Hardware-based transcoding still wins for linear broadcasting

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Recently, vendors and industry experts alike have begun to line up behind a new approach to transcoding – one that pushes aside the traditional single-purpose appliance-based model and instead leverages pools of general-purpose servers that can be allocated with software. This "virtualized" transcoding architecture echoes an approach that has served the IT industry well, achieving a highly consolidated processing infra-structure that can be dynamically apportioned to support the needs of virtually any application on an as-needed basis. And for many video applications such as VoD and Cloud DVR, this model is gaining popularity as an efficient way to accommodate constantly changing processing loads.

But the dynamics of linear broadcast video are much different from those of stored content, especially when it comes to transcoding. Unlike VoD and DVR applications, linear broadcasting places a steady, heavy work-load on the transcoder – 24 hours a day, 7 days a week, 365 days a year. Therefore, there are few benefits to be gained from the greatest strength of server-based transcoding: its ability to handle dynamic workloads. When it comes to the steady-state demands of linear broadcasting, hardware-based systems still work best.

For real-time broadcast applications, other factors only add to the compelling case for hardware-based trans-coders. Their specialized interfaces make it easy to ingest video from varied sources in its native format, without first converting everything to IP. Their specialized processors are finely tuned for the computations involved in video processing, providing the consistently high performance it takes to transcode high quality video in real time.

Hardware-based systems can also handle more channels per rack unit while consuming less power than off the shelf servers. This means they can provide the scalability needed not only for the multitude of channels in the modern lineup, but for the constantly growing list of device profiles that need to be supported in today's multiscreen world. And they can do it while taking up far less real estate and requiring far less power than server-based implementations.

While the excitement around virtualized, server-based transcoding is not unwarranted, this new method is not the right fit for every application. The demands of linear broadcast video; with its constant and rigorous

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linear broadcast video; with its constant and rigorous workload, varying interface requirements, need for scalability and opportunities for efficiency; give the edge to hardware-based systems. At least for now.