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School Devises New Ways To Backup NetWare

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NetWare lives at Minnesota's Hamline University. Although industry naysayers predicted its demise, Novell's flagship continues to faithfully power the St. Paul institution's campus population of about 5,100. Unfortunately, backups at the nationally-ranked ivory tower often didn't fly.

"Only three people manage our entire IT environment, so we rely on technology and redundancy," said Anthony Schroeder, director of network services. "For example, when Server A goes down, the system automatically switches to Server B. But our previous backup solution wouldn't follow along to Server B."

Consequently, backups frequently failed, Schroeder said. "In other words, that solution didn't support our NetWare implementation very well."

An encounter with Syncsort's Backup Express during Novell's March 2004 Brainshare conference set an overhaul in motion.

After Brainshare, Schroeder contacted Hamline's reseller partner and received two recommendations in addition to Syncsort. "But we didn't get very far with them," Schroeder said. "It quickly became obvious they didn't provide the Novell support we needed."

At Hamline, the LAN infrastructure includes approximately 50 servers running diverse applications such as Oracle for enterprise resource planning (ERP) and Novell GroupWise for e-mail. And, there are SQL databases for departmental research and library materials.

For Hamline's 2.5-terabyte shared-disk Xiotech Magnitude storage area network (SAN), a Sun Fire V240 acts as the master server. Incremental backups are conducted nightly, with full system backups completed every Saturday night. The Sun master backs up Hamline's other servers over Gigabit Ethernet, with two exceptions.

First, a Windows node acts as a device server and copies e-mail files to a direct attached storage (DAS) drive on the SAN every night. During the day, this machine backs itself up.

The other exception is a Sun Solaris box that runs a mirrored Oracle database. When Saturday night full backups are conducted, Oracle is shut down, the mirror is broken and then Oracle is brought back online. The mirrored database is backed up and, when finished, resynchronized to begin the process again for the next week.

The Sun master and the two device servers, are Fibre Channel-attached to a 40-slot StorageTek tape library and three LTO-1 tape drives. Thus, backups on these servers are accomplished without impacting LAN performance.

But, Hamline's most challenging backup problem was the SAN's four-node NetWare cluster for the institution's largest data repository of approximately 120 gigabytes. "With our previous solution, this was one of our biggest headaches," said Schroeder.

Keeping its $400,000 annual IT budget in mind, Schroeder's staff evaluated whether Syncsort's offering deserved a slice of the pie.

"We asked ourselves questions like, 'What are the day-to-day maintenance issues? What does it take for the system to back up our information reliably? How much human time does it all require?'" Schroeder said.

While privately-funded Hamline isn't constrained by the RFP process, vendors don't get a free pass. "We definitely do our due diligence," Schroeder said. "Eventually, this meant bringing Syncsort's software into our environment as a demo, and it worked."

Just two months post-Brainshare, Syncsort representatives flew out to court Hamline's CIO. "I wanted to be sure of our direction before getting our executives involved," Schroeder said. Within days they inked a deal.

Implementation occurred in September, with Syncsort supplying a technical advisor to work side-by-side with Schroeder's crew. "It took only four days," Schroeder recalls.

"Everything went smoothly except for one problem," he continues. "Backup Express selects servers round-robin. However, for our three master LAN servers, we wanted to select the order ourselves." Fortunately, Syncsort programmed a fix in less than two weeks.

With less than a year since deployment, benefits are still being calculated. Personally, Schroeder's redirecting about four hours a week to other projects. But, there's also intangible rewards. "Before, it was Russian roulette every morning," said Schroeder. "Now, stress is way down and productivity way up because we're not jumping between tasks as we try do our work and salvage failed backups."

Users are also gaining. "Previously we forced users to log off from 10 p.m. Saturday through 10 a.m. Sunday," Schroeder said. While this procedure might dovetail with a typical collegiate crowd, Hamline's law school provides a weekend program with Sunday morning sessions.

Not only is Hamline's IT system now available for Sunday classes, but users may also stay on 24/7 said Schroeder. "We recommend logging off Saturday night from 10 p.m. to 8 a.m. because we perform other system maintenance during that time."

Yet even with new backup capabilities, some wish list items remain. "For instance, we'd like to backup up e-mail two to four times daily instead of just once at night," said Schroeder. "So we're negotiating additional licensing with Syncsort. But to backup more frequently, we'll also need to implement disk-to-disk and we're still determining those costs."

Not surprisingly, some backup blips still arise. "Every once in a while we'll have problems that require vendor technical support," Schroeder said. "And, we continue to have a hardware issue that an integrator is helping us to figure out."

These hurdles aside, Schroeder's excitement is palpable when he discusses the overall benefits of the implementation. "Reliable backups are also allowing us to consider ways to leverage the technology further," he said. "Even better, I now have time for bigger projects, like bringing a campus-wide Wi-Fi system online."