CASE STUDY

Quantum StorNext 5 and Extended Online Workflow Storage Enable 100% 4K Operation at Leading Hollywood Post-Production Facility

MTI Film is a leading Hollywood post-production facility with significant production capabilities, film restoration services, and even a software development group. Ensuring these deadline-driven operational workflows have fast collaborative access to newly ingested assets, work-in-progress content, and recently completed work is no small task. It takes more than just a lot of storage—it takes fast, capable, and highly robust workflow-oriented storage. MTI turned to Quantum's StorNext® 5 platform and Lattus™ extended online storage with object storage technology to meet its critical needs.
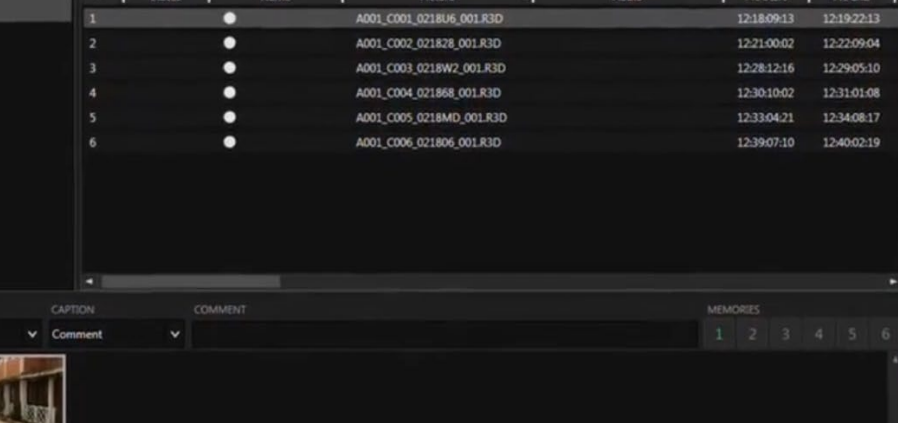
FEATURED PRODUCTS

StorNext® 5

> We have deployed Quantum QXS SSD storage. It is capable of sustaining up to eight real-time 4K streams. That means that my facility is probably the most efficient facility in the world in terms of feeding artists real-time 4K.

Larry Chernoff
CEO, MTI Film

SOLUTION OVERVIEW

- StorNext 5 collaboration platform
- StorNext Storage Manager
- StorNext M662 Metadata Appliances
- Lattus extended online storage
- StorNext QXS-2400 SSD
- StorNext Archive Enabled LTO tape library (AEL)
- NetApp E5560 and E5412 SAN storage
- Brocade DCX Fibre Channel switch

KEY BENEFITS

- Very large-scale extended online object storage provides scalable capacity, seamless operation, and better-than-RAID reliability for secure content storage with fast access to massive content for high-resolution workflows.

- High-performance shared collaborative workspace environment allows all users fast access to all content at any resolution with no slowdowns or waiting time.

- Automated migration of assets and content between high-performance online disk and extended online object storage streamlines workflow, allowing the production team access to all content at any stage of the workflow directly—no matter where it is stored.

- Instant provisioning of capacity allows the system to scale rapidly for specific jobs and tie storage capacity charges to a project.

- Multiplatform and multiprotocol support provides the flexibility to use Windows, Linux, and Mac workstations on Fibre Channel and IP networks for maximum environmental flexibility.

- StorNext open systems technology and massive partner ecosystem allows users to choose best-of-breed software toolsets and developers to integrate easily to meet changing workflow needs.

MTI Film is truly a full-service media organization providing post-production and film restoration to the entertainment market, as well as developing its own highly regarded film restoration software.

"When we were designing this facility, we sat down with Integrated Media Technologies and drew up a plan," says John Stevens, MTI Film CTO. "They really helped us solve our problems."

Offering services that range from managing dailies and post-production editing to transcoding and final content delivery across multiple formats, MTI Film has no time for mistakes, slowdowns, or equipment failure. For many years MTI trusted its storage management to StorNext—and its facility ran like clockwork.

But earlier this year, MTI made the decision to move to a 100% 4K and high-resolution workflow to better meet the needs of its distinguished client base, which are mostly in episodic television. The company's long list of client projects includes *The Walking Dead, Major Crimes, The Closer, Rizzoli & Isles,* and *Longmire.*

"Post-production and dailies services for episodic television create unusual workflow and storage challenges," explains Stevens. "We bring enormous amounts of data into our system. A typical project generates six to eight terabytes per day per project—and we normally have more than half a dozen series going at once. Our

challenge is making all of that content available immediately for producers to view, and storing it in a location that allows the post-production team to access it as needed. Speed is critical. So is shared access to the files. So is raw capacity. And all the problems are becoming compounded as we do more projects, as resolution moves toward full 4K, and as we have to support different formats and platforms."

COLLABORATIVE WORKFLOW PLATFORM

MTI Film has used Quantum's StorNext platform for its shared workflow since the company launched its digital post-production services in 2009.

"I don't see how we could do this without StorNext's shared file system," says Stevens. "It supports Fibre Channel performance for all our active online processes, and it lets our teams work on projects at the same time across our particular mix of different tools including Windows, Mac, and Linux workstations. It even supports our own in-house-developed CORTEX transcoder. Today, our system has 23 different StorNext volumes that we use for the various projects and operations."

