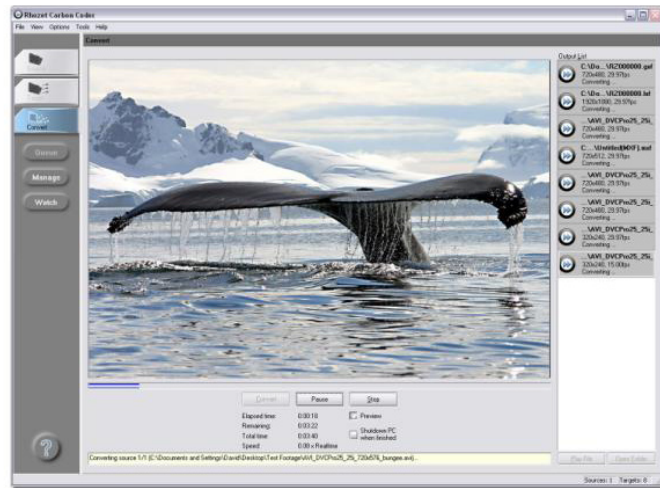


HIGHLIGHTS

- File-based transcoding software
- Intuitive user interface
- Automated operation
- Scalable transcoding
- XML-based SDK

Carbon Coder™ is a file-based universal transcoding application that facilitates the transfer of media between acquisition, editing, playout, archive, Web, mobile and more. Supporting all major formats, Carbon Coder is continually updated to accommodate new formats. Carbon Coder can run as a stand-alone application or as part of a multi-node, fully-automated rendering farm under the control of Carbon Server or the Rhozet Workflow System (WFS). As part of the transcode process, Carbon Coder handles a wide array of critical operations including SD/HD conversion, PAL/NTSC conversion, logo insertion, color space conversion, color correction, closed-captions extraction and more. Carbon Coder can be run via its user interface or via an XML-based API that is included with the product.



**Intuitive User Interface** - Carbon Coder's intuitive interface gives you complete control over every aspect of the transcoding process. Simultaneously convert a single file 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. Save settings as profiles to re-use on future transcoding projects.

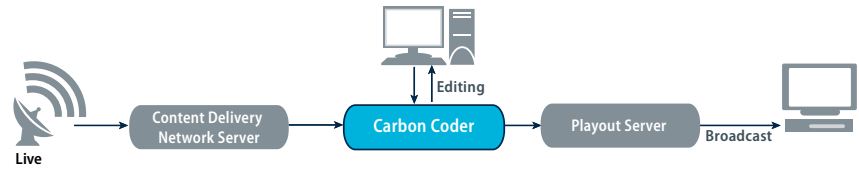
**Automated Operation** - Carbon Coder can be run in a fully automated mode. Watch folders and FTP transfers can be configured to automatically transcode any files that are moved to specified locations, and then the results can be placed into designated locations. For example, a single Carbon Coder workstation can service a group of editors, taking completed projects and converting them into the appropriate format for a playout server.

**Scalable Transcoding** - For large transcoding tasks, multiple Carbon Coders can be configured as a transcoding farm, under the control of Carbon Server or the Rhozet Workflow System software. Carbon Server and WFS manage job distribution, prioritization, load balancing, FTP transfers, status monitoring and job notification. All interaction with the server software is through an administrative Web interface that can be accessed remotely, from across the office or around the world.

**XML-based SDK** - Carbon Coder 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.

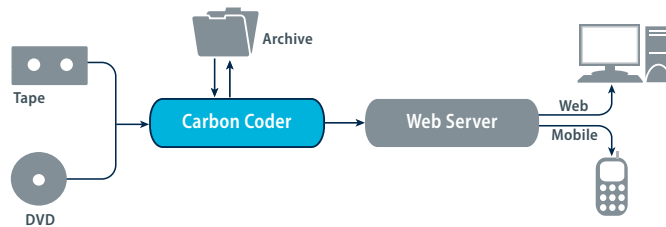
- Broadcast
- Webcast
- Workgroup

**EXAMPLE CONFIGURATIONS**



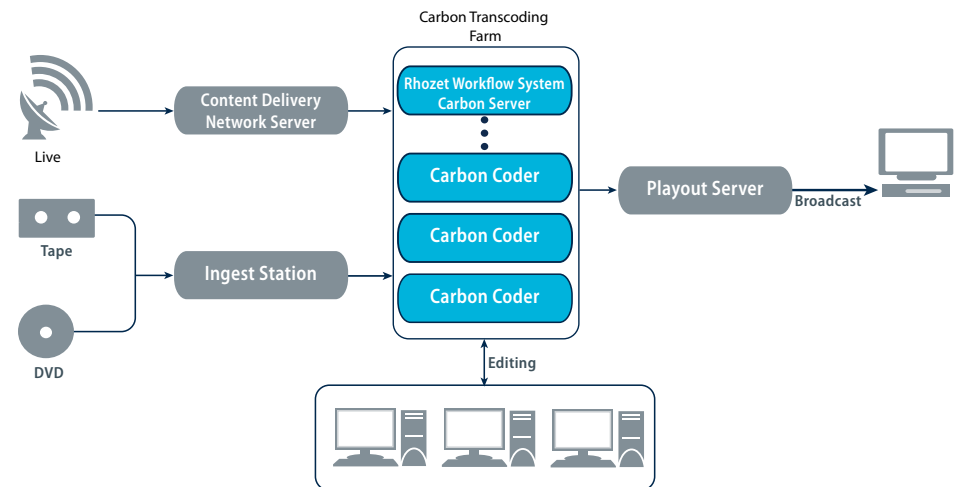
**BROADCAST**

Carbon Coder 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 converted for broadcast playout.



**WEBCASTING**

Carbon Coder 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, and transcoded into multiple final delivery formats, then pushed to the Web server.



**WORKGROUP**

Transcoding among a workgroup can be centralized into a transcoding farm of multiple Carbon Coder engines, under the control of Carbon Server or the Rhozet Workflow System (WFS) software. These allow for automated processing of high-volume transcoding tasks, as well as preemptive special case jobs, managing job distribution, job prioritization, load balancing, FTP transfer, status monitoring, and job notification. All interaction with the server software is through an administrative Web interface that can be accessed from remote machines.

### 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, AVCIntra
- Image Sequences
- Windows Media, RealVideo

### SUPPORTED AUDIO CODECS

- Dolby Digital
- Dolby Digital Plus
- PCM
- MPEG-1 Layer II, MP3
- AAC
- AMR-NB
- Windows Media Audio
- RealAudio

### 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

### SUPPORTED MEDIA CONTAINERS

- AVI
- Quicktime
- HDV
- MXF (OP1a, OPAAtom)
- MPEG-2 PS, MPEG-2 TS
- WAV, Broadcast WAV
- HTTP Live Streaming
- LXF, GXF
- WMV, WMA, ASF
- VOB
- 3GPP
- 3G2
- Smooth Streaming

### SUPPORTED SYSTEMS

- ATSC, DVB, CableLabs
- Panasonic P2
- Sony XDCam
- Leitch VR, Nexio
- Grass Valley Profile, K2
- Omneon 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

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