The Arista And Xyratex Solution

Satisfying The Most Demanding Digital Media CGI Aand Rendering Needs

Solutions For Media And Entertainment

Arista 7050 Series

Arista 7500 Series

Xyratex ClusterStor Scale-Out Storage

The Challenge

Media and entertainment companies' competitive viability requires continued reduction in time to production, while managing enormous increases in digital content processing. Parallel computing, with hundreds or even thousands of X86 commodity servers, with high speed interconnects, and centralized storage offers a cost effective approach for minimizing both pre and post production times.

Higher resolution imaging standards evolving from HD to 2K, 4K, and future 6K / 8K video quality are creating exponential growth in file size and processing time required to generate and finalize production quality masters. 3D technology adds fuel to the fire by effectively doubling storage and processing demands.

This new world of digital production has forever changed the Computer Generated Imagery (CGI) landscape. In order to produce realistic-looking high resolution VFX and animation, modern day CGI shops must increasingly look towards parallel computing, with hundreds or even thousands of connected servers. These high performance computing (HPC) clusters include centralized storage systems, Intel-based X86 multicore servers, and file caching accelerators, all interconnected through high-speed, ultra reliable, low-latency switching.

xyratex

Digital based pre and post media production and distribution requires ultra fast, 40Gbps based scalable networking, compute, and centralized scalable storage. Arista and Xyratex have partnered together to deliver on best breed networking and storage platforms for the media and entertainment industry.

High Speed Network Infrastructure And Scale-Out Storage

Foremost in recent HPC development is the elimination of HPC storage bottlenecks with the emergence of 40 gigabit per second (40GbE) high-speed networks and scale-out storage. This new class of appliance-like, storage building blocks have proven invaluable in scaling storage performance and data capacity directly in proportion to the number of required servers.

As the unique top performing storage leader in the HPC industry with appliancelike ease of use, ClusterStor™ brings precisely the performance and capacity scale required by the most intensive CGI and rendering demands ever faced by the media and entertainment industry. ClusterStor not only satisfies today's most demanding digital content processing needs, but represents the foundation where the media and entertainment industry is going.

The Solution

ClusterStor scale-out storage solutions combined with hundreds or thousands of application servers supporting 10GbE and 40GbE connections over Arista enabled highspeed networks represents the competitive means to regain control of escalating digital content processing costs and can help mitigate potential impact to project timelines.

Solutions For Media And Entertainment

For deployments that require something other than 100GBASE-SR10 connectivity from the Arista switches (such as a device with built-in single mode fiber interfaces) the MRV LambdaDriver can be used for media conversion. A 100GBASE-SR10 CFP is used to accept the connection from the Arista 7500E while the output port on the LambdaDriver can be available metro or coherent optics to allow efficient media conversion to support any requirements. In this application, a single LD card and shelf is required for conversion.

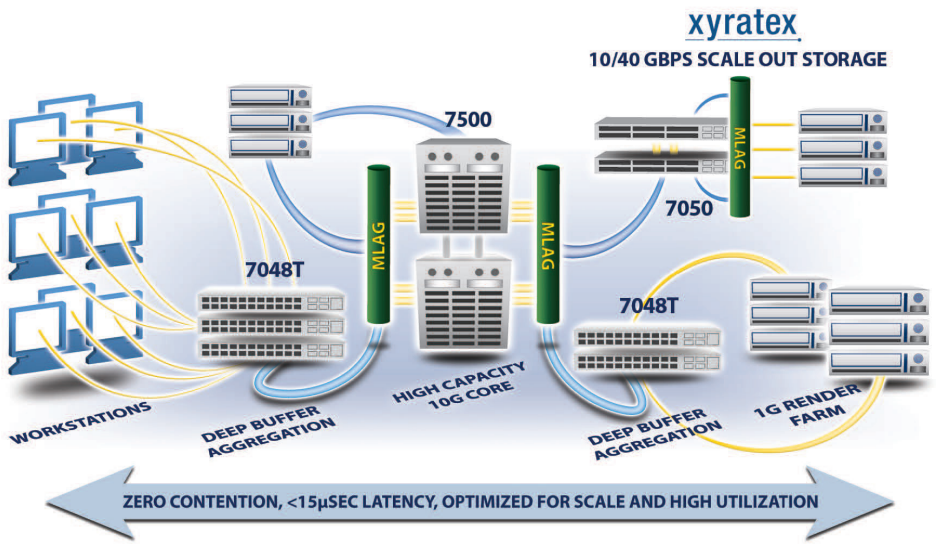

Figure 1: Media and Entertainment Architecture

Arista Scalable Networks

The Arista 7050 Series is a product line of 1RU 10GbE and 40GbE wire speed multilayer switches powered by the Arista EOS, the world's most advanced network operating system.

- Supports dense virtualization, big data processing and storage in a flat 2-tier Leaf/ Spine design
- Non-blocking wire speed forwarding at both L2 and L3, up to 1.28 Tbps and 960 million packets per second, Latency: 800ns-1200ns
- Density: 16 ports of 40GbE (Spine switch), 64 ports of 10GbE (top of rack switch)

Modular 7500 platform for large digital rendering farms with an ability to deploy a 2-tier network architecture supporting 50+ server racks

- 384 line rate 1/10GbE ports at Layer 2 and Layer 3 with load balancing across redundant links
- Virtual Output Queuing and ultra deep buffers for uncongested low latency performance between compute and storage nodes
- N+1 redundancy for all system components
- High density 40GbE and 100GbE ready for massive digital content creation & storage consolidation

ClusterStor™ By Xyratex

ClusterStor introduces a new standard in end-to-end file system performance and efficiency, at the user level. Truly scaling file system performance means aggressively reducing the space, power, cooling and time consumed to achieve the results users seek.

In a ClusterStor system, Scalable Storage Units (SSUs) act as independent I/O processing engines that work in parallel. Each SSU has its own set of resources that includes densely packed disk storage and dual embedded server modules.

The ClusterStor solution has not only been designed with a massively parallel degree of embedded storage servers per rack volume of storage capacity, but looking deeper into individual SSU building blocks, users see the latest generation of server-class processors and the same design approach as in the latest high performance scale-out compute nodes, including best in class low latency 40GbE connectivity.

Figure 2: ClusterStor Scalable Storage Unit (SSU)

- Supports massively parallel globally concurrent access supporting tens of thousands application servers and multiple billions of files
- Single file system namespace supporting over 90 petabytes for digital media
- Linear file system scale-out performance to over 1 TB/s
- Integrated solution management with end-to-end system visibility, provisioning and diagnostics

About Arista Networks

Xyratex is ranked as the #1 OEM storage provider and recognized worldwide leader in data storage technology. Our high performance ClusterStor™ family of scale-out storage products delivers unmatched price-performance and TCO results for data intensive applications in research, energy, defense and life sciences. To learn more please visit www.xyratex.com

About Xyratex

Arista Networks was founded to pioneer and deliver software-driven cloud networking solutions for large data center storage and computing environments. Arista's award-winning platforms, ranging in Ethernet speeds from 10 to 100 gigabits per second, redefine scalability, agility and resilience. Arista has shipped more than five million cloud networking ports worldwide with CloudVision and EOS, an advanced network operating system. Committed to open standards, Arista is a founding member of the 25/50GbE consortium. Arista Networks products are available worldwide directly and through partners.

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