

Quantum®

NAB '18 NVMe Demo

High-Performance All-IP Workflows with NVMe

How are you going to handle 8K or even 16K data performance and capacity requirements while also simplifying your infrastructure? Quantum Xcellis® Scale-out NAS featuring Excelero NVMesh is a comprehensive data management solution that can handle the most demanding 4K/8K/16K workflow performance requirements while intelligently & affordably managing content from ingest to delete. Quantum Xcellis featuring StorNext® 6 enables next-level performance over IP. Independently scale nodes, NVMe Flash, hybrid arrays and expansions along with tiering to secondary disk, object storage and tape. Flexibly share data site to site, multisite and to the cloud. Whether you are starting with a few workstations or scaling to the size of our largest multi-national production clients, Quantum Xcellis can scale to match your specific needs.

RESOLUTION & FRAME RATES

The media and entertainment industry is one of the fastest evolving industries. Its constant goal is to offer viewers better, more realistic, more impressive viewing experiences. Over the past decade in particular, the industry has experienced massive video quality progression—think HD, 3D, 2K, 4K, HFR, UHD TV, etc. But as video resolution and frame rates increase, there is a big impact on the infrastructure's production and post-production teams that need to produce, finish, and deliver the content.

Post-production houses are where the real magic happens in film production. This entails large studios with teams of artists specialized in specific domains such as color correction, special effects, sounds, and more. These artists' workstations constantly stream footage from and to backend storage systems to modify content, add visual effects, correct colors, and be able to play any video back in real time. This is often done with the customers (directors) watching over the shoulders of the artists. Just imagine the bandwidth that is required to feed dozens of workstations concurrent streams of 4K video at 30 frames per second (fps)!

FUTURE-PROOFING POST-PRODUCTION STORAGE

Today's reality is that data center and infrastructure teams at post-production houses are struggling to keep up with the rapid evolution from one resolution to the other: 4K is becoming the working norm in leading post houses and 8K is coming soon with 16K on the horizon, and at the same time frame rates are increasing to 48 and even 60 fps. The additional storage capacity and throughput required for higher frame rates increases linearly: doubling the frame rate from 30 fps to 60 fps doubles the demands placed on the storage environment. Next, and



