

# LONE STAR COLLEGE SYSTEM

## EMC and VMware cloud infrastructure transforms delivery of IT as a Service to multi-campus college



### ESSENTIALS

#### Challenges

- Frequent system outages disrupting use of classroom technology
- Distributed infrastructure costly and difficult to manage
- Lengthy lead times for rolling out new services

#### Solutions

- EMC CLARiiON, EMC Celerra, and EMC Centera storage
- EMC RecoverPoint
- EMC Avamar
- EMC NetWorker
- VMware vSphere, vCenter Site Recovery Manager, and vCloud Director

#### Key benefits

- Saved over \$600,000 in capital expenditures
- Energy use reduced by nearly 70 percent
- Achieved “five-nines” availability for all critical applications
- Accelerated delivery of new IT services from months to days

Lone Star College System is the fastest-growing community college system in Texas and serves more than 95,000 students. The college system was finding it increasingly difficult to meet increasing demand for IT services with an aging infrastructure of distributed data centers across its many campus locations in greater Houston.

“The economic slowdown and our top-notch instructors have contributed to rapid expansion of our school system. Our student community has been growing at an average of 12-25 percent each semester in recent years and we’re expanding from 13 to 18 locations this year,” says Shah Ardalán, Lone Star College System’s vice chancellor and CIO.

“With our prior infrastructure, we were struggling to meet growing demand for IT services while dealing with frequent system outages. An instructor only has 50 minutes of class time, and if the online lesson plan they’re using isn’t available, that valuable instruction period is lost. As our infrastructure grew, it also was becoming more costly and time consuming to manage,” says Link Alander, Lone Star College System’s associate vice chancellor of Technology Services.

### COMPREHENSIVE EMC AND VMWARE CLOUD INFRASTRUCTURE

Alander and his team took on a massive system-wide overhaul and implemented a comprehensive EMC® and VMware® cloud infrastructure to transform IT operations to an on-demand model.

The project consolidated 13 distributed IT infrastructures to two replicated data centers 27 miles apart, supporting 450 terabytes of EMC Celerra®, EMC Centera®, and EMC CLARiiON® storage. The VMware environment consists of vSphere™ as the virtualized foundation of Lone Star College’s cloud infrastructure, vCloud™ Director for secure resource management of 824 virtual machines, and vCenter™ Site Recovery Manager (SRM) for automated disaster recovery.

Lone Star College also uses EMC Fully Automated Storage Tiering (FAST), EMC RecoverPoint for continuous remote replication (CRR) and disaster recovery, as well as EMC Avamar®, Avamar NDMP Accelerator for NAS, and EMC NetWorker® for integrated data deduplication, backup, and recovery.

The college system’s operational applications supported by the EMC and VMware cloud include Oracle PeopleSoft ERP and Microsoft Exchange 2010 email, SQL Server databases, and SharePoint. Lone Star also uses the cloud to run an array of instructional solutions such as Blackboard collaboration, AutoCAD, Premier, CX Design, and specialized applications for nursing, medical record keeping, and other career-specific programs.

## SAVING \$600,000 IN CAPITAL EXPENDITURES

In only 12 months, Lone Star College System virtualized 85 percent of its IT infrastructure from only three percent. The college system today is at 93 percent virtualized and expects to reach 97 percent virtualization in another three months.

“It was a rip and replace of nearly everything,” says Alander. “Even with the new equipment needed to build out our data centers, we saved over \$600,000 in capital expenditures by virtualizing and consolidating with EMC and VMware.”

In addition, energy use has been reduced by approximately 66 percent. And despite a growing community of users across multiple campus locations, Alander has not needed to add personnel to his lean 15-person IT staff.

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LINK ALANDER  
ASSOCIATE VICE CHANCELLOR OF TECHNOLOGY SERVICES

## “FIVE-NINES” AVAILABILITY

Lone Star’s cloud infrastructure is meeting its high-availability objectives, improving both administrative operations and the education process. EMC Avamar provides centralized image and guest-level backups of over 824 VMware virtual machines, 13 remote campus locations, as well as the EMC Celerra NAS environment using the NDMP Accelerator solution.

“With EMC and VMware, we’ve achieved five-nines availability of our critical applications,” says Alander. “That’s translated to essentially zero downtime compared with significant weekly outages. Avamar and NetWorker also have given us fast, centralized backups across our campuses and cloud infrastructure while minimizing our network bandwidth and storage resources.”

During a recent wave of rolling blackouts caused by winter storms, Alander used an integrated, cloud-enabled solution based on RecoverPoint CRR and VMware SRM to automatically move virtual servers from one facility to the main data center, avoiding a disruptive server shutdown and restore.

“Once an instructional data center was flooded,” Alander says, “so we shifted IT assets to the primary data center. The campus functioned as if nothing happened. It was so seamless, and valuable instruction time wasn’t lost.”

## DELIVERING IT AS A SERVICE

Cloud computing enables Lone Star College’s IT organization to deliver new services in a fraction of the time it once took. Instead of procuring and configuring a physical machine for each new service, IT can now simply allocate, on demand, the necessary resources from available capacity within the cloud.

A recent request from Lone Star College’s Foundation Office for a new donor management application illustrates this improved responsiveness.

Alander explains, “From our first meeting with the Foundation Office through the approval process and provisioning of resources, we had the new service up and running within a week—a process that used to take three to four months.

“With EMC and VMware as the foundation of our cloud infrastructure, we dynamically swing capacity to wherever it’s needed. That could be our registration systems before the semester begins or grading applications as the semester ends. We’re so much more agile and get better utilization of our resources.”

## NEXT STEP IN THE JOURNEY

Lone Star College System continues to expand the reach of cloud computing, looking next at virtualizing 10,000 desktops and laptops with VMware View™ and VCE Vblock™ Infrastructure Platforms.

“Without EMC and VMware, we couldn’t have achieved our transformation to cloud and IT as a Service,” says Alander. “The tight integration of VMware and EMC technologies combined with the cloud expertise and support we get from EMC and VMware professional services have been critical to our adoption of cloud.

“Our next step for cloud is desktop virtualization and allowing users to build their virtual machines. We want IT services to be as accessible as downloading an application to your iPad. It doesn’t matter where the IT applications came from—you just expect them to run. That’s where we’re going with EMC and VMware.”

### CONTACT US

To learn more about how EMC products, services, and solutions can help solve your business and IT challenges, contact your local representative or authorized reseller, or visit us at [www.EMC.com](http://www.EMC.com).

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