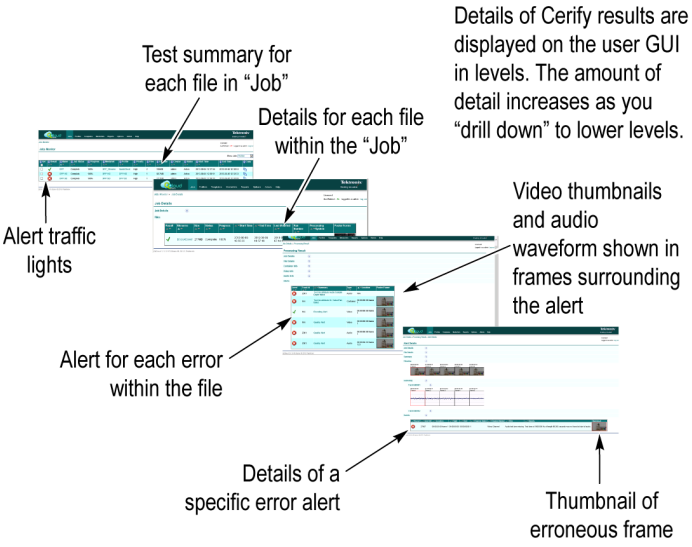
Click to get details of stream errors



Customer AWS infrastructure



Report by job, type, date range, file name, etc.



See and Solve test results

Characteristics

Standards supported

Format – All frame sizes, bit rates, and resolutions for SD/HD and mixed workflows.

Container – MPEG TS/PS, MXF, GXF, MP4, QuickTime, ASF, 3GPP, AVI, LXF, Apple HLS, Microsoft SS.

Video – MPEG-2 (IMX, XDCAM), H.264/AVC, MPEG-4, H.263, VC-1/WMV, DV/DVCPro25/50/100/HD, Apple ProRes 422/422(HQ)/422(Proxy)/422(LT)/444, AVC-Intra (High10 Intra, High422 Intra, High444 Intra, and CAVLC Intra), JPEG-2000, DNxHD, Raw YUV and RGB.

Audio – MPEG-1/2, AAC, HE AAC (LOAS/LATM), PCM (AES, BWF, AIFF, WAV), DV, WMA, Dolby D / AC-3, Dolby E, SMPTE 302M.

Test templates and levels are user-controlled and include:

- Container-level Transport System Tests
  - Correct Standard and Integrity
  - File size, Bit Rate, Playtime, Number of Video and Audio Streams in Transport Container
  - Packet Size, CableLabs VOD Compliance
  - Signalling and Integrity of Closed Captioning, Teletext, DVB Subtitles
  - Timecode Continuity, Integrity, and Synchronization
  - MXF Metadata testing
  - Apple HLS and/or Microsoft SS ABR content readiness testing for OTT services
- Video Tests
  - Correct Encoding Standard, Profile, and Syntax Checks for Encoding Errors
  - GOP Structure, Quantization, Frame Rate, Bit Rate, Frame Size, Interlaced/Progressive, Aspect Ratio
  - Baseband Tests including Gamut Levels, Luma, Chroma, Signal Levels, Letterbox/Pillarbox, Playtime
  - Color Depth, Color Format (4:2:0, 4:2:2), Copyright
  - Black Frames (Lead in, lead out, and during the video), Video Quality (Blockiness), Frozen Frames, Field Order, AFD, Missing Frame, Quantization, Cadence, Tape Artifacts
  - PSE testing per U.K. OfCom and Japan NAB standards
- Audio Tests (simultaneously on all audio tracks)
  - Correct Encoding Standard, Profile, and Syntax Checks for Encoding Errors, Dolby-E Guard Band Interval
  - Sample Rate, Bit Rate, Playtime
  - Number of Channels, Peak and Minimum Signal Levels
  - Audio Silence, Clipping, Mute, Test Tones
  - PPM Audio Ballistics
  - Long and Short Audio Loudness Tests for All Supported Audio Codecs per ITU-R BS.1770-2 Standard (including different audio loudness tests on different channels)
  - XDS- Content Advisory tests
  - True Peak-level Tests for All Supported Audio Codecs
  - Audio Loudness Tests across Multiple Tracks (i.e. situations where grouped channels are spread across tracks)
  - Automated audio loudness correction across all audio tracks using Dolby Dialog Intelligence
- Action Templates and Reporting
  - Copy or Move File on Success or Error
  - E-mail Alerts with Test Reports
  - Web-based On-screen Job Reports and Detailed Drill-down
  - Text/HTML/PDF Query Reports of All Files in the Database
- SOAP based Web-services, ***CeriTalk*** Automation API
- Multiple User Templates and Profiles configurable for Different Content Types and Sources
- XML-based Templates can be Imported and Exported
- Automatic Reprocessing of Previously Tested Files after Rework

System requirements

Single media asset processing

A single media file can be processed with optimal performance on an Amazon EC2 Extra-Large instance type with the following specifications:

- Memory – 15 GB
- EC2 Compute Units: 8 (4 virtual cores with 2 EC2 compute units each)
- Instance Storage: 1,690 GB
- Platform: 64-bit
- I/O Performance: High
- EBS-Optimized Available: 1,000 Mbps
- API Name: m1.xlarge

Two media asset processing

Two media files can be processed with optimal performance on an Amazon EC2 2Extra-Large instance type with the following specifications:

- Memory – 30 GB
- EC2 Compute Units: 26 (8 virtual cores with 3.25 EC2 compute units each)
- Instance Storage: EBS only
- Platform: 64-bit
- I/O Performance: High
- EBS-Optimized Available: 1,000 Mbps
- API Name: m3.2xlarge

Ordering information

Please contact your Tektronix Sales Representative to understand how QCloud may be customized for your specific workflow needs and content volume.

CE

Tektronix is registered to ISO 9001 and ISO 14001 by SRI Quality System Registrar.

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For Further Information. Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit **www.tektronix.com**

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