

White Paper – Broadcast

White Paper on 4K Streaming Workflow

Introduction

As internet pipelines become wider and cloud capacity increases the need and ability to stream 4K video content increases. Solving this workflow in a cost effective and straightforward fashion is not at this point an easy task. Producing and Encoding 4K content requires a number of discrete components on the production side consisting of the production equipment and the encoding hardware.

Background

As with the leap from Standard Definition to High Definition there was a period of time when general purpose processing was outstripped in handling HD signals. Processes that general purpose processors could handle in SD had to be handled by hardware specific FPGAs and ASICs for HD. Such is the case with certain 4K tasks currently, with hardware based solutions leading the field to address the needs of the industry. As such, a turnkey live production switcher and encoder in the same general purpose unit hasn't been possible.

Solution

Utilizing off the shelf CPUs and GPUs vMix's GO and Thunder coupled with exceptionally efficient code are able to both do a live computer based 4K production including cameras, graphics, and encoding all in one system. Figure 1.

Second, this stream is then sent to a Wowza server by a sufficiently broad network connection for dissemination to the target audience. Wowza's Streaming Engine software and Streaming Cloud service allow 4K streaming implementation. Wowza's Streaming Engine runs on your own server array and requires sufficient bandwidth, processing, and technical infrastructure to accommodate 4K distribution. Wowza's Streaming Cloud allows for an out of the box solution allowing for immediate implementation and seamless scaling.

Conclusion

Implementing the vMix GO and Thunder as a turnkey production and encoding unit and the Wowza Streaming Engine and Streaming Cloud provide a clear uncomplicated path for delivering 4K content for your clients.

Figure 1



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