



## ZIXI TRANSCODER V16

# Leverage Zixi for Live Video Transcoding and Media Services

The Zixi Transcoder adds high quality and high-density live video transcoding to the Zixi platform, which flawlessly delivers broadcast-quality video over unmanaged and managed IP networks, at lower cost, at scale, and with sub-second transcoding and delivery latencies. With the live transcoding feature, the Zixi Broadcaster provides a single solution for the universal origination and distribution of high quality, adaptive live broadcast content to OTT workflows, digital MVPDs, MSOs, hotels, cinemas, iPhone, set top boxes, and Android player apps as well as other destinations. It is a complete transcoding solution including decode, encode, packaging and delivery to origin layered on top of the Zixi Broadcaster's support of various IP ingest formats and IP distribution formats, including low latency HLS and DASH. The Zixi Transcoder supports encoding to H.265/HEVC and H.264/AVC video codecs as well as a variety of audio codecs most commonly used for live broadcast and OTT workflows. The Zixi Transcoder also supports NDI and webRTC workflows.

Using NVIDIA GPU, the Zixi Transcoder provides high density SD to UHD transcoding to multiple stream renditions for adaptive delivery. NVIDIA GPUs are available in PCIe boards for bare-metal installations and on cloud providers such as AWS, GCP, Azure, and OCI. The Zixi Transcoder also supports a CPU only software transcoding solution for lower density applications. The Zixi Transcoder is available on X86\_64 and ARM64 platforms for both NVIDIA GPU and software based transcoding.

The Zixi Transcoder is managed via the Zixi Broadcaster's Web User Interface, REST API or via Zixi's ZEN Master orchestration, management, and monitoring control plane. ZEN Master makes it easy to manage inputs and outputs for hundreds of live video streams at scale. With just a few clicks, and with automatic configuration details for network resources and distribution targets, users can create new live channels and spin up required streams on the fly.

### Typical workflows for the Zixi transcoder include:

#### Broadcast backhaul

Compress high bitrate live mezzanine MPEG2 to lower bitrate H264 or H265, at the same quality level, to reduce bandwidth requirements for video uplink. When uplink bandwidth is scarce or cost is at a premium, compression of live content can make possible an otherwise impractical workflow.

#### Over the Top (OTT)

Deliver live mezzanine video transcoded into multiple renditions of H264 or H265 and packaged into HLS or DASH formats to laptops, mobile devices and set top boxes via Content Delivery Networks, YouTube Live or similar services. Adaptive streams can also be delivered via the Zixi protocol to Zixi enabled endpoints.

#### Bitrate reduction and packaging for Social Media

Deliver live mezzanine video transcoded to lower bitrate H264 and packaged into RTMP or HLS to Social Media sites such as Facebook Live, YouTube Live, and Twitch.



## Zixi Transcoder Specifications

### Inputs

- Zixi, NDI, RIST, SRT, HLS, RTMP, RTP, UDP, WebRTC, and more

### Outputs

- Zixi, NDI, RIST, SRT, HLS, RTMP, RTP, UDP, WebRTC, and more

### Captions

- ATSC 608/708 ES passthrough to Zixi TS, HLS, DASH, and RTMP
- DVB track passthrough to Zixi TS
- WebVTT generation from ATSC 708 Elementary Stream

### Audio Processing

- Transcode up to 16 audio tracks
- Passthrough of all audio tracks
- PID mapping and pass-thru
- Audio Sample Rate Conversion - 44.1KHz to/from 48KHz

### Audio Decode

- AAC Low Complexity, High Efficiency V1, High Efficiency V2 ADTS and LATM encapsulation
- AC3 (Dolby Digital)
- MP2 (MPEG-2 Audio Layer II)
- MP1 (MPEG-1 Audio Layer II)
- Opus

### Audio Encode

- AAC Low Complexity, High Efficiency V1, High Efficiency V2
- E-AC-3 (Enhanced Dolby Digital)
- MP1 (MPEG-1 Audio Layer II)
- Opus

### Video Processing

- MPTS De-multiplexing
- Passthrough
- 10-bit to 8-bit color downscaling
- Thumbnail extraction as HLS playlist
- Deinterlacing (non-telecine) on all input codecs
- Interlaced output (only with S/W encoder and NDI, not NVIDIA)
- PID mapping and PID pass-thru
- Black bar insertion
- Cropping
- Smooth framerate conversion – up and down
- Image Overlay/Logo Insertion
- Copy GOP from source or generate new GOP
- GOP synchronization when generate new GOP
- Omit or keep closed captions
- I-frame synchronization of outputs with different FPS
- I-frame injection at SCTE-35 markers
- Preserve all video source color primaries

### Advanced Features

- ML-based adaptive bitrate control based on network conditions

### Ad Insertion

- SCTE-35 passthrough to Zixi TS
- SCTE-35 converted to CUE-OUT/CUE-IN in HLS
- SCTE-35 converted to Splice Events in DASH
- SCTE-35 converted to OnCuePoint in RTMP
- API Injection with output to SCTE-35 in Zixi TS
- API Injection with output to CUE-OUT/CUE-IN in HLS
- API Injection with output to Splice Events in DASH
- API Injection with output to OnCuePoint in RTMP

### NVIDIA Hardware Encoder Codec and Color Support

	Codec	Chroma Subsampling	Color Depth
Video Decode	MPEG-2	4:2:0	8-bit
	H.264/AVC	4:2:0	8-bit
	H.265/HEVC	4:2:0, 4:4:4	8-bit, 10-bit
Video Encode	H.264/AVC	4:2:0, 4:4:4	8-bit
	H.265/HEVC	4:2:0, 4:4:4	8-bit, 10-bit

### Software Encoder Codec and Color Support

	Codec	Chroma Subsampling	Color Depth
Video Decode	MPEG-2	4:2:0	8-bit
	H.264/AVC	4:2:0, 4:2:2, 4:4:4	8-bit, 10-bit
	H.265/HEVC	4:2:0, 4:2:2, 4:4:4	8-bit, 10-bit
Video Encode	MPEG-2	4:2:0	8-bit
	H.264/AVC	4:2:0, 4:2:2, 4:4:4	8-bit, 10-bit

### NDI Software Library Codec and Color Support

	Codec	Chroma Subsampling	Color Depth
Video Decode	NDI*	4:2:0, 4:2:2, 4:4:4	8-bit, 10-bit
Video Encode	NDI*	4:2:0, 4:2:2, 4:4:4	8-bit, 10-bit

\* NDI v4 original format, not NDI | HX

## ABOUT ZIXI

Zixi provides a cloud based and on-premise Software-Defined Video Platform enabling the management, orchestration, monitoring, and delivery of broadcast-quality live and live linear video over any IP network, protocol, cloud provider or edge devices to broadcasters, enterprises, over-the-top video providers, and mobile service providers around the world. Over 15+ years, the Zixi Enabled Network (ZEN) of partners has grown to over 400+ OEM and service providers with whom Zixi serves well over 1000+ customers representing most of the top media brands around the world with 20,000+ channels delivered daily. [www.zixi.com](http://www.zixi.com) | [sales@zixi.com](mailto:sales@zixi.com)