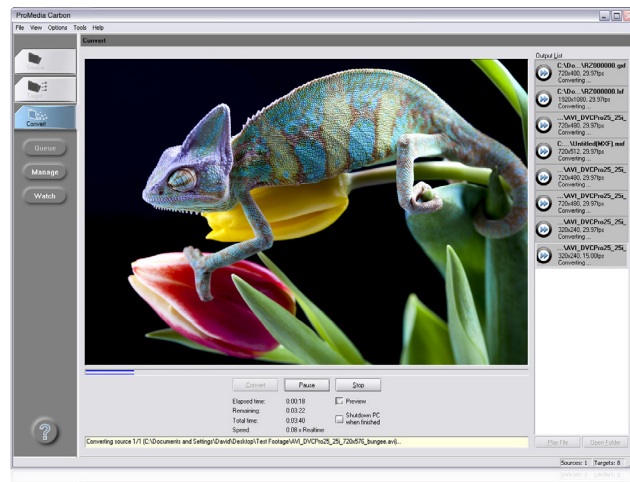# ProMedia™ Carbon

FILE-BASED TRANSCODER

Powered by Harmonic's Rhozet® technology, ProMedia™ Carbon is a file-based transcoding solution that enables the conversion of media to a massive array of acquisition, editing, broadcast, web and mobile formats. The software-based application provides high-performance, scalable and cost-effective transcoding for a broad range of video production and distribution environments, from specialized studios to enterprise-scale installations. It also performs a number of critical operations, including SD/HD conversion, PAL/NTSC conversion, logo insertion, color space conversion, color correction, closed-caption extraction and more. ProMedia Carbon includes an open API that allows for the creation of custom workflows or third-party applications.

Breadth of Format Support

ProMedia Carbon provides the ability to transcode from virtually any media format to every media standard in use today. Supporting all major SD and HD formats, the application is continually updated to accommodate new formats and ensure the user's ability to meet evolving content production and distribution requirements.

Intuitive User Interface

Featuring an easy-to-use interface that enables complete control over every aspect of the transcoding process, ProMedia Carbon simplifies the ability to convert files into any number of target formats, each with a unique set of operations and filters applied. For example, you can burn in a logo and timecode on a review format while applying special cropping to a mobile format.

Automated Operation

ProMedia Carbon can be run in a fully automated mode with support for batch processing, local watch folders and automatic FTP transfers. Intelligent transcoding performance increases productivity by easily identifying source formats and automatically transcoding them to the desired destination formats.

Scalable Transcoding

For large transcoding tasks, multiple ProMedia Carbon nodes can be configured as a transcoding farm under the control of Harmonic's WFS™ file-based workflow engine. WFS manages job distribution, prioritization, load balancing, FTP transfers, status monitoring and job notification.

XML-Based SDK

ProMedia Carbon can be controlled directly via an XML-based SDK provided with the software. Every aspect of the transcoding process can be controlled by the SDK, including source/target destinations, transcoding parameters, filtering, compositing, ad insertion, titling, notifications, etc. y, this next-generation server powers new revenue-generating services while delivering low total cost of ownership.

APPLICATIONS

- File-based transcoding software for production and multiscreen video content preparation
- Broad format support
- Intuitive user interface
- Automated operation
- Scalable transcoding
- XML-based SDK

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Broadcast

ProMedia Carbon is used to convert from the format provided by the Content Delivery Network to formats needed within the broadcast facility. Content from the server can be converted directly to a playout format, or first be converted into an editing format. After editing, the finished program is then converted again for broadcast playout.
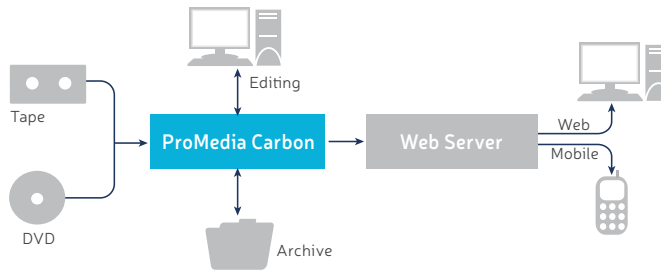
Webcasting

