harmonic

ProMedia™ Xpress
Multiscreen Transcoder and Packager

HIGHLIGHTS

- High-performance transcoding and packaging on a standard IT computing infrastructure

- Harmonic MicroGrid parallel computing for faster-than-real-time workflows

- AVC and HEVC codec support

- SD, HD and Ultra HD format support

- Dynamic farm management via Harmonic WFS for seamless scaling of computing resources

- Discrete transcoding and packaging processes for highly efficient delivery

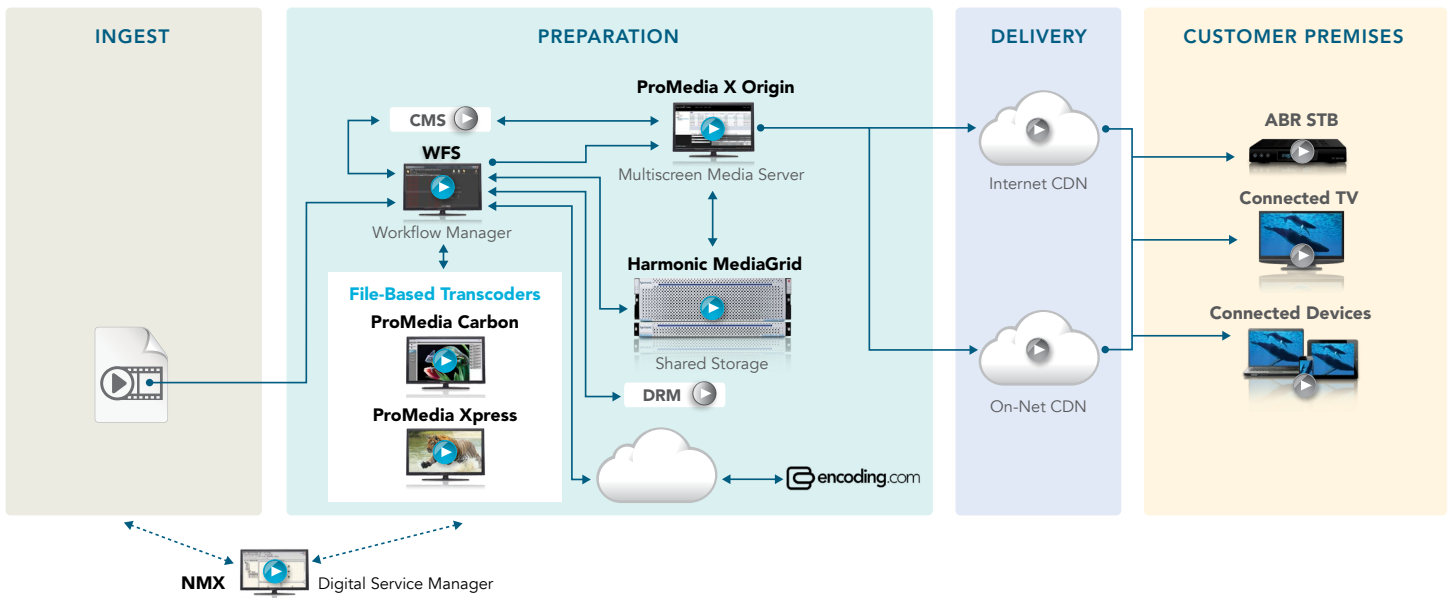- Cloud-ready model supports cost-effective scaling of processing

Harmonic's ProMedia™ Xpress provides faster-than-real-time transcoding and packaging of SD, HD and UHD video-on-demand assets with superior video quality.

As service providers strive to deliver VOD content to smart TVs, PCs, tablets and mobile devices, they face pressure from content providers to meet specific performance requirements for each adaptive streaming format used, whether Apple® HTTP Live Streaming (HLS), Microsoft® Smooth Streaming (MSS), Adobe® HTTP Dynamic Streaming (HDS) or MPEG-DASH. Speed is essential. The service level agreements to which service providers adhere are driven by advertising, with revenue levels tiered according to the lag between the original broadcast and the time-to-access through VOD services. Viewer satisfaction is equally crucial, as consumers now expect a high-quality viewing experience on all of their devices.

ProMedia Xpress alleviates these pressures by enabling high-performance file transcoding and packaging for a broad range of multiscreen applications. Managed via Harmonic's WFS™ file-based workflow engine, the ProMedia Xpress software solution allows content owners and service providers to significantly increase content hours delivered while adhering to processing timetables and video quality targets in a cost-effective and scalable manner.

