CodecCaster NG-1

CodecCaster NG-8

CodecCaster NG Software-Only

CodecCaster is a turn-key solution for real-time transcoding of IPTV streams. CodecCaster offers high-performance and high-quality IP-based format conversion and bitrate reduction for MPEG Transport Streams. CodecCaster fully supports transcoding and transrating to multiple bitrates for adaptive streaming for MPEG-2, AVC/H.264 and HEVC/H.265. Audio passthrough and audio transcoding for AAC, MPEG audio and Dolby Digital Plus is available.

CodecCaster combines the full flexibility and encoding quality of a software-defined solution with high performance. The number of streams to be transcoded in parallel is not artificially limited: All units can be freely configured with unlimited numbers of input streams and output profiles up to the system maximum.

Additional options for stream adaptation, such as deinterlacing, video scaling, frame rate conversion, and audio volume and sample rate conversion allow for serving set-top boxes, tablets, mobile phones, and others.

CodecCaster generates DVB compliant UDP unicast or multicast streams and directly exports Internet/OTT streaming formats, such as HTTP Live Streaming (HLS), including AES encryption with static key or key-rotation. In addition, automated creation of media archives for Video-on-Demand and time-shifted TV is supported, either time-based or based on Electronic Program Guide (EPG) information.

DVB and Teletext subtitles can be included in transcoded streams (burned-in), which offers subtitles with 100% compatibility with all existing devices.

- Transcoding and transrating
  - Real-time transcoding of MPEG Transport Streams
  - Single Program Transport Stream (SPTS) to Single Program Transport Stream (SPTS)
  - IP input to IP output
  - Input: MPEG Transport Stream (MPEG-TS) with
    - MPEG-2 Video
    - AVC / H.264
    - HEVC / H.265
    - AAC, MPEG Audio, Dolby Digital, Dolby Digital Plus
  - Output: MPEG Transport Stream (MPEG-TS) with
    - Transcoding / transrating or passthrough
    - MPEG-2 Video
    - AVC / H.264
    - HEVC / H.265
    - AAC, MPEG Audio, Dolby Digital, Dolby Digital Plus
  - Video effects
    - Deinterlacing, scaling, frame rate conversion
  - Audio effects
    - Volume, sample rate conversion

Application areas

- Live transcoding and transrating of IPTV streams
- Multi-bitrate and multi-screen for adaptive streaming
- Bandwidth reduction for Internet/OTT streaming and wireless networks
- Stream adaptation for set-top boxes, tablets, mobile phones
- DVB compliant UDP streams and HLS output
- VoD archives from live streams

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	CodecCaster NG-1	CodecCaster NG-8
AVC / H.264	**Output streams**	**Output streams**
▪ SD Transcoding MPEG-2 to H.264	40	320
▪ HD Transrating H.264 to H.264	9	72
▪ Multi-bitrate MPEG-2 to H.264	22 x 3 = 66	176 x 3 = 528
HEVC / H.265	**Output streams**	**Output streams**
▪ SD Transcoding MPEG-2 to H.265	6	48
▪ HD Transcoding H.264 to H.265	1	8
▪ Multi-bitrate MPEG-2 to H.265	3 x 3 = 9	24 x 3 = 72
MPEG-2	**Output streams**	**Output streams**
▪ HD Transcoding H.264 to MPEG-2	11	88
▪ SD Transcoding H.264 to MPEG-2	29	232