As its business grew, MTI Film began to hit the limits of its existing storage systems and realized that a different approach would be needed to be able to continue to grow and keep

providing the fast turnaround demanded by its client base. For online storage, the organization was already using two separate systems with different performance characteristics—a flash memory-based array and many RAID arrays to deal with work in progress. But as their storage needs grew, it became increasingly more apparent that constantly adding more online RAID storage was not practical considering the limitations of the technology and the difficulty of maintaining reliable RAID volumes over a petabyte. What they really needed was storage that could scale into many petabytes without the limitations of maintaining and managing RAID, but that still offered fast access to stored content and could be shared easily by users.

THE NEED TO EXTEND ONLINE STORAGE

"Even though we had a petabyte of online shared storage, we needed more," explains Stevens. "We looked at what it would take to keep adding RAID, and it just didn't make sense. Overall, RAID doesn't really have the level of reliability that we want for these extremely high-value projects, and it is too cumbersome to add capacity, especially since we often have to ramp up quickly for a particular project. We needed a way to expand our online storage to keep more content available, but that was easier to manage and more reliable than adding more SAN storage."

After looking at alternatives, the MTI team decided that only disk-based storage would meet its performance requirements, and maintaining seamless StorNext integration was a key factor. MTI chose to deploy Quantum Lattus object storage to extend their online operations.

OBJECT STORAGE BASICS

Lattus extended online storage uses a proven object storage approach, which offers major advantages over traditional RAID storage in both scale and reliability. It scales from 100TB to hundreds of petabytes, and it protects data from equipment failure or site loss by using self-healing technology and dispersion algorithms that automatically spread the data across multiple Lattus systems, and even multiple sites. That distribution provides much greater reliability

than conventional RAID and makes access to stored content much faster than traditional tape libraries or public cloud architectures. In addition, growing the Lattus storage capacity is a quick and seamless operation.

At MTI Film, Lattus extended online storage is integrated into the production workflow by using StorNext Storage Manager to automatically move content from online storage to object storage based on policies that the team sets. Lattus keeps MTI's valuable content securely archived, but accessible using advanced object storage architecture and algorithms that distribute data across multiple resources for maximum asset protection.

GREATER CAPACITY AND CAPABILITIES OFFER GREATER REVENUE POTENTIAL

"Extending our online storage with Lattus object storage and using StorNext Storage Manager to manage it makes perfect sense for us," says Stevens. "We get massive storage capacity that is off our SAN, but that [still] gives us very fast access to the files—we've been seeing performance of 350MB to 370MB a second—through our standard StorNext file system interface. Best of all, we can add capacity quickly and easily for a specific job and tie the costs directly to the project. It's like having our own private cloud, except that the access times are much faster."

Lattus also provides an architecture that gives MTI Film clients something they have been asking for—direct access to files stored at MTI.

"Customers often want access to content while we're still working on projects," explains Stevens. "Today, we have to manually go back into the files, pull out material, and transfer it. Lattus gives us the capability of developing a system for providing fee-based direct access to files without the delays and manual steps that we have now. We're actively headed down that road."

Because Lattus is an extension of MTI's online storage rather than just a separate storage system, MTI can employ all of the advanced StorNext APIs and management techniques to develop additional sophisticated services for its clients.

STORNEXT 5: UPGRADE TO THE NEXT-GENERATION WORKFLOW STORAGE PLATFORM

As part of the project, MTI Film also upgraded to the next-generation StorNext 5 platform running on two advanced StorNext M662 Metadata Appliances for greater connectivity and better performance. This fully redundant high-availability architecture gives MTI high-speed Fibre Channel and 10GbE IP connectivity. StorNext 5 was designed to help media and entertainment professionals manage ever-larger and higher-resolution digital projects, and archive up to 5 billion files per volume—increasing performance up to 10 times over previous versions and enhancing long-term stability on large volumes.

"The upgrade to StorNext 5 gave us a substantial performance boost, especially when we moved down the directory tree," says Stevens. "Now, we see the same speed throughout the entire data set. We

made the transition over a weekend, and when the team came in Monday morning, they didn't have to change anything—it was transparent to all the applications."

ADDITIONAL STORAGE ENHANCEMENTS

In addition to deploying Lattus for extended online storage, the MTI team selected a combination of Quantum storage solutions to match the needs of other stages of the workflow. To meet the performance requirements for online film restoration and 4K production workflow, the team selected Quantum StorNext QXS storage with SSD-based flash to provide unmatched full-resolution raw 4K. Quantum also supplied NetApp E-Series Storage for the best price-performance and highest reliability RAID for MTI's daily work-in-process operations. Quantum StorNext 5 with StorNext Storage Manager ensures that content flows through all stages of the production pipeline

seamlessly and that all storage operates at peak efficiency.

"Quantum StorNext and its tiered approach to storage management have been working in M&E workflows for years," says Jason Kranitz, VP of Sales, Integrated Media Technologies (IMT). "We are proud to have participated in the design and integration effort for MTI Film's deployment of the complete Quantum portfolio of offerings, including StorNext 5, multiple tiers of disk, and Lattus object storage."

To contact your local sales office, please visit www.quantum.com

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