

MainConcept Live Encoder

Powerful, Real-Time Video Encoding For All Devices

Ready-to-use HEVC / AVC live encoding solution for multiscreen delivery of adaptive streaming formats using SDI and IP ingest sources required for OTT workflows.

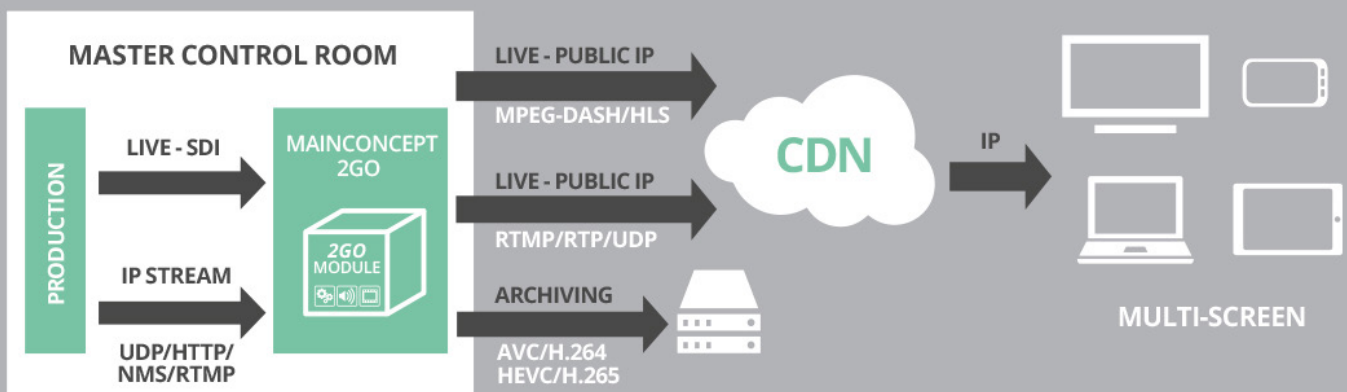


The demand for live event broadcasting is constantly increasing. Content owners, broadcasters and video delivery services are striving for solutions that ingest, prepare and stream audio-visual content for OTT delivery to consumer devices. At best, the output is directly transferred to a CDN or an online video platform via RTMP streaming. The market is striving for tools that allow live encoding and streaming of sports and cultural events as well as for governmental and educational institutions targeting multi-screen delivery services. This also covers file recordings for VOD and highlight archiving purposes.

Introducing the MainConcept Live Encoder, a production ready real-time multi-screen encoding platform for both Windows and Linux that allows input from different sources, such as SDI and IP networks, including UDP, RTMP and HTTP for transcoding into adaptive streaming formats. The encoder is based on the market proven Neulion OTT Platform Encoder that is streaming more than 300 live linear channels 24/7 and delivers over 50,000 live events every year.

Creating Apple HLS, DASH-264 and DASH-265 compliant streams up to 4K 10-bit as well as HDR-10 support, with multi-bitrate and multi-resolution quality layers, the MainConcept Live Encoder takes care of packaging as well as playlist generation. CDN upload support includes Akamai and Amazon CloudFront. For live archiving the encoder can write files to disk or Amazon S3 locations. In addition, the MainConcept Live Encoder outputs IP streams via UDP as Transport Streams, and RTMP streams as MP4.

REAL-TIME WORKFLOW



The MainConcept Live Encoder includes a management layer for monitoring and controlling the encoder. It allows flexible administration through an intuitive web client and a REST API for integration in existing workflows. SNMP (Simple Network Monitoring Support) Traps will monitor the system and notify the user about important events or errors. Built-in Redundancy Management features provide useful 1+1 and N+M failover modes. The live encoding system is a software platform that runs on standard x86 server hardware.

Thanks to the future proof MainConcept Codec technology, the MainConcept Live Encoder is ready for 4K60p HEVC Live encoding today.

FEATURES

Professional Real-Life Proven Technology Usage

Powerful synergy based on the market proven platform that delivers more than 50,000 live events per year as well as streaming over 300 live linear channels 24/7, and the renowned MainConcept Codec technologies that empower the broadcast industry.

Live Adaptive Bitrate Stream Encoding to MPEG-DASH & Apple HLS

Live encoding to Apple HLS, DASH-264 (8-bit) or DASH-265 (8-bit/10-bit) compliance streams up to 4K, including packaging as well as manifest and playlist generation.

Built-in Video and Audio Processing

Ensure to make encodes conform to specific parameters by applying a range of processing tools to content, including Scaling, cropping, framerate conversion, deinterlacing, logo insertion, and audio channel mapping.

Parallel MPEG-DASH & Apple HLS Layers Packaging

A single job for encodings of different quality layers and resolutions can be packaged in parallel for both MPEG-DASH and Apple HLS, including MPD file and playlist generation.

Common Input & Output Options

Support for SDI and IP network streams input via UDP (MPEG-2/H.264 in MPEG TS), RTMP and HTTP. Encoding to IP streams using RTMP (in MP4), RTP, HTTP and UDP (in TS) for OTT delivery. Live streams can also be saved in AVC/H.264 (8-bit) and HEVC/H.265 (8-bit/10-bit) as MP4 files for archiving.

