Executive Overview

Next Generation HEVC H.265 Linear Transcoding Architecture Solution

Software server Intel processor based platforms have been used the past few years for early deployments of the new advanced compression technology HEVC H.265. HEVC compression technology provides multiple benefits. It provides up to 50% better compression of video than the mature AVC compression standard widely in use today. In addition HEVC is the only real choice for delivering new UHD 4K and High Definition Range (HDR) enhanced color spectrum video which most all new consumer purchased TV's support today.

Software based Intel server solutions have multiple characteristics that have slowed down wide adoption of HEVC as the superior compression technology to date. It has been very costly as it requires large amounts of computing processing cycles to compress in HEVC. It takes one full blade server to compress one HD linear channel. It requires a high amount of power consumption; high air conditioning costs for cooling and lacks a dense scalable solution. It consumes 1RU (rack unit) of valuable data center rack space per HD linear channel transcode.

Mystic Video is delivering solutions today utilizing new powerful Video Application-Specific Integrated Circuit (ASICs) specifically designed for HEVC compression of Real-Time Linear Video. Here is a list of benefits Mystic's solution delivers over software server solutions

1. Cost per HEVC compressed Linear HD channel and adaptive bit rate (ABR) output profiles is a greatly reduced up to 200%-300%.
2. Provides greater video compression efficiency which delivers a better video quality at same bit rate as software server solutions or equal video quality but at lower bit rates up to 10-20% less.
3. In Mystic first release it provides 16 times HD channel density over a software server solution. This saves on valuable data center rack space and provides for a much greater scalable solution.
4. Power consumption per HD compressed channel is $1/16^{th}$ of that of a software server solution, 15 watts versus 240 watts.
5. It supports 10 bit HEVC encoding which is required to deliver 4K UHD and High Definition Range (HDR) enhanced color spectrum video.
6. Each HD and 4K channel can optionally support five (5) and more transcoded adaptive bit rate (ABR) outputs without need for any additional hardware required. Software Intel processor server solutions would require additional hardware, generally twice the hardware and costs, to provide the additional ABR profiles.
7. As the solution supports ABR Streaming Video, consumers can purchase their own HEVC decoder set top box devices (i.e. Roku, AppleTV) versus video providers supplying costly set top boxes and eliminate truck roll installations at consumer homes. Smart 4K TV applications can also be used as they decode HEVC video.
8. Video Providers can easily transcode any 1080i interlaced HD channel feed to progressive format 1080P60 without any video quality loss. This allows the video provider and its subscriber to use the most popular consumer purchased OTT streaming decoders rather than expensive vendor Cable and IPTV set top boxes.