Elon University Graduates to Tintri VMstore™

VMstore

Elon University is a private, nonprofit coeducational liberal arts university located on a historic 636-acre campus in the City of Elon, North Carolina. Elon University currently enrolls 5,903 undergraduate and 728 graduate students, and employs 424 full-time faculty members.

The Challenges: Lack of Flexibility, Unwieldy Performance Monitoring

Elon University virtualized its IT environment in 2006, using the VMware vSphere hypervisor, IBM servers, and an EMC CLARiiON CX3 SAN with Fibre Channel. The University upgraded its CLARiiON CX3 system to a CX4 system in 2009, and replaced all of its IBM infrastructure with Cisco UCS servers in 2010. In 2011, they purchased an EMC VNX system for an upcoming VDI project using Citrix.

"Our IT department runs all of the virtualization infrastructure for the University, including the storage, web servers, load balancers, and everything else," said Greg Colby, systems infrastructure architect at Elon University. "Storage and server management were a big pain in the Fibre Channel environment. Every time we added a new server, we had to deal with all of the extra stuff and 'fun stuff' that comes with Fibre Channel. We tried to follow best practices on how many LUNS we should have, how big the VNX volumes should be, and how many VMs should be placed on them. We ended up with twenty-six LUNs that were all thick-provisioned. We then performed the conversion from thick-provisioned LUNs to pools, and thin-provisioned our VMS volumes. But we still weren't getting the flexibility we needed out of those systems."

Colby was the only IT administrator managing the EMC systems. "EMC management is quite convoluted," he shared. "Every time I had to do something to the systems, I had to refer back to the documentation to remember how to complete all of the steps. As a result, I ended up spending a couple of days each month just managing storage."

Performance monitoring and troubleshooting were also very difficult in the legacy environment. "Whenever our users had performance issues with their applications, they'd call and ask us to check the SAN and servers to make sure everything was okay. We weren't always able to find the source of the problems, since EMC doesn't provide any included tools that can do that. They do offer optional paid tools for troubleshooting, but they're very expensive and the output isn't super helpful. In order to determine the cause of our slowdowns, we'd export some of our data, send it off to EMC, and they'd email us a report a few days later. Unfortunately, the information they returned didn't always help us determine the cause of the issues."

The Solution: Tintri VMstore

Realizing the shortcomings of its environment predicated upon standard infrastructure, Elon University started to look at options for refreshing its storage when they were reaching the end of the maintenance agreements on their two existing SANs. "I must confess, the only reason we brought Tintri in to bid was to get a competitive quote, since we had every intention of just renewing the EMC support and buying another EMC VNX to replace the aging CX4," Colby admitted. "Before we made our decision to go with EMC, one of my co-workers forwarded me an email with some interesting info on VMstore. My first impression was that the VMstore system looked way easier than it had a right to!"

After reviewing the VMstore information and reading industry blogs on the VM and application-aware systems, Elon University invited Tintri in for a demo. "We were very impressed with what we saw, particularly around the ease of management," Colby reported. "Not only would the VMstore system reduce the amount of time I was spending on storage, it would enable anyone in our department to manage the environment without putting a lot of time in upfront to figure everything out. Management simplicity was one of the main reasons we picked VMstore."

Challenges

- Performance issues with existing storage, lack of visibility, difficulty managing LUNs

Solution

- Tintri VMstore

Results

- Simplified management and reduced administrative time
- Eliminated the need for a dedicated storage specialist
- Reduced CapEx and OpEx
- Obtained high performance for VDI deployment
- Reduced storage footprint by 10x

Tintri
Intelligent Infrastructure

Colby was also impressed with the very competitive price point of the VMstore platform. "The proposal for the VMstore systems and all of the software came back way lower than we anticipated," Colby admitted. "To get the price for the EMC systems to be even close to Tintri's bid, we had to remove almost all of the additional features from the EMC proposal, including the flash drives, the extra management software, and the reporting tools we would need. At that point, the only thing left was just the bare EMC storage systems. When we factored in VMstore's great performance and easy manageability with the surprisingly low price for the hardware and software, our decision was easy."

The Results: Simplified Management, Lower Overhead

The initial benefit of Intelligent Infrastructure was obvious. "We had the Tintri systems up and running in just twenty-five to thirty minutes," Colby shared. "That was much faster than the EMC deployments. When we replaced our CX3 with the CX4 last year, it took well over two days to get everything deployed and configured."

Elon University deployed the new VMstore systems at two locations, one at the University's primary site for all production data, and a second one running redundant services and its dev/test environment. Colby then used VMware vMotion to move 20TB of data over to the new VMstore systems. Elon University is now running 200 virtual desktops, all of its ERP systems, SQL databases, web servers, and several application servers on the two VMstore systems.

"The footprint and power savings are significant with VMstore," Colby reported. "Our one CX4 system alone filled half a rack, compared to just 3RU for VMstore. All total, we were able to reduce our storage footprint from 60RU down to 6RU by moving to VMstore."

"We were impressed with the simplicity of the VMstore interface," Colby said. "I'm used to dealing with storage with a super- complicated interface. With EMC, there were fifty different places we could go to for each task. Outside of running the occasional firmware updates—which are very easy—there isn't any day-to-day management needed with the VMstore systems. Plus, with VMstore's analytics and VM-level visibility, I can just look at a graph and immediately see that storage is not the bottleneck."

Elon University also purchased a replication license for the two VMstore systems. "We are replicating our ERP system and a few of other 'tier-0' applications on a nightly basis to our secondary location," Colby explained. "The per-VM replication is a huge benefit for us. We are currently using Veeam as our disaster recovery option for our ERP system. My hope is that we will use VMstore to replace that solution soon since it will save us thousands per year."

Before going live, Colby performed several tests on the VMstore demo system to determine the amount of IOPS they could expect out of the system. "VMstore's performance is impressive," noted Colby. "Our performance requirements are well below the IOPS we reached during our evaluation." We aren't even touching the limits of what our VMstore system can do."

"Tintri support has been phenomenal," Colby acknowledged. "On the rare occasion that something happens, the system automatically phones home and we get an email shortly after that. Generally, it's not a problem with the VMstore, it's usually an environmental change where we're doing power or network maintenance that causes an alert from the system. We've always received prompt responses to any issues, and the support reps have been very helpful and easy to work with."

"Our virtual server environment is growing rapidly every year — much faster than we ever expected it to. There's always an unanticipated new project or service need that crops up. The VMstore interface shows us exactly how long we have until the systems will be full based on current growth rates. VMstore makes it a lot easier for us to plan our IT budgets based on those kinds of metrics," concluded Colby.

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Greg Colby, Systems Infrastructure Architect, Elon University

Experience Different! For more information on how Tintri VMstore can turbo-charge your business success through a simple, Intelligent Infrastructure, visit tintri.com/vmstore.