

Randolph College Boosts Storage I.Q. Using StoneFly IP SAN

Achieves Storage Scalability, Server Virtualization and Consolidation, and Dramatic Energy Savings

Located in Lynchburg, VA, Randolph College boasts a tradition of excellence as well as a majestic setting at the foot of the Blue Ridge Mountains. The institution's most famous alumna is novelist and activist Pearl S. Buck (class of 1914), a winner of the Pulitzer Prize and the Nobel Prize for Literature. Formed in 1891 as Randolph-Macon Woman's College, the school upholds a 115-year history as one of the South's top institutions of higher learning for women. On July 1, 2007, its name was officially changed to Randolph College as part of a milestone decision to admit men for the first time.

Challenge

- Increase storage capacity
- Replace existing unreliable storage solution
- Implement robust disaster recovery and business continuity initiatives
- Avoid high energy consumption in data center

Solution

StoneFly Hybrid Storage Concentrator (HSC)

Benefits

- StoneFly IP SAN provided substantial capacity and scalability for ongoing storage demands
- Cost-effective price point
- Easy-to-use server virtualization and consolidation for redundancy and DR
- Server consolidation drastically reduced power consumption

Randolph College is highly diverse, with students emanating from 44 states and 40 countries, a minority enrollment of 22 percent in the class of 2011, and a curriculum that emphasizes global awareness. To keep students and faculty on the cutting edge of technology, the college maintains a nine-person IT staff that is constantly on the go. According to Cathy W. Evans, director of IT, Randolph's technology needs have grown exponentially as the campus has taken advantage of the wealth of digital tools available today.

The Challenge

The IT environment at Randolph College relies upon a foundation of 52 servers, which command substantial energy to the point that they are pushing the power limits of the organization. With several "green" initiatives in place on campus, Evans wanted to see IT

do its part, and in 2007 she began to contemplate strategies -- such as server consolidation and server virtualization -- to reduce energy consumption.

At the same time, several of the servers have been starting to slow down and show their age. In fact, the IT team faced one of its most daunting challenges when one of these older servers recently failed. The server, which was designated for storage, managed almost 600GB of critical data for the campus. After a day and half, using backup tapes and labor-intensive man-hours, the college was able to restore the data, but IT then realized that it was necessary to put a more robust disaster recovery plan in place.

“We knew that we were very lucky to be able to recover the data, and we also saw the incident as a warning sign,” said Evans. “We had been talking about upgrading our storage for quite some time, and we used the server failure as a catalyst to move forward with our plans.”

These plans included less reliance on an inflexible network attached storage (NAS) device that was difficult to manage, and didn’t scale to support their growing needs.

The Solution

To help determine the best storage choice for Randolph, Evans hired Benchmark Systems, a provider of technology solutions and services, with headquarters in Lynchburg and satellite offices in both North Carolina and West Virginia. Benchmark’s familiarity with IP SANs – including understanding their capabilities for supporting a server virtualization strategy – made the technology an easy choice over other SAN options such as Fibre Channel. Virtual servers rely

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heavily on IP networks for connectivity, so using iSCSI storage with virtualization initiatives is a natural fit. Direct virtual server backups to tape or disk are easy to implement, since the virtual machines act like regular servers, and offer streamlined administration for primary storage and backups.

Benchmark previously researched several IP SAN vendors including EMC, NetApp, EqualLogic and LeftHand Networks. But Bruce Blankinship, commercial sales manager, found the best value in StoneFly, Inc., an iSCSI market pioneer formed in 2000 to create simple-to-operate,

high-performance IP SANs supporting advanced storage services such as server virtualization. The StoneFly Hybrid Storage Concentrator (HSC) was chosen as the best-of-breed solution for Randolph. With 8TB of raw storage capacity, the HSC system is a simple, rapid-to-deploy IP SAN in a box that is ideal for growing storage environments. All IP SAN functions are consolidated within a single chassis for virtualization, management and storage. With innovative cluster-mirror technology for full redundancy and availability, the HSC is ideal for entry-level and mission critical deployments.

“The HSC is designed to scale, which is why it’s a great fit for a rapidly expanding organization such as Randolph,” said Blankinship. “It gives them the ability to start simply, and then grow their system into a more complex solution. At the same time, with the HSC, Randolph can dive right into server virtualization to gain an immediate impact on cost and energy savings.”

Another factor that sold both Randolph and Benchmark on StoneFly was their technical support. Prior to the sale, Blankinship held detailed conversations with Ken Friend, channel sales director for StoneFly. Ken’s technical knowledge and keen understanding of what they wanted to achieve at Randolph College convinced the Benchmark team that StoneFly would work with them every step of the way through implementation and beyond.

The Benefits

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Upon receiving the IP SAN from StoneFly, John Piercy, technical services manager at Benchmark, spent time off campus preparing the system for installation. When the install date arrived, all he had to do was rack the SAN, plug it into a switch and the campus intranet, and go. The team was very impressed with the ease of installation of the HSC.

“They started the install at 5 p.m. on a Friday night, and by 8 p.m., they were done,” said Evans. “Since going live, we’ve been extremely pleased with the ease of use of the system.”

Almost immediately, Randolph’s IT group began to take advantage of the server virtualization capabilities that the HSC provides. Using VMware, they have been able to leverage the vast amount of easily accessible storage on the IP SAN to achieve new levels of redundancy – made possible through the use of virtualized servers. The virtualization process enables IT to make virtual copies of the images stored on each server, providing the school with a second operational copy of the data.

“The use of VMware with the StoneFly IP SAN has been extremely easy and rewarding,” said Piercy. “We simply point the VMWare Server application to the location on the SAN where we put the server images, and we’re done. It’s that simple.”

Within one month of installation, they had already virtualized four servers, and there are plans to transfer 12 additional server images to the SAN by year’s end. An added bonus has been a significant reduction in energy consumption; to the point that any concerns about exceeding power limits no longer exist. Printers can now be managed by a virtualized print server image on the SAN, meaning that the old physical print servers, for example, can be turned off. Not only does power usage go down with less servers to contend with, but now Randolph doesn’t need to invest in as much additional server hardware when it can use images on the SAN to meet a large portion of its daily IT needs.

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“We are projecting to achieve a return on investment with the HSC by the end of the year, if not before,” said Evans. “The immediate savings has come with our ability to consolidate servers, avoid purchasing additional hardware, and spend less money on power.”

The virtualization strategy, combined with the IP SAN, has also given Randolph a testing ground to evaluate new IT ideas, particularly in the area of security. “The school now has the ability to create storage volumes for exploring new applications, virtual appliances, and other IT possibilities for the campus,” said Piercy. “Instead of being bogged down by technology, the IT team has gained a new sense of freedom in terms of considering new options that will keep Randolph ahead of the curve.”

The HSC is now managing approximately 900GB of data, with plenty of room to grow. In the future, the school plans to expand its business continuity initiatives by buying a second IP SAN for installation at an off-site or remote location, where critical data can be further replicated.

“We’ve gotten a huge amount done for Randolph with the IP SAN in just a few short months,” said Blankinship. “Our short-term goal was to simply eliminate one bad machine and increase our storage capacity, but we ended up with that, and so much more. The HSC clearly serves as an anchor for an extremely valuable virtualization strategy that is already paying off in dividends.”

Technology Partner: Benchmark Systems (www.benchmark-systems.com), headquartered in Lynchburg, VA.

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