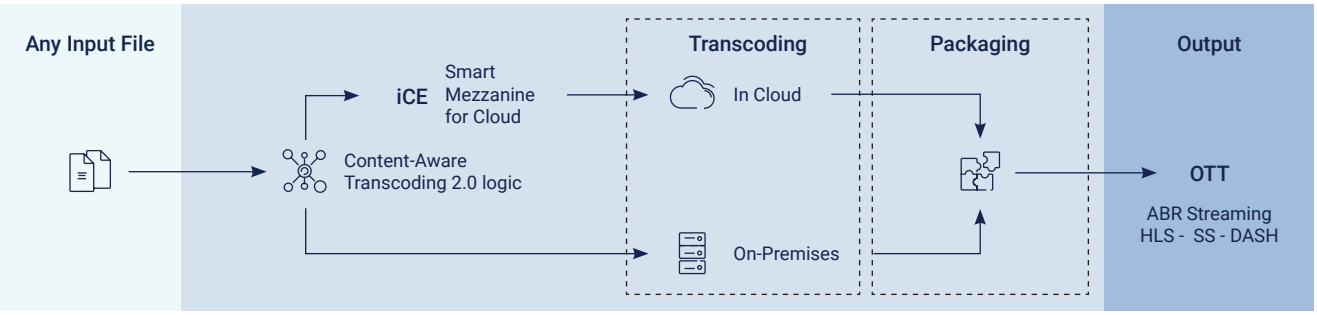
NTT DATA HYPER

Optimized Content-Aware Transcoder



NTT DATA HYPER is an advanced batch transcoder that enables the creation of ultra-optimized, high-quality encoding pipelines leveraging on innovative features such as **Psyco-Visual pre-filtering, hybrid-cloud paradigm** and **Content-Aware Encoding 2.0 powered by AI algorithms.**

To the efficiency of highly optimized AVC and HEVC core codecs, NTT DATA HYPER adds a set of technologies that push the limit of what is possible to achieve with video compression standards.

With **Context-Aware Encoding 2.0 powered by AI algorithms**, NTT DATA HYPER modulates encoding parameters, control of details and video filtering according to the content complexity to achieve a desired perceptual quality. Encoding is no more static but dynamic and the gain in efficiency can be dedicated to reducing bandwidth consumption, improving Quality of Experience (QoE) and enabling 4K at lower bitrates in video streaming.

HYPER uses specific **Psyco-Visual pre-filtering**, equalization logic and higher precision to compensate for the loss of details during scaling and compression processes. It thus achieves a higher perceptual fidelity to the source.

In this way, HYPER delivers top-class quality/bitrate ratios in AVC/HEVC encoding for all screens, from handhelds to 4K HDR TVs.

Built around a sophisticated **hybrid-cloud architecture** (mixing on-premise and cloud transcoding), HYPER can be configured to handle multiple queues with different priorities, levels of parallelism and encoding power. The cloud transcoding option helps to scale indefinitely or to easily handle peak workloads. HYPER performs segmented parallel encoding to scale encoding time also of individual assets and the iCE option ("2-step encoding") accelerates of an order of magnitude the transfer of high-quality source mezzanines from on-premise storage to the cloud for transcoding.

Key features

- Supports AVC and HEVC optimized transcoding up to 4Kp60
- Supports HEVC in HDR, WCG 10bit, BT.2020, PQ-curve and HLG
- Content-Aware Transcoding 2.0: encoding parameterizations are dynamically changed scene-by-scene by an AI algorithm according to content complexity and target quality on different target screen sizes to obtain superior efficiency
- Psyco-Visual filtering for higher perceptual quality
- Dockerized components can be executed in multiple environments including Kubernetes
- Hybrid-Cloud architecture: HYPER mixes on-premises and cloud for cost-effective hybrid deployments
- Segmented parallel encoding reduces encoding time of single asset preserving excellent quality
- Flexible queues and distributed transcoding management
- Distributed architecture for high availability
- iCE (2-step) option to simplify the transfer and storage of high-quality source files in the cloud
- Caching of encoded segments and stitching algorithms allows quick and cost-effective content repurposing
- Flexible and customizable leveraging NTT Data's leadership in system integration

Benefits

- Ultra-optimized AVC/HEVC, up to 20% more efficient than competitors
- Content-Aware Transcoding 2.0 feature improves the efficiency of an additional 20-30%
- Encode in target quality mode to save bandwidth or push the maximum perception in CBR-like mode
- Efficient TransportStream and ABR packaging (HLS, SS, DASH) optimized for Content-Aware Transcoding
- Flexible and cost-efficient transcoding solution that scales from on-prem to cloud

NTT DATA

NTT DATA – a part of NTT Group – is a trusted global innovator of IT and business services headquartered in Tokyo. We help clients transform through consulting, industry solutions, business process services, IT modernization and managed services. NTT DATA enables clients, as well as society, to move confidently into the digital future. We are committed to our clients' long-term success and combine global reach with local client attention to serve them in over 50 countries.

For more information.
To find out more about how NTT DATA can help your business visit: benelux.nttdata.com/industries/telecoms/media

Contact us
https://it.nttdata.com/contact-our-media-experts

Technical Specifications

Interfaces & Control

- HYPER can be controlled using configuration files, REST API, and GUIs
- Scriptable encoding profiles
- Supports multiple and configurable queues

Input formats

- Supports an extremely wide set of AV input formats including H.264, H265, AV1, Mpeg2, AVC-Intra, AVCHD, ProRes, DVCPRO HD, XDCAM, DNxHD in various containers (mp4, mov, mxf); and audio codecs like PCM, AC3, EAC3, DolbyE, AAC, Mpeg1/2 audio
- Supports Dolby E decoding
- Supports embedded OP42/OP47(ttxt) and sidecar files with srt, ttml, vtt, stl subtitles in input
- Easily integrates with third party tools to virtually support any other AV input format and subtitles (optional)
- Supports any input int or fractional frame rate up to 60Fps

Processing

- Logo insertion, transparent watermark
- Advanced stitching capabilities with segment caching to avoid re-encoding
- Optimized decoding, deinterlacing (content-adaptive deint w/o frame doubling), and high-quality scaling
- Optional high quality upconvertion from SDR (BT.709) to HLG and HDR10
- Frame rate conversion with frame insert/drop or optionally frame interpolation

Packaging (output)

- Single file formats: MP4/MOV, MPTS
- ABR formats: Smooth Streaming, HLS (even customized), MPEG DASH
- Optimized HLS and DASH to increase QoE with Content-Aware Encoding

Video Codecs (output)

- MPEG-4 AVC/H.264 – Baseline, Main, High and High10 Profile up to Level 5.1
- MPEG HEVC/H.265 – Main and Main10 Profile up to Level 5.1
- Bitrate: CBR, VBR, Content-Aware Encoding
- Resolution and Frame rate: - Up to 4K 60Fps

Audio Codecs (output)

- MPEG-1 Layer II encoding
- MPEG-2/MPEG-4 AAC-LC and AAC-HEv1/2 encoding
- Dolby Digital (AC3)/Digital Plus (EAC3) encoding

Subtitles (output)

- ttxt in mpegts
- ttml in DASH and Smooth Streaming (ismt)
- webVTT in HLS
- ttml / dfxp as sidecar files for MP4 output