



RHOZET

Universal Media Transcoding

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The Rhozet Carbon product family provides high-performance, scalable and cost-effective transcoding for a broad range of business environments, from specialized studios to enterprise-scale installations.

Carbon Coder

The Essential High-Speed Transcoding Tool

Carbon Coder is a 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. 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, Close Captioning extraction and more. Carbon Coder can be run via its user interface or via an XML-based API that is included with the product.

Carbon Server

Distributed Enterprise Transcoding

Multiple Carbon Coder nodes can be configured as a rendering farm, controlled by one or more Carbon Servers. Distributed enterprise transcoding with Carbon Server provides maximum flexibility, future-proofing and cross-vendor interoperability. Carbon Server allows for automated processing of high-volume transcoding tasks, 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. The same XML-based API controls both Carbon Coder and Carbon Server, allowing developers to manage either a single node or an entire transcoding farm.

Additional Functions

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

Advanced Operations

- ▶ Compliance checking
- ▶ Timecode imprint
- ▶ Subtitle/CC imprint
- ▶ XML controllable titler
- ▶ Metadata transport/conversion
- ▶ Line 21/CC conversion
- ▶ Logo insertion
- ▶ 601/709 color space support
- ▶ Video capture board support
- ▶ Remote job submission
- ▶ Watch folder automation
- ▶ Segment extraction/insertion

Video Filtering

- ▶ Fade in/out
- ▶ Median
- ▶ Blur
- ▶ Sharpen
- ▶ NTSC-safe
- ▶ Rotate
- ▶ Black/white correction
- ▶ Color correction
- ▶ Gamma correction
- ▶ Temporal noise reduction

Audio Filtering

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

Supported Formats

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

Audio Codecs

- ▶ Dolby AC-3
- ▶ PCM, MP3
- ▶ AAC, AMC, AMR-NB
- ▶ WM Audio, RealAudio

Media Containers

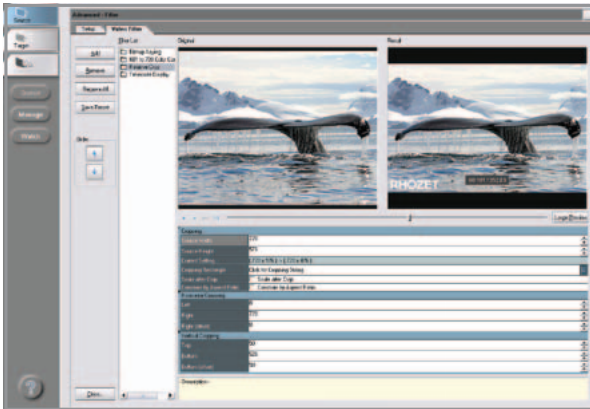
- ▶ HDV
- ▶ MXF (OP1a, OPAAtom)
- ▶ MPEG-2 PS, MPEG-2 TS
- ▶ GXF, LXF, QuickTime
- ▶ WMV, ASF, AVI, VOB
- ▶ 3GPP, 3G2
- ▶ WMA, WAV, Broadcast WAV

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

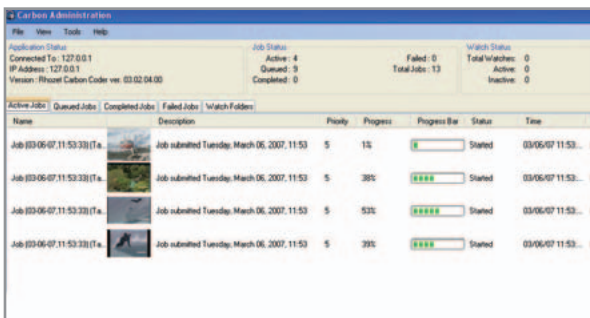
“We needed a transcoding solution that would provide **massive scalability** as well as support a wide variety of streaming formats. Carbon Coder gives us everything from HD to mobile in a **cost-effective platform**.”

Aaron Evans, Director of Encoding and Advanced Technology
CinemaNow



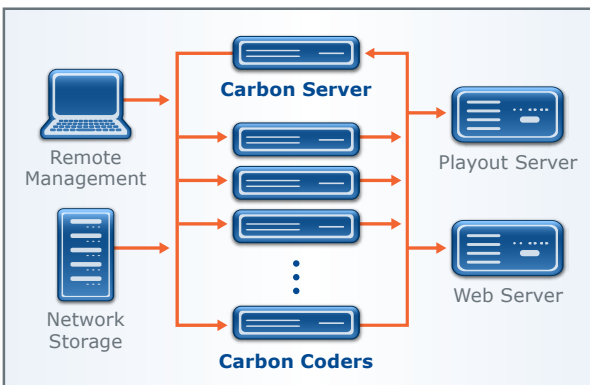
Intuitive User Interface

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 playlist server.