In a webcasting environment, ProMedia Carbon is used to capture content directly from tape or DVD and then to convert it into a master digital format for storage in the archive. This provides maximum quality and flexibility for conversion to web formats. Content is pulled from the archive as needed, transcoded into multiple final delivery formats, and then pushed to the web server.
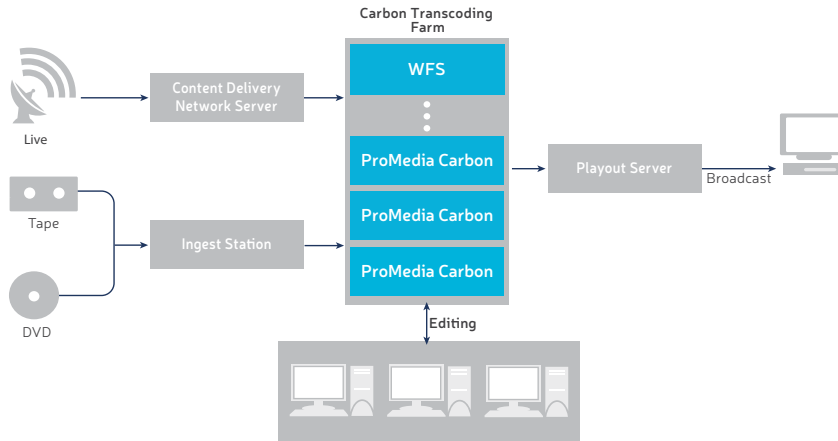
Workgroup

Transcoding among a workgroup can be centralized into a transcoding farm of multiple ProMedia Carbon engines under the control of WFS. Featuring an extensive API, WFS can manage the complete video asset transformation process by integrating additional third-party and Harmonic processing nodes.

HIGHLIGHTS

- Broadcast
- Webcast
- Workgroup
- Production

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SPECIFICATIONS

SUPPORTED VIDEO CODECS

MPEG-1	DV25, DV50, DV100, DVCPRO
MPEG-2	DPS
MPEG-4	DivX
H.263	JPEG 2000
H.264	DNxHD, AVC-Intra
VC-1	Image Sequences
Flash	Windows Media, RealVideo

SUPPORTED AUDIO CODECS

Dolby Digital (AC-3)	AAC
Dolby Digital Plus (E-AC-3)	AMR-NB
Dolby E	Windows Media Audio
PCM	MPEG-1 Layer II, MP3
RealAudio	

BASIC OPERATIONS

Frame size conversion	PAL/NTSC conversion
Frame rate conversion	SD/HD conversion
Color space conversion	Cropping
Aspect ratio conversion	Key-frame extraction
Interlace/de-interlace	Multiple target outputs
Telecine/inverse telecine	Batch processing

VIDEO FILTERING

Fade in/out	Rotate
Median	Black/white correction
Blur	Color correction
Sharpen	Gamma correction
NTSC-safe	Temporal noise reduction
Deblocking	Motion compensated temporal filter

SUPPORTED MEDIA CONTAINERS

AVI	LXF, GXF
QuickTime	WMV, WMA, ASF
HDV	VOB
MXF (OP1a, OP-Atom)	3GPP
MPEG-2 PS, MPEG-2 TS	3G2
WAV, Broadcast WAV	Microsoft Smooth Streaming (H.264, VC-1)
Apple HTTP Live Streaming	

SUPPORTED SYSTEMS

ATSC, DVB, CableLabs	Quantel sQ
Panasonic P2	Avid MediaStream
Sony XDCam	Apple Final Cut Pro
Harris Nexio, Leitch VR	Adobe Premiere Pro
Grass Valley Profile, K2	Grass Valley Edius
Harmonic Spectrum	

ADVANCED OPERATIONS

Compliance checking	Logo insertion
Timecode imprint	601/709 color space support
Subtitle/CC imprint	Optional video capture board support
XML controllable titler	Remote job submission
Metadata transport/conversion	Watch folder automation
Line 21/CC conversion	Segment extraction/insertion
CEA 608 to 708 caption conversion	Teletext, STL handling

AUDIO FILTERING

ITU 1770 Normalize	Volume
Low-pass	Dynamic range compressor
Fade In/Out	

SYSTEM REQUIREMENTS

Recommended Operating Systems	Windows® Server 2008 R2 (64-bit) Windows 7 (64-bit)
Supported Operating Systems (in order of most to least recommended):	Windows Server 2012 R2 (32/64-bit), Windows Server 2008 R2 (32/64-bit), Windows 7 (32/64-bit), Windows XP SP3 (32/64-bit), Windows Server 2008 R1 (32/64-bit), Windows Server 2003 R2 (32/64-bit).
Processor	Intel® or AMD® 3.0 GHz or faster Memory: 2 GB minimum, 4+ GB suggested Note: faster processors, more processing cores and more memory will increase performance
Media Viewer	QuickTime 7.6.8