

MediaKind Encoding Live



High-Quality Encoding for Any Screen

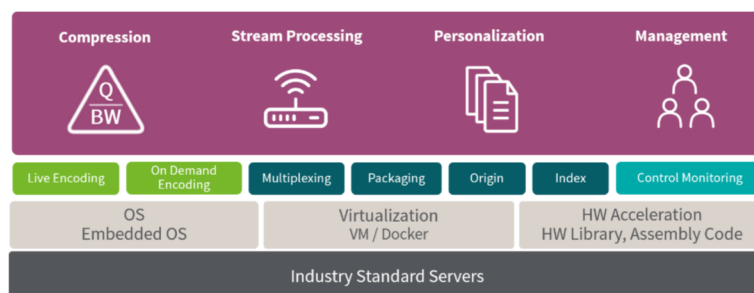
MediaKind Encoding Live brings together 25 years of video compression experience to deliver the highest quality, any screen software applications for live video encoding and transcoding. MediaKind's continued investment and focus on the latest compression technologies ensures that the Encoding Live capabilities will efficiently deliver the best picture quality over bandwidth in all encoding environments and networks.

End-to-end software solution with centralized configuration

MediaKind's solution provides an end-to-end system designed to address key industry challenges. It allows operators to get the best from their IT infrastructure by providing a highly scalable and future-proof video processing solution.

- **Push your quality "Up!"** leveraging Encoding Live's highest video quality and guaranteed performance across all codecs (MPEG-2, H.264 & HEVC).
- Faster time to market by leveraging **one solution to address all networks** and the software microservices-based architecture.
- **Reduce operational complexity** using the MediaKind Controller as a single point of entry for all processing types.
- **Optimize OPEX and CAPEX** when migrating to full IP, and leverage the latest IT technologies (Containers & Orchestration) to reduce infrastructure costs.

MediaKind empowers operators all over the world to provide the most unique and immersive ways to distribute and consume video content.



PUSH Your Video Quality ‘Up’ with Encoding Live™

Encoding Live is an any-screen software solution for **high-quality, live video encoding/transcoding** to any device. With its ‘Up!’ compression mode, Encoding Live **improves video quality, saves bandwidth,** and ensures **future-proof operations.**

Encoding Live offers an IP-centric and IT-oriented approach to video transcoding to all standards (MPEG-2, H.264 and HEVC), across all networks and devices, such as any real-time broadcast applications including: IPTV, cable, Satellite Direct To Home (DTH) and Internet TV.

Simplified operations

Access your headend from a **single, unified point.** MediaKind Controller is integrated with Encoding Live to provide a centralized GUI.

Oversee your whole headend through this **service-driven centralized GUI:** you can **configure, control and monitor** all your channels across all networks (DTH, cable, iTV). A REST API is also available for mass configuration.

Addressing all networks with a single software solution significantly improves efficiency and operations compared to architectures that call for separate headends.

Encoding Live is designed to run 24/7 with embedded **redundancy features** (either **N+M failover** or **1+1 active/active mode**). The fully automated deployment workflow will help you shorten your time to market and envision more complex solutions like automated disaster recovery.

Reclaim the full potential of your infrastructure

Thanks to our **microservices-based architecture,** Encoding Live is **container and orchestration ready.**

The MediaKind solution is **designed for cloud use** (private or public) and for **future-proof operations.** Service configuration and hardware are completely decoupled to provide all the flexibility you can expect from your video headend.

The flexible software architecture of Encoding Live allows for simple software upgrades to guarantee continuous quality and functionality improvements.

Leveraging these cutting edge IT technologies ensures safe software roll out and improves management with simplified upgrades for your whole headend. This IT-centric approach is designed to significantly reduce operational costs.

Virtualized and Standard Server Deployments

Encoding Live can adapt to multiple deployment contexts such as:

- **MediaKind optimized** appliance-based **platforms**
- Software on **COTS or blade servers**
- Virtual instances in the **cloud**

This versatility gives your team more flexibility to manage operations and media processing deployment.

The screenshot displays the MediaKind Controller interface. The left sidebar contains navigation options: Home, Services, Alarms, Servers, Templates, Failover, and Settings. The main content area shows the 'standalone' service status as 'Primary - Online' with an uptime of 00:01:09. The 'Media info' tab is active, showing 'Selected programs' for 'Running from 238.130.112.54:1234 Program Number 2 - QVCHD1 ENC-34-A'. A detailed table provides technical specifications for video and audio streams.

Code	Codec	Bitrate	Resolution	Standard	Aspect ratio	Active Format Description	Signal Loss Image Status
100	Video	mpeg2video	14467.648 kbps	1920x1080	1080i29.97	16.9	missing unloaded
		Video quality	Bit depth	Chroma	Dynamic range	Color space	Transfer characteristics
		9.412797	8	4:2:0	SDR	BT.709	BT.709
Code	Codec	Bitrate	Sampling	Language	Channel mode	Left audio	Right audio
101	Audio	ac3	384 kbps	48 KHz	eng	stereo	-12 dB
		Command count	Command type	Outpoint	Immediate	Auto return	Break duration
		0	SCTE-35	0			

Below the table, 'Other programs' are listed: Program number 1 - QVCS1 ENC-34-B and Program number 2 - QVCHD1 ENC-34-A. A summary table at the bottom shows PID, Media type, and Info for each stream.

