

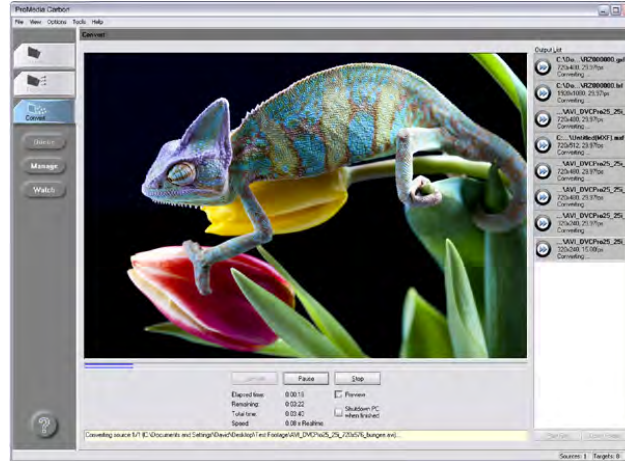
# ProMedia Carbon

FILE-BASED TRANSCODER



## HIGHLIGHTS

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



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

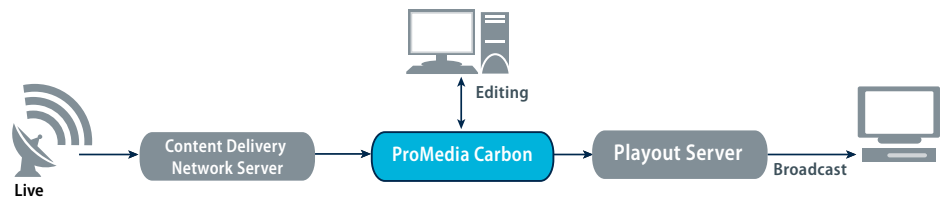
For large transcoding tasks, multiple ProMedia Carbon nodes can be configured as a transcoding farm under the control of Harmonic's WFS™ file-based workflow engine. WFS manages job distribution, prioritization, load balancing, FTP transfers, status monitoring and job notification.

### 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.

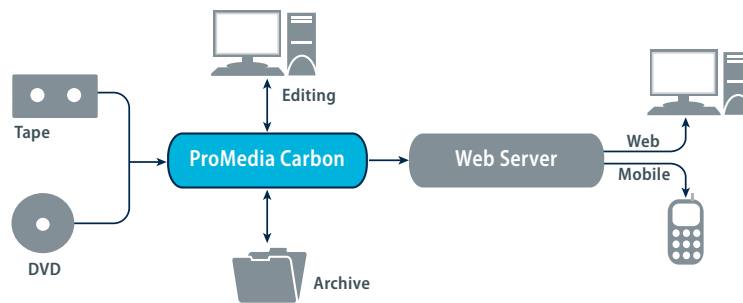
## APPLICATIONS

- Broadcast
- Webcast
- Workgroup
- Production



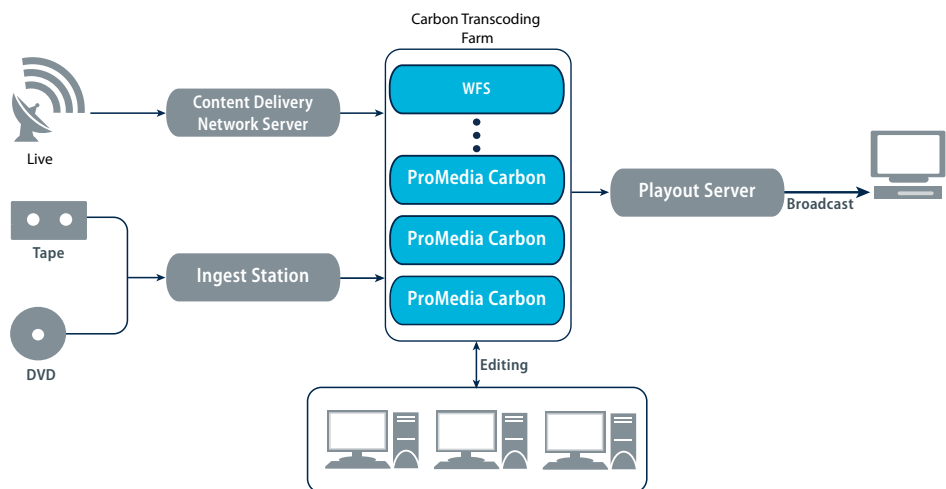
### BROADCAST

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.

## SUPPORTED VIDEO CODECS

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

## SUPPORTED AUDIO CODECS

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

## BASIC OPERATIONS

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

## VIDEO FILTERING

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

## 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 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). Note: running in a virtual OS is not officially supported. Contact Support for specific information.
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

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## SUPPORTED MEDIA CONTAINERS

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

## SUPPORTED SYSTEMS

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

## ADVANCED OPERATIONS

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

## AUDIO FILTERING

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