Cisco AnyRes Video on Demand Encode Node

Product Overview

Cisco® AnyRes Video on Demand (VoD) helps expand the revenue potential of video content for service providers, media distributors, and content providers by generating high-quality VoD assets that are compatible with any device. By eliminating the manual bottlenecks typically involved with high-volume, file-based transcoding workflow, which prepares video files for set-top boxes, PCs, and mobile devices, Cisco AnyRes VoD helps lower operating expenses (OpEx). It also produces high-quality assets for every screen with exceptional performance, maximizing advertising opportunities without compromising the viewing experience.

When a video file is ready to be transcoded from one format to another, the Cisco AnyRes VoD encode node performs the job. First, the node decodes the incoming source file. Then it makes new assets that are ready for playback on a set-top box, connected television, PC, or mobile device. Advanced parameters tell the encoding engine which video, audio, and wrapper format to use, as well as what quality settings and profiles are desired.

The encode node is required for file-based transcoding with Cisco AnyRes Video on Demand. Adding Encode Nodes increases the capacity of the platform to simultaneously output files.

Features and Benefits

The Cisco AnyRes VoD encode node:

- Offers multiple output codecs and wrapper formats, including H.264, MPEG-2 (CBR), Transport Stream, and adaptive bit rate (ABR)
- Provides the highest quality mobile, web, standard-definition and high-definition encoding from file sources in less than real time
- Is a licensed component of Cisco AnyRes VoD; one encoding node is required per physical or virtual server
- Scales easily with no downtime
- Is not required for digital rights management (DRM)-only, quality control-only, or pre-encoding analysis-only workflows

Platform Support and Compatibility

Cisco AnyRes Video on Demand is optimized for use on Cisco Unified Computing System™ (Cisco UCS™) hardware, such as on the B200 M3 blade server. This provides customers with a single system that encompasses:

- Network: Cisco Unified Fabric
- Industry-standard x86 computing
- Storage with access options
- Virtualization optimization
- Unified management model
- Dynamic resource provisioning

- Efficient scaling
- Lower cost, with fewer servers, switches, adapters, and cables
- Lower power consumption
- Fewer points of management

Licensing

License requirements for Cisco AnyRes Video on Demand vary by node, as outlined in Table 1.

Table 1.   License Requirements

Node	License Requirements
Client	Unlicensed, but required initially for setup and to operate Cisco AnyRes VoD; can be bypassed by the Cisco AnyRes VoD server API
Server	Required for all installations; one license per server or blade
Encoding	Transcoding and digital rights management (DRM)
Analysis	Pre-encoding analysis and "decision logic"
Post-encoding	Quality check, offline packaging, and delivery
Enhanced transport stream	Generates CableLabs®-compliant files
AC-3 Dolby	Encoding AC-3 files; pass-through does not require license
Common format indexing	Generates files compatible with Cisco Videoscape™ Distribution Suite Origin Server (VDS-OS) on-demand packaging
IP mode	Puts Cisco AnyRes VoD into "online enhancement" mode for Cisco VDS Optimization Engine (VDS-OE) solution

Product Specifications

Table 2 lists product specifications for Cisco AnyRes Video on Demand Encode Node.

Table 2.   Product Specifications

Inputs	
Video	- Resolutions up to 2048 x 1080 - MPEG-2 elementary, program, and transport streams - QuickTime (all codecs supported by QT 7.2 and later, including Apple ProRes 422, DVCPRO HD, Avid DNxHD*, and IMX MPEG-2*) - H.264, all profiles - MXF (OP1A and OP-atom) - GXF (SMPTE-360M) - AVI - WMV - AVISynth scripts - Motion and Photo JPEG * With installation of third-party decoders
Audio	- AVI, QT, MPEG-2 Program and Transport Streams, and AVISynth scripts with embedded audio tracks - Multichannel AVI - WAV - Extensible WAV - AC-3 - Advanced encryption standard (AES) (SMPTE-302M) - Audio Interchange File Format (AIFF)
Preprocessing	- Deinterlacing - Video scaling - Cropping

	• Letterboxing
	• Hard Telecine
	• 10- to 8-bit dithering
	• Color space conversion
	• High-frequency noise reduction
	• Inverse telecine
	• Watermark overlay
	• Time code burn-in
	• AviSynth scripts
Outputs	
Encode modes	• Single and dual pass
	• Constant bitrate (CBR)
	• Variable bitrate (VBR) constrained
	• VBR unconstrained
	• VBR quality
Audio and video	• Windows Media Video (VC-1 and SMPTE-421M) Simple, Main, and Advanced profiles
	• Windows Media Audio Standard and Professional (up to 8 channels)
	• VC-1 and H.264 Smooth
	• Flash On2 VP6
	• MPEG-4 part 2 Simple and Advanced profiles
	• H.264 and AVC Baseline, Main, and High profiles up to Level 5.1
	• MPEG-2 Main and High profiles up to 4:2:2 color space
	• AC-3 audio 2 and 6 channels
	• AAC audio (LC and HE AAC)
	• MPEG-1 Layer II Audio
	• MP3 audio
	• WAV LPCM audio
Data	• Thumbnail generation (BMP, JPEG, and PNG)
	• Captioning
	• Synchronized Accessible Media Interchange (SAMI) for Windows Media and VC-1
	• Open captions
	• Vertical blanking interval (VBI)
	• Closed captioning CEA 608 for AVI, MPEG-2, VC-1, and H.264
	• Closed captioning CEA 708 for AVI, MPEG-2, VC-1, and H.264
	• Time code
	• Society of Motion Picture and Television Engineers (SMPTE) time code
	• Presentation time
Post-processing	• Digital rights management (DRM)
	• Common Index Format (CIF) for Cisco VDS-OS
	• AviSynth script management
	• User-defined post-job process
	• ASF-to-TS conversion

System Requirements

Table 3 lists system requirements for Cisco AnyRes Video on Demand Encode Node.

Table 3.   System Requirements

Minimum system requirements	• Hex-core Intel® Xeon® processor, 2.7 GHz or faster*
	• Windows Server 2008 R2
	• 16 to 32 GB RAM
	• 500 GB hard drives, when local disks are used
	* Faster processors reduce job time; additional processors increase density
Also supported	• vSphere v5.0 or later

Warranty Information

Find warranty information on Cisco.com at the Product Warranties page.

Ordering Information

To place an order, visit the Cisco Ordering Home Page and use the information in Table 4. To download software, visit the Cisco Software Center.

Table 4.   Ordering Information

Product Name	Part Number
Cisco AnyRes Video on Demand Encode Node	R-ARM-SWK-510-DN=, L-ARM-ENCD-VOD=

Cisco Services

Cisco Services brings together the people, processes, tools, and partners to accelerate service providers' success by using their IP Next-Generation Network (IP NGN) architectural platforms. Cisco Services is focused on promoting business outcomes through network, services, and operational transformation. Through a collaborative approach and tailored engagements, Cisco Services can help accelerate time to market, mitigate risk, reduce cost through improving operational efficiencies, and help assure the user experience.

Cisco Services' approach and differentiation in services comes from a heritage of network capabilities and a wealth of experience in providing solutions to service providers in all sectors around the world. That is reflected in over 20 years' involvement in the market with services and solutions that are strategically aligned with those of the service provider. Cisco Services has also made a massive research and development commitment to the service provider community, developing innovative roadmaps and solutions to keep the sector ahead of the competition.

For More Information

For more information about the Cisco AnyRes Video on Demand Encode Node, visit http://www.cisco.com/en/US/products/ps11799/index.html, or contact your local account representative.