High Dynamic Range

Signaling Hybrid Log Gamma (ITU-R BT.2100-1), PQ-10 (BT.2100 / SMPTE ST 2084) and HDR-10 (SMPTE ST.2086) HDR Encoding in HD and 4K for both HEVC/H.265 and AVC/H.264.

Flexible Deployment via Web UI & REST API

The intuitive web-based interface offers easy configuration and administration of the MainConcept Live Encoder with full access to all available presets and output formats. The XML-based public REST API provides quick and simple integration into already available existing workflow systems for externally control of the distribution encoder.

Redundancy & Failover Management

For redundancy handling, the MainConcept Live Encoder currently offers failover scenarios to provide uninterrupted service and automated encoding channel recovery in case of an issue, outage or hardware failure on the encoding node. It offers user-defined 1+1 and N+M redundancy options.

SPECS

SYSTEM

- Web-based configuration
- Windows / Linux 64-bit
- AJA & DeckLink SDI capture cards

INPUT

- SDI capturing
- IP streams: UDP (MPEG-2/H.264 in MPEG TS), HTTP, RTMP, authenticated RTSP (in TS)
- Hardware AVC/H.264 and HEVC/H.265 decoding for IP ingest using Intel's Quick Sync Video technology for dedicated Intel Core Processors
- Optimized low-latency streaming for NeuLion OTT platform
- Video Codecs: AVC/H.264 (8-bit / 10-bit), HEVC/H.265 (8-bit / 10-bit), MPEG-2, VC-1
- Audio: Codecs: AAC, MPEG Audio Layer 1/2, MP3

ENCODING

- Live encoding to HLS (AVC/AAC) up to 1080p (8-bit), incl. playlist and packaging
- Live encoding to DASH-264 (AVC/AAC) up to 1080p (8-bit), incl. MPD and packaging
- Live encoding to DASH-265 (HEVC/AAC) up to 4K (8-bit / 10-bit), incl. MPD and packaging
- Parallel packaging of MPEG-DASH and HLS
- Simultaneous encoding of 8 MPEG-DASH or HLS quality layers

PROCESSING

- HDR-10 support
- Closed Caption (EIA-608 & EIA-708)
- Ad-Insertion (SCTE-35 & SCTE-104)
- Logo insertion
- Slate insertion for lost signals
- Loudness normalization (CALM-Act / EBU R128)
- Video / Audio Processing Tools
 - Deinterlacing, framerate conversion, scaling
 - Channel mapping

OUTPUT

- Archive live streams to disk as MP4 (HEVC/H.265 and AVC/H.264)
- Amazon S3 file storage
- IP streams: RTMP, UDP, RTP, RTSP, HTTP
- CDN Support: Akamai, Amazon CloudFront
- Apple HLS AES-128 common encryption

CONFIGURATION

- User Rights Management for administration and monitoring
- REST API
- SNMP Traps API
- Redundancy Management (1+1, N+M)
- Combined scheduler for encoding and publishing

TECH SPECS

For running the MainConcept Live Encoder AVC/H.264 HD, we recommend the following hardware specifications:

DELL POWEREDGE R430 RACK SERVER

- 2x Intel® Xeon® E5-2640 v3 2.6 GHz (8 Cores/16 Threads per CPU), 20M Cache, 8.00 GT/s QPI, Turbo, HT, 8C/16T (90W) Max Mem 1866MHz
- 64 GB RDIMM, 2133MT/s, Dual Rank, x4 Data Width
- AJA Kona 4 or Blackmagic DeckLink Duo SDI capture board

HP PROLIANT DL380 G9 2U / DL160 1U RACK SERVER

- 2 x Intel® Xeon® E5-2640 v3 2.6 GHz (8 Cores / 16 Threads per CPU)
- 64 GB Standard DDR4 SDRAM
- Deltacast Delta-3G-elp-d 8c (Windows), AJA Kona 4 or Blackmagic DeckLink Duo SDI capture board

For running the NeuLion MC Encoder HEVC/H.265 4K, we recommend the following hardware specifications:

HP PROLIANT DL380 GEN9 2U RACK SERVER

- 2 x Intel® Xeon® E5-2699v3 2.3 GHz (18-cores / 36 Threads per CPU), 45M Cache (145W)
- 64 GB Ram DDR4, 2133 MT/s,, Dual Rank x4
- Deltacast Delta-3G-elp-d 8c (Windows), AJA Kona 4 SDI capture board

DELL POWEREDGE R930 RACK SERVER

- 2 x Intel® Xeon® E5-2699v4 2.2 GHz (22-cores / 44 Threads per CPU), 55M Cache (115W)
- 64 GB RDIMM, 2400 MT/s, Dual Rank, x8 Data Width
- Deltacast Delta-3G-elp-d 8c (Windows), AJA Kona 4 SDI capture board

MINIMUM OPERATING SYSTEM

- Microsoft® Windows® Server 2012
- Microsoft® Windows® 7 Ultimate and Professional SP1 x64
- Microsoft® Windows® 10
- Linux CentOS 7.2

MINIMUM RECOMMENDED BROWSER VERSIONS FOR NEULION® MC ENCODER WEB CLIENT

- Mozilla Firefox v52.5.x ESR or newer
- Google Chrome v62.0.x or newer
- Microsoft Internet Explorer v11.0.x or newer

MORE INFORMATION:
MAINCONCEPT.COM

EMAIL:
SALES@MAINCONCEPT.COM

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