ProMedia Xpress employs Harmonic's MicroGrid™ parallel-computing technology to achieve a dramatic improvement in transcoding performance over stand-alone processing platforms. The inclusion of technology originally developed for the ProMedia Package multiscreen stream packaging system, and seamless integration with the ProMedia X Origin multiscreen video server, enable a complete file-based, scalable workflow that provides the operational integrity required for demanding 24/7 VOD environments.

Harmonic File-Based Multiscreen Workflow Featuring WFS and ProMedia Xpress

Maximizing Performance
ProMedia Xpress can run on any Windows-based server, as well as on virtual machines or in the cloud. The software is also available on a ProMedia application server, which leverages its Intel® multi-core, multi-threaded computing architecture to achieve remarkable transcoding speed. MicroGrid parallel-computing technology splits large transcoding jobs into thousands of tiny ones, each of which is completed concurrently, removing the bottlenecks associated with traditional transcoding architectures. Utilizing this innovative technology, ProMedia Xpress can scale effectively to provide superior transcoding performance without the need for custom computing hardware.

Optimizing Processing
Integrating transcoding and packaging functionality in the same application allows multi-bitrate assets to be encapsulated with the utmost flexibility and efficiency for all multiscreen delivery ecosystems, including HLS, MSS, HDS and MPEG-DASH. ProMedia Xpress treats transcoding and packaging as separate processes, allowing users to transcode a piece of content once, store it as a mezzanine file, and then package it multiple times, thereby reducing repetitive processor-intensive tasks. With the ability to store assets in an intermediate stage, users minimize the work involved in repackaging content as delivery standards and protocols change.

Seamless Scaling
Designed for high-volume, multiformat OTT delivery applications, ProMedia Xpress is optimized to generate multiple high-quality streams of adaptive bitrate H.264 and H.265 assets simultaneously, resulting in faster-than-real-time workflows. The application can grow from a single node to many nodes under the management of WFS, making it easy to meet volume demand as requirements evolve. As part of a complete multiscreen ecosystem, the WFS open API also allows Xpress to integrate with a wide variety of DRM and CMS vendors.

Protecting Infrastructure Investment
Harmonic application servers allow users to achieve exceptional transcoding throughput with a limited equipment footprint. ProMedia Xpress also delivers a pathway for regularly improved transcoding productivity by taking advantage of ongoing CPU and memory-access performance gains. As such, the ProMedia multiscreen processing infrastructure offers the high level of investment protection demanded by today's service providers.

World-Class Service and Support
Harmonic stands behind ProMedia Xpress with comprehensive service and support programs, including system design, service deployment, technical support and network maintenance. World-class service plans and a global network of flexible and responsive support professionals help ensure your ability to deliver outstanding "anytime, anywhere, any-device" viewer experiences.

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FEATURES

Baseband Operations	High-quality deinterlacer High-quality scaler Frame rate converter Color space correction
User-Selectable Filters and Tools	Audio channel mixer (including downmixer) Crop Logo insertion
Audio Channel Mapper	Map incoming audio channels and tracks to outgoing channels 5.1 and 7.1 to stereo downmixing

INPUT FORMATS

Video	F4V GXF Harmonic Spectrum Image Sequences JPEG 2000 LXF MPEG-2 MPEG-4 MXF ProRes Quantel QuickTime VOB Windows Media
Audio	Dolby® Digital (AC-3) Dolby Digital Plus (E-AC-3) MPEG-1 Layer II AAC-LC HE-AAC v1 & v2 SMPTE 302M
Metadata	Closed Captions: A/53 Teletext PID DVB Subtitling PID Splicing signaling: SCTE-35

OUTPUT FORMATS

Containers	TS MP4
Video	H.264 H.265
Video Resolutions	Up to 2160p60
Audio	AC-3 (stereo, 5.1 and 7.1 surround) E-AC-3 (stereo, 5.1 and 7.1 surround) MPEG-1 Layer II AAC-LC HE-AAC v1 & v2
Metadata	Closed Captions Teletext PID DVB Subtitling PID WebVTT

ABR STREAMING PROTOCOLS

Apple HLS
MSS
Adobe RTMP & HDS
MPEG-DASH

DRM SUPPORT

PlayReady 1.0 – Smooth Streaming	Piksel, INSIDE Secure, Irdeto, Verimatrix, Xstream, Nagra
PlayReady 2.0 – Smooth Streaming	INSIDE Secure
PlayReady – HLS	Irdeto, Tvinci, Piksel, INSIDE Secure
PlayReady – MPEG-DASH	Piksel, InsideSecure
Native - HLS	Verimatrix, INSIDE Secure, Piksel, Axinom
Widevine – MPEG-DASH	Piksel
Marlin - HLS	Tvinci
Secure Player – HLS/Smooth Streaming	Discretix
Secure Player – MPEG-DASH	CastLabs

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