Scalable Transcoding

For large transcoding tasks, multiple Carbon Coders can be configured as a transcoding farm, under the control of Carbon Server software. Carbon Server manages 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

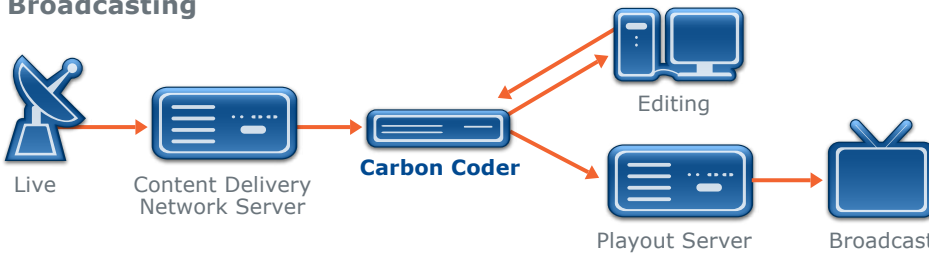
Carbon Coder can be controlled directly via an XML-based SDK provided with the software. Every aspect of the transcoding process can be controlled by the SDK, including source/target destinations, transcoding parameters, filtering, compositing, ad insertion, titling, notifications, etc. The same SDK controls both Carbon Coder and Carbon Server, so your work will scale from a single machine to an entire farm.

```

<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<cnpsXML CarbonAPIVer="1.2" TaskType="WatchCreate">
  <Notify />
  <WatchSource
    WatchPath="G:\example"
    WatchSubFolder.DWD="0"
    AppendSubFolder.DWD="0"
    OverWrite.DWD="0"
    Priority.DWD="5"
    WatchDeleteProcessedSource.DWD="0" />
</WatchSource>
<Destinations>
  <Module_n DestinationName="my destination">
    <Filter_n>
      <Module_n />
    </Filter_n>
    <Notify />
    <PostconversionTasks>
      <FTPUpload_n> <Notify /> </FTPUpload_n>
      <FileCopy_n> <Notify /> </FileCopy_n>
    </PostconversionTasks>
  </Module_n>
</Destinations>
</cnpsXML>
  
```

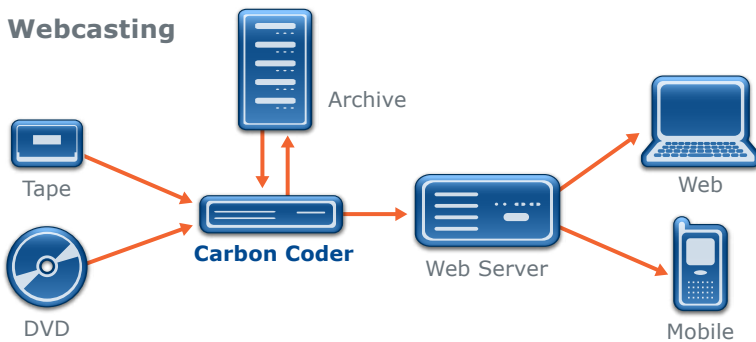
Example Configurations

Broadcasting



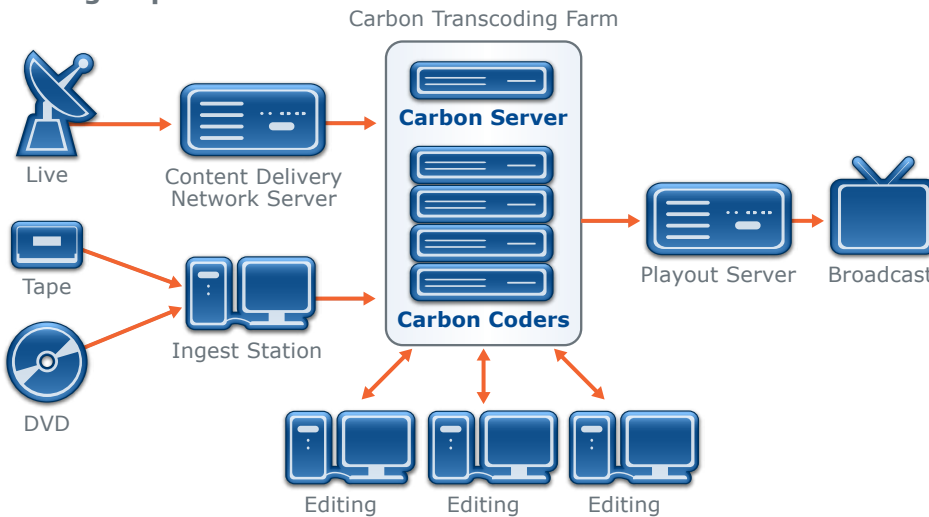
Carbon Coder is used to convert from the format provided by the Content Delivery Network to formats needed within the broadcast facility. Content from the server can be converted directly to a playout format, or first be converted into an editing format. After editing, the finished program is converted 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 software. Carbon Server allows 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.

Customers Include:

Amazon.com
 Ascent Media
 Bayerischer Rundfunk
 BBC News
 BSKyB
 BT
 Cablevision
 CBS
 CinemaNow
 Comcast
 Cox Communications
 Deluxe Digital Studios
 Deutsche Telekom
 Discovery Channel
 E! Entertainment
 Elektrofilm
 Fox
 Framepool
 GlobalFibre
 Hulu.com
 Incited Media
 Lifetime
 Pappas Broadcasting
 Point.360
 Microsoft
 MTV
 Playboy
 ProSiebenSat.1
 Rainbow Media
 Rogers Sportsnet
 Sony
 Studio Hamburg
 Swissinfo/SRI
 Technicolor
 Telekom Austria
 Televisa
 Thought Equity
 Time Warner Cable
 TiVo
 Weather Channel
 Yahoo!

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