

Challenge

- Accommodate rapid data growth for Ohio school district in time of declining funds from the state.
- Provide a scalable primary storage system for Linux Windows and VMware ESXi servers.
- Offer a reliable and scalable storage system for disk to disk backups.

Solution

- Two EtherDrive 1521 Storage Appliances
- EtherDrive VS21 Virtual Storage Appliance
- Five EtherDrive SAN HBA 2-Gigabit PCI-E NICs

Benefits

- Reliable storage that allows for incremental growth and incremental investment.
- Scalable storage system for use as disk to disk backups.
- Economical, Scalable Disk to Disk Backup

North Canton Schools



Introduction

Named as one of the “Top 100 Places to Live in America” by Money Magazine in 2007, North Canton Ohio has seen its schools ranked “Excellent” by the Ohio Department of Education for academic curriculum and programs as well as a growing population expanding its roster. And, like many US cities today the city is struggling to keep their award-winning programs and educational needs balanced amidst shrinking budgets. With over 5,000 teachers, administrators and students online 24x7x365 with remote access to city school systems, data storage growth was doubling fast, and there was no cost effective way to add on to district storage.

Over the past two years, North Canton Schools’ network systems manager John Fano saw data storage demands growing while funding options, including the public and private sector grants the district had utilized, no longer available or even funded. To address the spiraling costs of IT storage and keep operations running optimally, Fano and his team researched cost effective storage options, turning to CORAIID’s AoE-based EtherDrive storage as the simple, affordable solution.

The Storage Challenge

North Canton has a volatile IT environment that is accessed by a large number of users of varying computer skill levels. The district has evolved their storage infrastructure to effectively address the schools’ growing data needs and this diverse user base as the district expands the role of technology in their internal systems and to accommodate educational programs.

Because the heterogeneous environment historically included both Windows and Linux servers, IT was forced to duplicate files for storage purposes and required extra resources and maintenance to manage different storage arrays and systems in the infrastructure. Owing to that, selecting storage that “wasn’t married to a particular file system or platform was a key requirement for the district.” Moving from a mix of HP servers with local SCSI arrays and home-built servers with SATA arrays, Fano’s storage requirements were that it “had to be simple to manage, simple to setup, accessible to multiple servers, grow as needed, enterprise class, and easy on the budget.”

To achieve those requirements, North Canton deployed EtherDrive SAN to provide storage across a complex environment running Linux, Windows, and VMware ESXi servers across seven schools and three administrative buildings. With over 1700 computers and over 5000 users network-wide requiring 100 percent uptime, North Canton is now 98% virtualized on the server end and runs VMware ESXi host servers, relying on CORAID EtherDrive SAN technology for all storage needs.

EtherDrive appliances accommodate the estimated 300-400 GB total data across all district (at deployment time) and now assumes more data growth as North Canton evolves its curriculum and increasingly relies on technology in education. Today the district manages about 2.4 TB of user data and 1 TB for VMware storage and is running out storage again as demands hit the 1-2 GB mark daily. Fano acknowledges that at the end of each school year they reclaim some storage with a policy of purging student data, but explains that it never drops back to the same point.

“CORAID EtherDrive provides a tremendously better value than other storage.”

- John Fano, Systems Administrator

Having historically used local RAID arrays for storage, Fano and his team had explored other popular storage options including Fibre Channel technologies until he saw the price and complexity.

“I’ve never felt my own jaw hit the floor,” commented Fano. “We have to do all this with a budget that is a little more than what a middle class family makes.” iSCSI, too, was determined to be a good match for North Canton’s needs. Pricing from iSCSI vendors, too, came in way beyond the district’s budget and would not expand to accommodate growing storage needs easily or cost effectively.

Fano then discovered the AoE protocol was an open storage option that would allow them to design a home grown storage solution using a Linux server in a rackmount case that he estimated would hold at least 15 drives that it could “just export the disks on the network and fashion a kind of ‘MacGyver-like’ solution together.” Fano’s team had been forced into developing home grown systems in the past using open source technologies and was contemplating

the task when CORAID’s EtherDrive solution came into focus.

Today, North Canton School’s storage infrastructure runs on EtherDrive exclusively. Two EtherDrive SR1521 appliances, an EtherDrive VS21 Virtual Storage Appliance, and five EtherDrive SAN HBA 2-Gigabit PCI-E NICs make up the district’s storage infrastructure. Fano estimates that the SR1521 unit took about 30 minutes to setup from opening the box to powering the unit on in the rack. He does explain that the VS21 appliance took a bit longer until he realized that the device is very much like using LVM on a Linux box.

When Fano put CORAID to the test, CORAID got top honors. “We had fairly lengthy discussions with the CORAID team in advance of our deployment to help us design the right system,” says Fano. “We were impressed with how quickly they resolved problems and the depth of support. We had a drive failure issue where the drive was failing but not reading as a failed drive so the engineering team methodically worked with us through the logs and SOS output to discover the failed drive and were very helpful to us during our participation in the VMware HBA BETA program.”

With EtherDrive’s performance advantages and storage capacity, standard features such as disk to disk backup and AoE storage’s scalability and adaptability, the City of North Canton Schools can focus on the next generation and education. EtherDrive provides the most cost effective storage and I/O performance with minimal management burdens.

“CORAID EtherDrive provides a tremendously better value than other storage. Balancing our expanding technology needs against a shrinking budget was going to be a huge challenge, and we were going to have to give up functionality I was sure,” said Fano. “Finding a simple solution that let us ‘plug and play’ with our existing infrastructure and easily scale at incremental costs as our needs grows was a huge bonus to us. When I looked at a cost savings of almost six times that over a Fibre Channel solution, EtherDrive’s simplicity of less than 30 minutes to set up the appliances has well exceeded our expectations. I see Coraid as a permanent part of our future.”