Specification	
AVC / H.264	
▪ SD Transcoding MPEG-2 to H.264	▪ **Input** MPEG-2 720 x 576 pixel, 25 fps @ 4.0 Mbps ▪ **Output** H.264 720 x 576 pixel, 25 fps @ 1.0 Mbps
▪ HD Transrating H.264 to H.264	▪ **Input** H.264 1920 x 1080 pixel, 25 fps @ 8.0 Mbps ▪ **Output** H.264 1920 x 1080 pixel, 25 fps @ 3.0 Mbps
▪ Multi-bitrate MPEG-2 to H.264	▪ **Input** MPEG-2 720 x 576 pixel, 25 fps @ 4.0 Mbps ▪ **Output** 3 output profiles for each input stream H.264 720 x 576 pixel, 25 fps @ 1.00 Mbps H.264 360 x 288 pixel, 25 fps @ 0.30 Mbps H.264 176 x 144 pixel, 25 fps @ 0.15 Mbps
HEVC / H.265	
▪ SD Transcoding MPEG-2 to H.265	▪ **Input** MPEG-2 720 x 576 pixel, 25 fps @ 4.0 Mbps ▪ **Output** H.265 720 x 576 pixel, 25 fps @ 1.0 Mbps
▪ HD Transcoding H.264 to H.265	▪ **Input** H.264 1920 x 1080 pixel, 25 fps @ 8.0 Mbps ▪ **Output** H.265 1920 x 1080 pixel, 25 fps @ 3.0 Mbps
▪ Multi-bitrate MPEG-2 to H.265	▪ **Input** MPEG-2 720 x 576 pixel, 25 fps @ 4.0 Mbps ▪ **Output** 3 output profiles for each input stream H.265 720 x 576 pixel, 25 fps @ 1.00 Mbps H.265 360 x 288 pixel, 25 fps @ 0.30 Mbps H.265 176 x 144 pixel, 25 fps @ 0.15 Mbps
MPEG-2	
▪ HD Transcoding H.264 to MPEG-2	▪ **Input** H.264 1920 x 1080 pixel, 25 fps @ 8.0 Mbps ▪ **Output** MPEG-2 720 x 576 pixel, 25 fps @ 4.0 Mbps
▪ SD Transcoding H.264 to MPEG-2	▪ **Input** H.264 720 x 576 pixel, 25 fps @ 4.0 Mbps ▪ **Output** MPEG-2 720 x 576 pixel, 25 fps @ 4.0 Mbps

Benchmark examples only

All units can be freely configured with unlimited numbers of input streams and output profiles up to the system maximum.

The tables show up to which numbers of input and output streams the systems can be loaded with the given specifications.

▪ IP input / output	▪ IP input
	  ▪ UDP unicast / multicast
	  ▪ RTP unicast / multicast
	▪ IP output
	  ▪ UDP unicast / multicast
	  ▪ HTTP Live Streaming (HLS) with AES encryption with static key or key rotation

▪ Media archive	▪ HTTP Live Streaming (HLS)
	  ▪ Time-based
	  ▪ Based on Electronic Program Guide (EPG)
	▪ XMLTV export of EPG data
	▪ JPEG screenshots

▪ Subtitling	▪ DVB subtitles and Teletext subtitles
	  ▪ Passthrough
	  ▪ Burned-in subtitles

▪ Administration	▪ Linux system ▪ Web interface (http/https), ssh ▪ Free Software Developer Kit (SDK) for PHP and XML-RPC
Hardware	

▪ CodecCaster NG-1	▪ 1U , 19" rack mountable
	▪ 1x transcoding node
	▪ 1x SSD (Hot swap carriers)
	  ▪ Option: Redundant disk array (RAID1, 2x SSD)
	▪ Height x Width x Depth
	  ▪ 43 mm (1.7") x 426 mm (16.8") x 495 mm (19.5")
	▪ Voltage: 100V – 240V AC, 50-60 Hz
	▪ Weight: 9 kg
	▪ Power consumption:
	  ▪ < 6 W (standby) to 160 W (loaded)
	  ▪ Option: Redundant power supply
	▪ High-quality server appliance assembled in Germany

▪ CodecCaster NG-8	▪ 3U , 19" rack mountable ▪ 8x Hot-pluggable transcoding nodes ▪ 8x Redundant disk array (RAID1, 2x SSD) ▪ Height x Width x Depth ▪ 132 mm (5.2") x 438 mm (17.3") x 620 mm (24.4") ▪ Voltage: 100V – 240V AC, 50-60 Hz ▪ Weight: 45 kg ▪ Power consumption: 750 W (loaded) ▪ Redundant power supply ▪ High-quality server appliance assembled in Germany
Software-Only	
▪ CodecCaster NG Software-Only	▪ Download for Linux operating system (64 bit) ▪ Ask for supported Linux distributions and instructions

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