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Drive Better Quality Video Experiences with More Efficient Encoding & Transcoding

Powered by Intel® processors, Beamr Transcoder* brings a high-performance and high-quality HEVC & H.264 encoder to multi-cloud environments

Beamr Transcoder* features overview

Containers: ES, TS, MP4, MOV

Video decoding formats: MPEG-2, ProRes, H.264, H.265/HEVC

Video encoding formats: H.264, H.265/HEVC

Audio encoding and decoding formats: MP3, AAC, HE-AAC, HE-AAC+, AC-3

Color support: 8-, 10-, and 12-bit color with 4:2:0/4:2:2

HDR standards: HDR-10, HLG

Frame rate: Up to 8Kp120

DAI: SCTE-35 pass-through, Encoding Boundary Points (EBP) supported

Closed captions: EIA 608/708 pass-through

Addressing challenges in streaming video

Business leaders responsible for video distribution services are being challenged to meet increasing expectations for quality. Viewers are carrying OLED 4K-capable phones in their pockets, and the industry is grappling with the reality that by 2021, 82 percent of all IP traffic on the internet will be video.[1] This means a collision is coming between the volume of video and the much greater bandwidth requirements of HDR and 4K content.

Implementing modern technology standards and solutions for streaming video will enable reduced video bitrates while delivering uncompromising quality. This opportunity, and the industry's interest in cloud-based video workflows, inspired Beamr to develop a future-facing transcoding engine that takes advantage of Intel-specific codec optimizations to produce a 200 percent speedup over other widely adopted codec solutions.[2] Meaning half as many servers may be required for the same encoding job.

Beamr's transcoding solution, running on Intel® Xeon® Scalable processor-based platforms, offers MSOs, video distributors, broadcasters, and over-the-top content providers a highly performant and modular solution with a high degree of flexibility and low total cost of ownership (TCO) for live and VOD applications. Developed in native C++ to run on the Linux* operating system, the Beamr Transcoder is fully scalable across private, hybrid, and public clouds and is available in Docker* containers.

A powerful transcoder optimized for Intel® platforms

In its live operation mode, the Beamr Transcoder* supports a live video stream input from network sources to provide a live output stream packaged in HLS and MPEG-DASH by the Unified Streaming Origin* packager. Operation of the Beamr Transcoder is via command line or REST API.

The transcoder was built for modern workflows by fully embracing virtualization. Beamr's unique multistream encoding mode enables the creation of multi-codec ABR sets with HEVC and H.264 layers in a single processing operation, resulting in highly efficient encoding that uses fewer resources while simplifying the encoding workflow.

The solution achieves the following performance benchmarks on a single socket of an Intel® Xeon® Scalable Gold 6154 processor with 18 physical cores and 36 threads:

- Two live transcoded channels using the Beamr *5* HEVC codec engine at 4Kp60 HDR.[3]
- Single ABR channel using the Beamr *5* HEVC codec engine and comprising five profile layers of 4Kp60 HDR, 1080p60 HDR, 720p60 HDR, 540p60 SDR, and 288p60 SDR.[3]
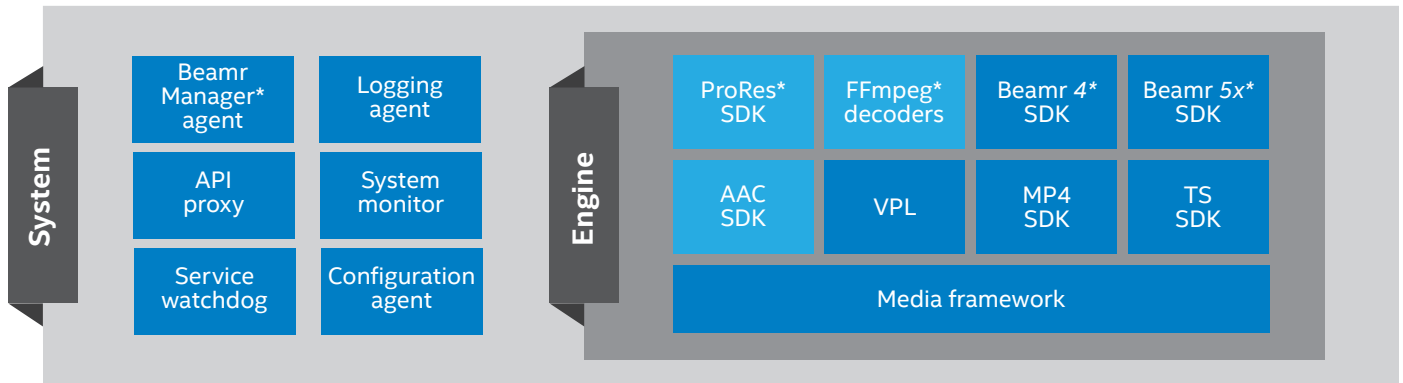
BEAMR

Figure 1: Beamr Transcoder* functional components

Better quality with lower bitrates

Beamr Transcoder offers numerous benefits.

High-performance video codecs

- 200 percent faster transcoding than popular alternatives.[2]
- Low TCO, optimized for Intel® architecture.
- Patented codec innovations, including parallelization for maximal core utilization on all Intel platforms, including 2nd Generation Intel Xeon Scalable processors.
- Content-adaptive bitrate (CABR) efficiency with CABR rate control. CABR is a proprietary rate control mechanism that works in a closed loop at the frame level to deliver bitrate savings without compromising perceptual quality.
  - HEVC CABR yields a 20 to 40 percent bitrate reduction compared to HEVC VBR rate control.[4]

Flexibility

- Built-in interoperability via APIs.
- Meet specific DRM or DAI requirements by switching out key components (such as the packager).
- Includes Unified Streaming integration for complete DRM, HLS, and MPEG-DASH compatibility.

Future-forward support

As new standards are adopted in the industry, they can be easily added into the transcoding engine framework.

About Beamr

Beamr is the leading developer of content-adaptive encoding solutions that enable highest quality and performance with new levels of bitrate efficiency for MSOs, OTT content distributors, broadcasters, and video streaming platforms. With Beamr Transcoder,* video encoding operators can surpass their competition by operating as much as two times faster, while creating files and streams for VOD and live workflows operating on premise or in the cloud.

BEAMR

Learn more

Encode high-quality, high-performing video at low bitrates and a low TCO. Get started at beamr.com/free.

Read more about Intel® visual cloud computing at intel.com/content/www/us/en/cloud-computing/visual-cloud.

(intel)

1. cisco.com/c/en/us/solutions/service-provider/visual-networking-index-vni/index.html.
2. blog.beamr.com/2017/09/08/x265-beamr-5-epic-face-off.
3. Based on testing conducted by Beamr on July 27, 2018, using the described configurations.
4. beamr.com/hevc-bitrate-efficiency.