



StorNext Software

Quantum StorNext Boosts Content Production Fourfold at BYU–Hawaii

When Brigham Young University–Hawaii decided to transition from standard to high-definition video, its storage infrastructure proved deficient in capacity, transfer speeds, and flexibility. By implementing Quantum StorNext data management software on an IBM BladeCenter, together with an IBM DS5000 Series SAN, the university resolved its storage challenges and achieved a fourfold increase in video production.

LEGACY INFRASTRUCTURE PROVES INADEQUATE FOR HD VIDEO

Founded in 1955 and located on the island of Oahu, Brigham Young University–Hawaii (BYU–H) is an accredited four-year undergraduate institution with 2,500 students from more than 70 countries. The university internally produces a wide variety of videos, including live broadcasts of athletic events and concerts, web streams, online classes, documentaries, and promotional materials. Once filmed and edited, much of the content is posted online.

To help improve the quality of its videos, BYU–H made the move from standard definition (SD) to high definition (HD). However, the switch to HD soon exposed the frailties of the existing infrastructure. HD files are much larger than SD files, which caused a litany of problems related to insufficient storage capacity and transfer rates—for example, the university would run out of space mid-project and have to decide what older content to erase to make room for new material. These challenges were multiplied by a complex workflow: Film was captured on tape and ingested onto external hard drives using Firewire 800 before being transferred again to editing workstations.

“A big problem was the volume of storage capacity and a general lack of redundancy,” says Russell T. Merrill, Director of Instructional Media & Production. “When we shot in HD, it took hours to transfer content to our edit bays using Firewire.”

STORNEXT OFFERS “BEST SUPPORT SAFETY NET”

Merrill first became interested in Quantum StorNext® once he found out that it was Apple Final Cut Pro (FCP) certified. While he examined several other solutions, none offered the same integration options or expansion capabilities as StorNext.

“We did not want to be limited by speed or capacity,” says Merrill. “We have had experience with other clustered file systems, but StorNext has by far the best support safety net. In fact, StorNext is the glue that made everything work well together during the installation. It was great to eliminate the usual finger-pointing between vendors as Quantum was willing to support everything we were using.”

StorNext gives us the flexibility to quickly access and edit video footage in real time for our live sports programming on TV and digital signage in a cost-effective manner.

Travis Cameron
Head of Video Operations

Implementation and configuration took only a couple of days. Merrill reports that over one weekend, data was moved from existing small RAID systems and external hard drives over to the SAN.

BYU

HAWAII

“Since we implemented StorNext and our new SAN, our data transfer rate is ten times faster. We can now do four projects in the same time it used to take to complete one.”

Russell T. Merrill
Director of Instructional Media & Production

SOLUTION OVERVIEW

- Quantum StorNext on IBM BladeCenter
- IBM DS5000 Series SAN
- Brocade switch
- ATTO Celerity HBAs
- Apple Final Cut Pro
- Adobe Premier Pro, After Effects
- NetTek LightWave
- AVID ProTools

KEY BENEFITS

- Reduces project time by a factor of four
- Increases data transfer rates tenfold
- Boosts editing efficiency by at least 2x
- Eliminates videotape from the workflow
- Enables all-HD video operations
- Improves content organization
- Enhances data protection

"Our editors didn't experience any disruption," says Merrill. "Installation began on a Friday night, and when they came to work on Monday, the only thing they noticed was that there was a different drive to work from."

In conjunction with deploying StorNext, BYU-H moved from its direct attached storage architecture to a SAN-based one encompassing two IBM DS5000 disk arrays with 28TB of capacity, ATTO Celerity HBA adapters and a Brocade switch. It also switched video formats to ProRes and XDCAM. Today, a Mac Pro network connects to the SAN, consisting of an ingesting station, four edit bays, and one general-purpose workstation used mainly for capturing live content. In addition to Apple FCP, Adobe applications such as Premiere Pro and After Effects, Newtek's LightWave, and AVID ProTools are heavily utilized.

STORNEXT ENABLES IDEAL HD WORKFLOW

A central objective for BYU-H in overhauling its storage architecture was enhancing productivity, and StorNext has made a tremendous difference in this respect. Because it provides high-speed content sharing capabilities and data archiving, there isn't a need to spend time cobbling together products from multiple vendors. StorNext acts as a metadata controller for the SAN, and enables multiple professionals from different fields to work on a file simultaneously.

"StorNext allows our graphics, editing, and audio people to all access data at the same time," says Merrill. "It is a wonderful solution as we can now ingest audio and video while others are editing the same file. Our efficiency in editing is up at least twofold. In addition, our data transfer rate is ten times faster, which means we can now do four projects in the same time it used to take to complete one."

With StorNext, uncompressed HD and other large file formats can now be comfortably transmitted through the edit bays, so every project can now be in HD without worrying about space restrictions. Unlike other solutions that Merrill investigated, the software can cope with vast amounts of additional storage and a large influx of users without strain.

"In effect, StorNext has future-proofed our environment," he says. "Prior to StorNext, the university's weekly shoot took two full days to complete. Now it takes only half a day. And while that shoot is happening, staff can edit as the file is transmitted straight to the SAN in the proper format, thereby eliminating videotape."

"All our tape ingestion and format conversion tasks have gone away," says Merrill. "As a result, producing a show takes 25 percent of the time it used to, and the quality is far higher than in the past."

Merrill also reports that the content database is now more organized. Previously, paper labels were used to identify each videotape. In contrast, StorNext names all content in the system directory and can assign rights and permissions to each folder. Instructors can thus preview a project and even make changes to a project while a student is working on it.

Merrill boasts that BYU-H has the fastest data transfer speeds available—up from 800MB/sec with Firewire 800, to 8GB/sec on the SAN. That translates directly into more content, better quality, and lower costs. Instead of the long waits experienced with the legacy infrastructure as material moved through the system, many students and IT professionals can now work together to create great content in a fraction of the time. And if something fails, there is no lost time due to having to recreate video.

"By streamlining our workflow, StorNext has greatly reduced the level of stress on our user community," says Merrill. "In the event of a disk crash or other failure, the editor and client never know, because we have built-in redundancy."

"Our experience with StorNext and working with Quantum has been terrific," concludes Merrill. "We've been able to do what we had hoped to do and more, and we know we have a great partner in Quantum."

BYU-H SPORTS PROGRAMMING

As a producer of live sporting events, such as basketball and volleyball games, BYU-H broadcasts over 70% of home games across campus and on the parent BYU network. Rather than invest in a costly EVS sports video instant replay system, BYU-H connects up to six cameras to four real-time edit bays, with one edit station dedicated for highlight reels. The university uses StorNext to enable live capture and editing of events, with the additional benefit of highlights for the entire season kept on the shared SAN. Editors can piece together content on a quick timeline with video from previous games to provide filler material for halftime shows and end-of-broadcast highlights.

In addition to enabling live sports programming, StorNext is used as the key infrastructure for playout displayed on digital signage outside the stadium, which provides continuing access to the game regardless of where students may be.

"StorNext gives us the flexibility to quickly access and edit video footage in real time for our live sports programming on TV and digital signage in a cost-effective manner," says Travis Cameron, Head of Video Operations.

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