

MPEG-2 H.264 HDTV Real-time Software Transcoder

MPEG-2 H.264 low delay and high quality HDTV real-time software transcoder

KDDI Labs' state-of-the-art MPEG-2 to H.264 real-time software-based transcoder converts MPEG-2 video to H.264 with low delay and high quality. This transcoder offers low cost solution for next generation broadcasting and video on demand services, and enables efficient use of the network bandwidth.

Innovative technologies

Utilizing MPEG-2 information

Reuse of MPEG-2 bitstream parameters such as motion vectors contributes to computational complexity reduction while maintaining video quality. Quantization parameter inheritance from MPEG-2 video enables low delay transcoding with accurate rate control.

Optimization of encoding algorithm

Novel encoding algorithm is newly introduced based on probability and statistics to optimize trade-off between picture quality and computational complexity.

Advanced program optimization

Program optimization such as SIMD operations contributes real-time transcoding without any loss in video quality.

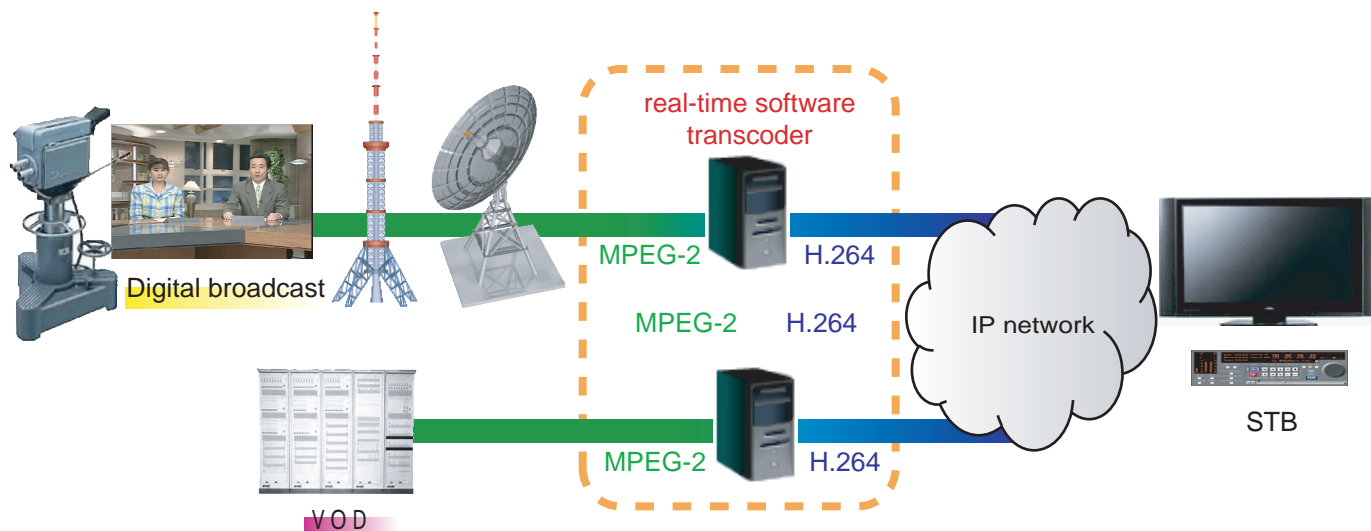
Thorough parallel processing

To make the most of multi-core CPU performance, each video frame is divided into multiple slices, and parallelly encoded. This achieves real-time and low delay transcoding.

Use cases

Digital broadcast IP retransmission, video on demand

This transcoder, which can perform real-time transcode with low delay, is suitable for retransmission of video content compressed by MPEG-2 such as Digital broadcast IP retransmission. It is also available for off-line transcoding of VOD content. It offers great advantage of reducing investment cost comparing to the conventional hardware-based approach.



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