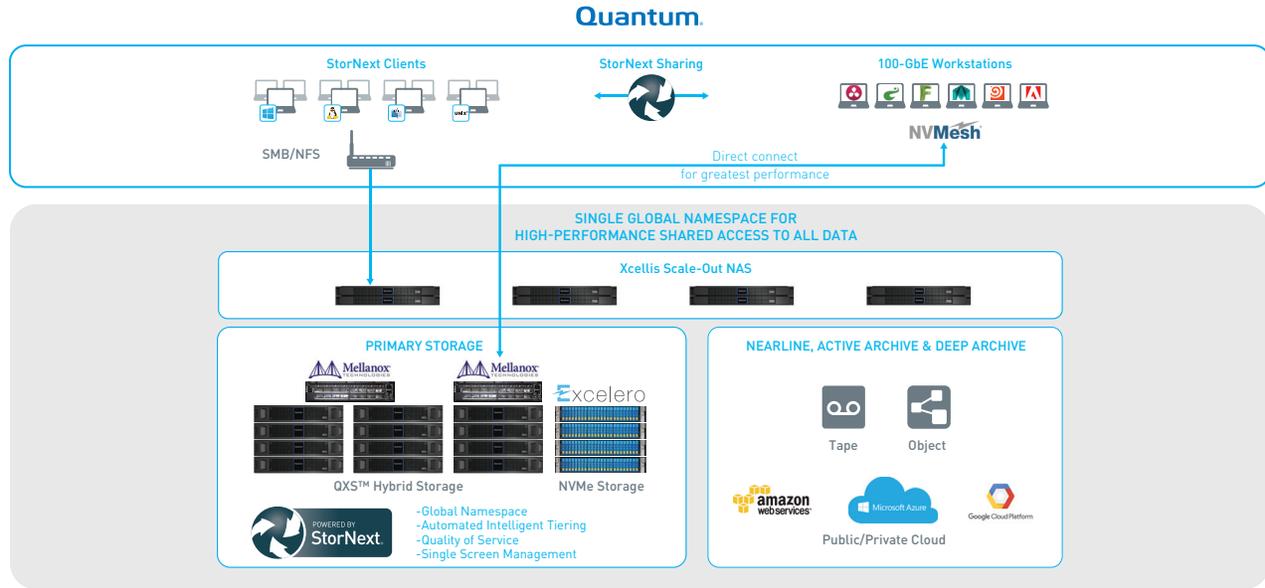
NVMESH BENEFITS FOR ALL MEDIA WORKFLOWS

- Delivers 99.8% of the local NVMe storage servers' performance over the network to workstations
- Leverage the full performance of your NVMe flash at any scale, over the network
- Scale your performance and capacity linearly
- Leverage high IOPS, high bandwidth or mixed efficiency
- Supports current and future media workflows
- Maximize the utilization of your NVMe flash devices
- Choose hardware from any server, storage and network vendor
- Easy to manage and monitor
- The block interface facilitates easy integration with Xcellis scale-out storage
- Choice of architecture: converged, disaggregated or mixed
- Mix different storage media types to optimize for cost, scale or performance
- Scale storage and compute separately, as needed

FOR MORE INFO:

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Figure 1. High-Performance All-IP Workflows with NVMe



having even greater impact on the underlying storage infrastructure, increasing resolution from 2K to 4K quadruples the amount of data as the number of horizontal and vertical pixels doubles. Therefore, when a studio switches from 2K 30 fps to 4K 60 fps, that means the post-production house needs to be ready to store and stream eight times as much data. Having a storage solution such as Quantum Xcellis that can easily and independently scale capacity and performance to accommodate this technical transformation can be of significant benefit to post-production teams. And as studios begin to invest in extra cameras, more visual effects, HDR, color depth and gamut, the need for a storage solution that can provide not only the highest performance but also the ability to tier data to more affordable storage and the cloud becomes a necessity.

As a result of this rapid evolution, and to be better prepared for current and future storage and streaming needs, M&E customers are exploring new storage and network architectures. Many of those customers have legacy infrastructures with a Fibre Channel network and storage arrays serving tens of workstations. The main storage problem is that the speed to ingest data to the workstations from the Fibre Channel storage arrays is just too slow and does not scale. Another challenge for media and entertainment post-production workflows is to not drop frames. Dropped frames impact the technical quality of an asset. They can cause on-screen motion, which distracts the viewer from a seamless viewing experience.

EXCELERO'S NVMESH FOR MEDIA WORKFLOWS

Excero NVMesh is a software-defined storage solution that is taking the media and entertainment post-production and sound studio ecosystem by storm. NVMesh enables workstations' access to large scalable bandwidth and low-latency performance that studios and their customers need for streaming, editing, and reel presentation to any workstation at any time. With 4K becoming the standard and 8K on the horizon, NVMesh enables workstations to be ready for the future while the business enjoys a hardware-agnostic approach, driving down costs and enabling flexibility. One customer found that with just six servers powered by NVMe flash, NVMesh enabled 4K streaming @ 60 fps to 55 workstations concurrently with a low cost-per-GB (includes servers, NVMe drives, and networking).

EXCELERO NVMESH

NVMesh features Elastic NVMe, a distributed block layer that allows any application to utilize pooled NVMe storage devices across a network at local speeds and latencies. Distributed NVMe storage resources are pooled with the ability to create arbitrary, dynamic block volumes that can be utilized by any host running the NVMesh block client. These virtual volumes can be striped, mirrored or both while enjoying centralized management, monitoring and administration.

QUANTUM XCELLIS SCALE-OUT NAS WORKFLOW STORAGE

Xcellis Scale-out NAS is the first storage solution to deliver on all fronts. With multi-protocol support, Xcellis Scale-out NAS offers a variety of options for data access including NFS, SMB and native file system clients over Ethernet, as well as higher performance connectivity options with iSCSI and Fibre Channel. This unified architecture integrated with Excero NVMesh provides the perfect balance of the highest performance flash storage, multi-protocol support for both IP and FC as well as the ability to tier data to more affordable storage on premise and in the cloud.

MELLANOX PROVIDES THE IDEAL ETHERNET STORAGE FABRIC

Mellanox's scalable and flexible Ethernet Storage Fabric (ESF) solutions deliver the high-performance and lossless end-to-end connectivity needed for Xcellis Scale-out NAS and Excero NVMesh.

ABOUT QUANTUM

Quantum is a leading expert in scale-out tiered storage, archive and data protection. The company's StorNext platform powers modern high-performance workflows, enabling seamless, real-time collaboration and keeping content readily accessible for future use and re-monetization. More than 100,000 customers have trusted Quantum to address their most demanding content workflow needs, including top studios, major broadcasters and cutting-edge content creators. With Quantum, customers have the end-to-end storage platform they need to manage assets from ingest through finishing and into delivery and long-term preservation. See how at www.quantum.com/customerstories.

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