Christie **Terra Bites**:
Bite-size info to whet your SDVoE appetite

The 10G advantage

Once reserved for large organizations and data centers with demanding, high-bandwidth requirements and deep pockets, 10G Ethernet networking has reached the levels of performance, availability and affordability that make it a viable option for professional AV applications. What's more, with the roll-out of the SDVoE Alliance ecosystem—an ecosystem built on 10G—designers and users can take full advantage of this robust, fast and reliable backbone today.

1G networking and HDBaseT limits

With origins dating back to 1999, 1G Ethernet matured when bandwidth requirements were a fraction of what they are today. As demands for higher resolution and bandwidth increase, the performance limits of 1G technology have been left behind.

To compensate for inadequate bandwidth, 1G networks require the use of compression to transport AV signals, which results in artifacts, compromised image quality, reliability and latency issues with no room for expansion.

Monolithic, proprietary matrix switchers, such as HDBaseT™, reached the upper limits of the resolutions and data rates supported in recent years, requiring new investments to support 4K@60 formats. The same situation occurred for fiber switches, which are even more costly. These issues, and more, are why the transition to Ethernet is inevitable.

The 10G advantage

We can categorize the key advantages of 10G SDVoE networks into three areas: performance, scalability and affordability.

Performance

Modern AV systems require 4K content transmission. As such, the ability to transport artifact-free, zero-latency 4K@60Hz video content is a key performance advantage of 10G SDVoE systems over 1G network solutions.

SDVoE networks also natively support video wall scaling, multi-viewer and KVM functions, which aren't standard in traditional AV switching and distribution systems. System-wide EDID management and AV signal processing features add to the performance advantages by making system integration much more efficient. Furthermore, SDVoE switches are available that ship pre-configured for simple plug-and-play integration and setup.

Scalability

Proprietary AV switchers have limits to the number of inputs and outputs that can be supported in their base product designs. This is due to performance limits of electronic components, costs and practical design considerations. IEEE 802.3 Ethernet standards have created a market environment where many manufacturers can produce inter-operable switching equipment that allow systems to efficiently scale up and support system sizes far beyond 1000 endpoints. They can be expanded and built up over time, growing as new requirements emerge.

Conversely, since 1G networks use compression to stream AV content, there is no bandwidth to expand the system to support higher resolution standards or formats.

As an added benefit, unlike proprietary AV matrixes, all SDVoE-compliant products, regardless of manufacturer, are interoperable, meaning designers have flexibility in choice and performance capabilities when specifying systems.

Affordability

Based on affordable and readily available off-the-shelf 10G Ethernet components and a broad set of video processing and control capabilities, SDVoE systems can cost far less than traditional AV system designs and provide far better quality, performance and capabilities than 1G solutions.

Hungry for more?

Visit the following sites for more information on SDVoE.

SDVoE Technology.com – *Learn about Christie® and the SDVoE Alliance – a partnership with the full AV-over-IP ecosystem in mind.*

Christie Terra – an SDVoE technology solution – *Find out about Christie's solution enabling the transport, processing and control of uncompromised AV content.*

For the most current specification information, please visit christiedigital.com