PID	Media type	Info
100	video	Mpeg2-Video
101	audio	Mpeg2-AC3

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Input

Baseband Input	Support for 3G/HD/SD-SDI SDI over IP (SMPTE-2022-6)
Compressed IP Input	Type: IP (IGMPv3-based redundancy and dual multicast redundancy), Dual source redundancy (active/active & active/passive modes), Pro-MPEG FEC support Protocols: MPEG-2 TS (MPTS & SPTS), RTMP (H.264 HD, ACC) Video Codecs: MPEG-2, H.264, HEVC. 4:2:0 and 4:2:2 8/10 bits Resolution and frame rate: Up to 2160 @ 50 / 59.94 / 60 fps Audio Codecs: MPEG-1 LII, Dolby Digital (AC-3), Dolby Digital Plus (E-AC3), AAC, HEAAC v1 and v2, Dolby E Bit rate: SD/HD up to 50 Mbps, UHD up to 80 Mbps
Uncompressed IP Input	SMPTE ST 2110 up to 4:2:2 10 bits HD ingest
Out-of-Band	ID3, Cross-stream Prevention ESAM/SCTE35

Pre-Processing

Aspect Ratio	WSS, AFD, Video index
Metadata and VBI	SCTE 104 SDI/SDI over IP and IP out of band ⁽¹⁾ , SCTE-35, IA 608/708 Closed Caption, SCTE-20, DVB Teletext, DVB-VBI, SCTE 27 ⁽¹⁾ , OP47, SMPTE 2031, VITC
Frame rate conversions	25i to 29.97i, 50p to 59.94p
Image Settings	Brightness, Contrast, Saturation, Hue, Gamma, Temperature
Enhancement Filters	Video: De-interlacing, Cropping, Letter boxing, Stretching, SD and HD Cross-scaling, 3:2 Pull down, MCTF ⁽¹⁾ , Deblocking filter ⁽¹⁾ , Spatial Denoising filter ⁽¹⁾ , Cross Talk filter ⁽¹⁾ , Sharpening ⁽¹⁾ , Diamond filter ⁽¹⁾ Audio: Automatic loudness control (A/85), ITU-R BS.1770, NCC, Audio gain adjustment, Mute
Image Overlay	Image insertion on input loss
Watermarking	Linear and RTVOD C3/C7 watermarking

Video Encoding

Video Codec	MPEG-2 Main H.264 Baseline/Main/High profile HEVC Main 10, HEVC Main Profile HDR: HDR10, HLG10, PQ10. Dolby Vision 8.1 pass-through, Tone and Inverse Tone mapping
Rate Control	CBR, Constant Video Quality, Statmux
Data Rate	From 100 kbps to 30 Mbps ⁽²⁾
Resolutions	Progressive: from QCIF to 4K, up to 60 fps. 4K requires HEVC. Interlaced: 480i, 576i, 720i and 1080i
Multi-stream Output	Shared and Split encoding for ABR outputs
Hardware Acceleration	QSV encoding, up to HD H264, HEVC, MPEG2 CBR

(1) Option (2) Depends on codec and resolution (3) For more details contact MediaKind

Audio Encoding

Audio Channels per Service	Up to 8 stereo pairs. Radio Channels for IPTV
Audio Encoding	MPEG-4/MPEG-2 AAC, HE-AAC v1 and v2, AMR-NB, AMR-WB, Windows Media Audio/Audio Pro, Transcode to Dolby Digital Plus (DD+)
Pass-Through	MPEG 1 LII, AC-3, Dolby Digital Plus (E-AC3) 5.1-ch or stereo
Data Rate	From 4.75 kbps to 320 kbps (from 64 to 1024 kbps for DD+)

Post Processing

Metadata	<p>Thumbnail generation for Adaptive TS output</p> <p>Subtitles pass-through and translation: EIA 608/708 Closed Caption, SCTE-20, DVB Teletext, DVB Subtitles, SCTE-27</p> <p>Ad insertion: EBIF/EISS/AIT for Hbb TV/SCTE-35 pass-through, SCTE-104, ESAM</p> <p>VITC Timecode: Available in all formats</p> <p>Nielsen: Watermark extraction for multi-screen devices</p> <p>Stream conditioning: SCTE-35, POIS Interface</p> <p>Logo insertion, Blackout management</p>
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Output

Output Type	Redundant IP outputs
Output Format	Adaptive TS (ALD, EBP, IDR or RAP-based signaling), SDT generation
Low Latency for OTT	Direct Path communication to MediaKind Packaging

Monitoring & Control

Operations Interface	Centralized redundant access point for configuration and monitoring
Control and Systems Protocols	REST, HTTP(s), NTP, FTP, IGMP v2/v3, SNMP v2/3c
High Availability	N+M failover or active/active encoding Dual output conflict prevention with Media Guard Protocol
Monitoring	Service alarms, failover triggers IP video source: ETR 290, FEC, RTP Packet loss statistics

Compatible Deployment Models

Software only	Guaranteed performance on HP BladeSystem, Dell and Cisco UCS Blades ⁽³⁾ Hardware requirements are listed in product installation documentation.
Standard Servers	MediaKind G8 and T1 (QSV acceleration)

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