

Valley City State University Moves Up to Tintri Storage



Devastating Flood Leads to Implementation of Much More Robust and Higher Performing Storage Platform

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Industry

- Higher Education

Geography

- Valley City, North Dakota

Virtualization environment

- VMware vSphere
- Traditional storage: Coraid

VM profile

- MS SQL and Oracle database applications, web applications

Key challenges

- Existing storage vendor went out of business, ending support on existing infrastructure. Coraid systems also provided poor performance and were difficult to manage.

Tintri solution

- Tintri VMstore™ T820 systems

Primary use case

- The Tintri systems are being used to support all online student learning systems and University applications.

Business benefits

- Deployed new systems in less than 15 minutes
- Improved disaster recovery
- Accelerated system performance by 50-60%
- Simplified storage management
- Obtained the Tintri system for less than half the price of legacy storage options

Valley City State University

Valley City State University (VCSU) is one of the eleven institutes of higher education in the North Dakota University System. Founded in 1890 as a territorial normal school, VCSU now offers over 80 undergraduate programs in business, information technology, communication arts, social science, education, psychology, fine arts, health, physical education, math, and science. The university also offers graduate studies in the field of Education.

IT Challenges

“We started playing around with virtualization back in 2009,” noted Erik Kringlie, director of data centers and virtualization for Valley City State University. “We tried out a few different hypervisors, but we didn’t have any shared storage or redundancy built into our environment. Although we have a fairly small data center, our University depends heavily on IT technology. The majority of our 1,500 students take all of their classes on-line.”

A Devastating Flood

VCSU’s search for a new storage platform began in the Spring of 2009, when North Dakota experienced a massive flood. “Our primary data center was on the ground floor right across the street from the Sheyenne River,” Kringlie recalled. “Our entire campus was evacuated by the National Guard. We were forced to physically move all of our data center infrastructure to a new building within a 24-hour period, and then quickly get it back up and running quickly so our students could complete the semester on-line. We were able to get all of our virtual servers back online within a few hours. But 80% of our environment was still on physical servers, and it took 48 hours to get those running again. That lesson taught us that we needed to virtualize our entire environment to ensure faster recovery from a flood or any other disaster.”

“As long as our flash hit ratio is 100%, we know the Tintri is doing everything else automatically for us. We just create new VMs, put them on the Tintri, and away we go.”

Erik Kringlie, Director of Data Centers and Virtualization, Valley City State University

Building a New Data Center

When the floodwaters finally receded, the State of North Dakota gave VCSU more IT budget to build a new data center located farther from the river. Kringlie and his team took that opportunity to virtualize nearly all of the University’s remaining workloads, using the Dell hypervisor and Coraid storage. VCSU then received a letter from Coraid saying it was going out of business and would no longer support the storage systems. “That’s what triggered our search for a new storage vendor,” noted Kringlie. “We needed to procure new storage systems quickly, and we needed them to be very VMware friendly.”

Evaluating Storage Options

Kringlie and his team started by evaluating storage systems from EMC and several other legacy vendors. One of VCSU’s IT partners then suggested they consider the Tintri systems. “We looked at the Tintri solution, did the online demo, and immediately loved what we saw,” noted Kringlie. “We only have two system administrators that manage everything in our IT environment, including the hypervisors, network, storage, servers, and OS. Since we can’t afford to hire experts for every single system, we needed to find a ‘plug and play’ solution that could be managed by IT generalists. Obviously, EMC was not the right choice due to its complexity and the manpower that would require. Tintri was the best option for our environment, so we decided to give it a try.”

Choosing Tintri

Tintri provided the University with a demo unit for testing. “The Tintri setup took just 15 minutes,” Kringlie reported. “Once we saw how easy it was to install and manage, we were sold. Plus, Tintri is very competitively priced compared to all of the other storage options. We were able to obtain the Tintri T820 system for less than half the price of the EMC system.”

Faster Performance for Two Large Databases

VCSU’s IT team had been trying to improve performance of the University’s two large database systems on the Coraid systems. “Our first database system is called Blackboard, an online learning management system that runs on Oracle,” Kringlie explained. “We also have a home-grown assessment system that runs on MySQL. We tried buying some extra SSD disks for the Coraid, but the databases were still very slow. When we finally moved our Oracle and the MySQL systems over to Tintri, we immediately noticed a 50 to 60% increase in performance. Our database administrators were ‘crazy happy’ with the change. They were blown away by how quickly they could perform queries, and the time it took to do nightly backups went down to almost nothing. Improving performance wasn’t our primary goal for the project, but it was a great added benefit.”

Easier Management

Kringlie also appreciates Tintri’s management simplicity. “We spent a lot of time managing volumes on our old Coraid units,” he explained. “We were constantly moving things around that weren’t performing well. Tintri really is a ‘set it and forget it’ platform. The management interface enables us to see system performance metrics in one window. As long as our flash hit ratio is 100%, we know the Tintri is doing everything else automatically for us. We just create new VMs, put them on the Tintri, and away we go. We don’t have to worry about what volume our data is on anymore, making our jobs much simpler.”

Launching New Initiatives

“We decided to stop hosting MS Exchange in-house and move everything to Microsoft Office 365 in the cloud,” Kringlie said. “Once we moved the mailboxes over, everyone was very happy with the new environment. There’s now a big push from our management to use the SharePoint piece of Office 365 as well. We will start by moving our filesystems up to the cloud and using more of the Office 365 modules. That’s a project I wouldn’t have been able to do without Tintri. Since we aren’t spending all of our time managing the Coraid systems anymore, we have the time to tackle these projects.”

Buying a Second Tintri

After seeing how well the Tintri performed at the University's main datacenter, VCSU purchased a second system for its remote site. "We were hoping our old Coraid would hang in there until our next budget cycle," Kringlie said. "But unfortunately, that didn't happen. We had a major outage in our second site. The Coraid system failed, and it took more than a day to get everything back up and running. We lost a small amount of data, but luckily we were able to restore the missing data from our backups. At that point, my CIO said it was time to replace the remaining Coraid systems, and he'd find the budget to get it done. Our second T820 should be here within the week."

Future Plans

VCSU is now making plans to purchase Tintri ReplicateVM™ and SyncVM™ during the University's next budget cycle. "Our developers do a lot of manual cloning of VMs, so SyncVM will allow us to test something and then re-sync it with the live copy. ReplicateVM will be a great addition too, since it provides high-performance per-VM replication for data protection and disaster recovery. Our developers watched both of the Tintri demo videos and are really excited about implementing the solutions. By switching from Coraid to Tintri, we are far better off today in terms of disaster recovery and system performance. Our move to Tintri was probably the only good thing that happened as a result of that natural disaster," concluded Kringlie.



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