

Customer Profile:



Located on the UMass Amherst campus in the Pioneer Valley in western Massachusetts, the Isenberg School of Management offers comprehensive undergraduate and graduate business degree programs. The school is accredited by AACSB International and confers the BBA, BS, MBA, Professional MBA, MS in Accounting, and Ph.D. degrees. It also awards a master's degree in Hospitality and Tourism Management and master's and doctoral degrees in Sport Management.

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- Dale A. Starr Jr., Senior Systems Administrator & Project Manager
Isenberg School of Management
University of Massachusetts
Amherst.

UMass Amherst Isenberg School of Management Consolidates Servers and Implements Reliable SAN with Unique, Affordable D-Link iSCSI-SAN Solution

The Challenge

Like many mid-sized enterprises, the Isenberg School of Management at the University of Massachusetts Amherst was interested in consolidating servers to streamline operations, improve their storage architecture, reduce downtime, and conserve resources. Their previous three-year-old storage scheme featured direct attached storage and was reaching the end of its life.

The school's IT department had some experience with VMware, the popular server virtualization software. They were interested in using VMware's ESX Server with some sort of Storage Area Network (SAN) solution. ESX Server abstracts server processor, memory, storage and networking resources into multiple virtual machines. It's the foundation of the VMware Infrastructure 3 suite. The project would allow them to consolidate 20 servers down to two mirrored servers.

With their older storage architecture, they were regularly sending emails out to the users about service disruptions. Their user base includes 145 full-time faculty and staff, plus 120 computer lab desktops that serve students. The network is used primarily for operations (shared storage, faculty files, documents, multimedia, etc.) and student information and documents.

"A fibre channel solution was beyond our means," said Dale A. Starr Jr., Senior Systems Administrator & Project Manager at the UMass school. "I started looking at iSCSI. The key was VMware and ESX. I needed something to make that work as a storage platform. I needed SAN storage where these multiple servers could get at it."

The school discovered the D-Link DSN-3400 1x10GbE iSCSI SAN Array. "I liked it because it was one of the only storage solutions out there with a 10G port on it," said Starr. "That was a big deal. I wanted to make sure it had enough capacity in terms of bandwidth."

The Solution

Starr's organization eventually chose to go with the iSCSI I/O standard and D-Link's DSN-3400 1x10GbE iSCSI SAN Array. "The D-Link product stood out because of the 10GB port," said Starr.

"We are now able to manage machines much easier, and, for the most part, we're able to do hardware maintenance without bringing machines off line now," said Starr. "We're saving a considerable amount of time – just in downtime savings. Every time I do something to a server I don't have to unplug it and reboot it. And chances are we're doing better with power consumption and cooling."



The Isenberg School of Management, located on the UMass Amherst campus in Massachusetts, installed D-Link's enterprise network storage solution to work with their VMware's ESX server for operations and student information and documents.

Business Class Network Storage



**DSN-3400 1x10GbE iSCSI
SAN Array**

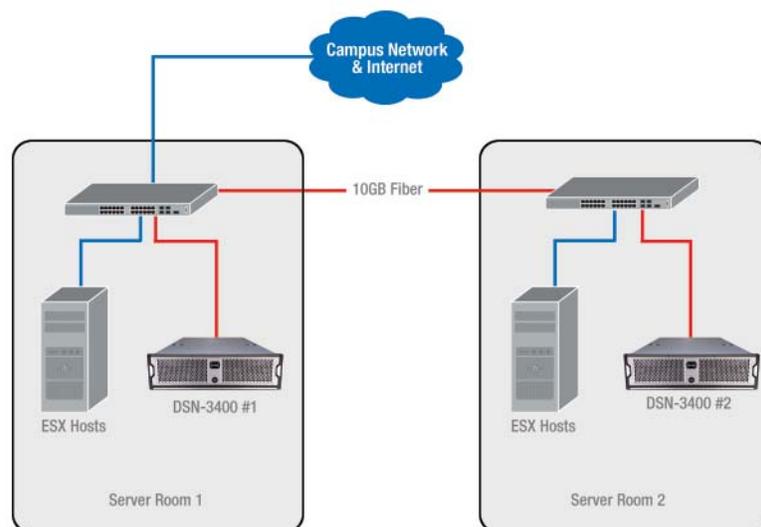
- Integrated iSCSI System-on-a-Chip (SoC) Solution that can Handle over 80,000 I/Os per Second
- Single 10GbE Port
- 15TB Capacity with 1TB Hard Drives (Supports Higher Capacity Drives as They Are Introduced)
- Embedded Disk Controller Supporting RAID Levels 0, 1, 1+0, and 5
- 15 drive bays
- 3U

UMass has two DSN-3400's attached to their 10GB backbone. Two Windows file servers that replicate each other are attached to the two DSN-3400's, providing redundancy. They use a third party back-up utility (for hot back-ups and scheduled back-up) that interfaces to ESX. The solution helped them consolidate from 20 servers on two mirrored servers. "It dramatically reduced the amount of hardware we have in operation," said Starr.

needed a technology we could be comfortable with three to five years out."

The set-up and implementation was easy and straightforward. "Most of the installation time was spent unpacking the thing," said Starr.

In short, the D-Link SAN array helped UMass replace a previous architecture that simply wasn't resilient or dependable. Prior to installing the ESX-iSCSI-



By installing two DSN-3400's to their 10GB backbone, The Isenberg School of Management was able to improve uptime and ease maintenance.

Easy Choice, Easy Installation

The school looked at similar equipment from a couple of other leading vendors, but "no one had 10G interface at the time," said Starr. "That was important to me, because we're a college within the University of Massachusetts. As far as size goes, we're equivalent to a mid-sized business, and we don't get funding. So, to fit our budget cycles, we

DSN-3400 solution, they could not offer reliable uptime. "The D-Link solution keeps our systems up quite a bit more than we have in the past, and maintenance is a lot easier," said Starr. "Now the service disruptions are, knock on wood, few and far between."