



Ohio State University

Case Study

STORAGE HIGHLIGHTS

100TB of rich media creative content

Dot Hill AssuredSAN 3930 storage array with Fibre Channel and iSCSI interfaces and 48TB storage capacity

Apple OS X Servers supporting Extensis Portfolio Server and FileMaker Server

Microsoft Exchange and MS-SQL Servers

QLogic Fibre Channel SAN

Spectra T380 tape library with LTO-4 drives

Older storage, networking and servers

BACKGROUND

Ohio State University is one of the largest universities in the US. Current enrollment exceeds 63,000 students. Within the university, the Office of University Communications handles the design and implementation of various communications materials to promote the university's wide range of programs and outreach. Wayne Tolliver, systems manager for the university communications office, manages all data and telecommunications functions for the 50 person staff. The data center includes 100TB of digital data with demanding storage requirements for large files, fast access, and long term retention of all the creative materials used in university publications, electronic media, and its web site.

Driving the demand for more storage is the extensive use of digital video. Video services changed from analog format to digital in 2001 then later to high definition video and RAW image processing in 2008. Typical storage requirements have increased from 1TB per person to 2TB per person just in the last year. All video and print images must be stored locally and available as searchable materials for ten years.

The data center environment includes 100TB of creative content, Apple OS X servers supporting Extensis Portfolio Server and FileMaker Server, Microsoft Exchange and MS-SQL Servers, QLogic Fibre Channel SAN, Apple Xserve RAID and Promise arrays. Recently, the Dot Hill 3930 storage array was added which doubled the available storage capacity to 100TB.



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Key Storage Issues

To manage and design the creative content, the Office of University Communications uses Apple servers with existing midrange Apple storage units. There were issues with failures on disk drives and the office needed to increase storage immediately with the ability to scale up to 200TB without changing to a different storage system. With limited budgets, price/performance was a key consideration. Also, the previous support options were not satisfactory.

The university needed a new storage system with these criteria:

- Must support a wide variety of applications and operating systems.
- Midrange storage that is expandable and scalable beyond 200TB.
- Must be compatible with an Apple environment.
- Desired a single storage system that could span across Apple and Microsoft environments now and in the future.
- Price was a key factor.

Backups

Within this data center at Ohio State University, incremental backups are taken for certain classifications of production data. Some of this is backed up every half hour which involved a manual process. The new storage solution needed to have snapshot capabilities to automate this process.

Tolliver: “We knew that we needed to start fresh and look for another storage vendor that could offer compatibility with multiple operating systems and applications. And we needed a midrange level expandable system. I don’t want to have several different systems that are not expandable because the management of that becomes way too complex. “Once we did some research on the market, especially when it comes to price/performance and some of the other features that Dot Hill offers, we settled on Dot Hill.”

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WAYNE TOLLIVER

Ohio State University

The Solution

In 2010, the department installed a Dot Hill AssuredSAN 3930 array with 24 2TB SATA drives for a total of 48TB raw capacity. This product is configured as a RAID6 array but also supports RAID 0, 1, 3, 5, 10, and 50 for different application needs. The AssuredSAN 3900’s combine both 8Gb Fibre Channel and 1Gb iSCSI hosts in one SAN array which allows maximum flexibility in configuring storage, enabling businesses to leverage both iSCSI and 8Gb Fibre Channel storage and perform both file and block level storage, easily adapting as needs change with a single unified SAN storage solution.

“We looked at some competitors products that offered similar features and the price point was just outside of what we could afford,” said Wayne Tolliver.

Data Protection Built In

Another key feature for this department was the ability to perform data protection at various levels. Previously, the backup process involved daily incremental backups using Atempo Time Navigator Enterprise Server. However, with the Dot Hill AssuredSAN storage solution with snapshot functionality, the first level of data protection is to take snapshots of the volumes at various points in the day. “We are very excited about the flexibility that that’s going



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to offer us for the creative folks to be able to recover the file system or creative data to a specific point in time as needed,” said Tolliver.

Results

Within the first month, several benefits from the Dot Hill AssuredSAN storage system were evident. The product has proven reliability, coming from a vendor known for supporting large OEM vendors. Next was performance. Dot Hill storage supports 8Gb Fibre Channel interface to the SAN for twice the performance of the previous storage. Faster storage means the creative teams are more productive. This also means shorter backup windows which is a direct benefit to the IT staff.

CUSTOMER BENEFITS AND OUTCOMES

Automated snapshots replaced manual ones

Shorter backup windows

Faster file access for creative teams

Several storage systems to be consolidated onto one high capacity system

“Right off the top we realized a huge benefit in speed. The backup to disk is faster. File IO to our end users is increased because we now have 8Gb Fibre Channel. And we have improvements in performance and reliability. Another benefit comes from operational improvements,” said Tolliver. “We have seen improvements in performance that are front-facing to our users with improved disk performance for file access

and we will also have improved performance that the IT guys care about on the back side with the shorter backup windows.” Finally was serviceability. According to Tolliver, Dot Hill service plans are quite affordable. “We immediately went with the 5 year gold support plan to lock in the price,” he said.

AssuredSAN 3000 Series

The AssuredSAN arrays are equipped with 2.5-inch drives or 3.5-inch drives, supporting mixed-drive configurations of SAS, SATA, and SSDs. AssuredSAN arrays also features a number of eco-friendly enhancements such as energy saving drive-spin-down and Dot Hill’s patented EcoStor™ battery-free alternative for cache memory, which leverages a combination of super capacitors and flash memory that outlasts traditional batteries nearly fivefold.

Dot Hill’s AssuredSAN 3000 Series arrays are easy to configure and manage via the RAIDar 2.0 intuitive web-based interface which provides storage setup and monitoring without the need for host-based software. AssuredSAN users gain configuration and installation efficiencies via wizards and schedulers for snapshots and replication.

Optional AssuredSnap™, AssuredCopy™, and AssuredRemote™ data protection software is available offering necessary protection for business-critical applications. AssuredSnap and AssuredCopy data protection software can be easily added at the point of sale or afterwards, through the Try & Buy menu in the management interface.

For more information about Dot Hill Systems, visit www.dothill.com.

Ohio State University’s website is located at www.osu.edu.

