

CALIFORNIA STATE UNIVERSITY

EMC Global Services supports virtual optimization and data center consolidation; projects deliver cost savings and improve application availability



ESSENTIALS

Challenges

- Rapid IT infrastructure growth and increasing management complexity
- State cutbacks limited funding for IT projects

Solutions

- EMC Global Services: Residency Services, Data Migration Services, and EMC Consulting
- EMC CLARiiON CX networked storage
- VMware ESX Server virtualization solution
- EMC MirrorView software

Key benefits

- Optimized virtual servers and SANs increased uptime
- Reduced incident and problem tickets by 38 percent
- Shut down a 5,000 square foot leased data center and moved assets to CSU's existing data center infrastructure
- Consolidated, virtualized infrastructure is easier to manage
- Three complex projects completed successfully in only six months

The California State University (CSU) is the nation's largest university with 23 campuses, 433,000 students, and 44,000 faculty and staff. The CSU strives to make high-quality, affordable higher education available to all California students.

The Chancellor's office in Long Beach, California, oversees CSU's human resources, finance, legal, and university relations functions. With new applications going online and rapid virtualization, the Chancellor's office was challenged with a fast-growing server and storage infrastructure.

"It was getting complicated to manage an IT infrastructure that was growing without a standardized framework," explains Berhanu Tadesse, director of Infrastructure Services. "We also were under pressure to do more with less because of state cutbacks. With our mission to be the most affordable institution, we were trying to teach as many students as possible, even during financial hard times. We needed to make our infrastructure more cost-efficient while meeting bigger requirements. One of the cost saving measures we undertook was shutting down our leased data center and moving the servers, network, and storage infrastructure to two existing CSU campus data centers."

EMC HELPS VIRTUALIZE AND CONSOLIDATE

To address growth issues, CSU's first step was to consolidate EMC, IBM, and Sun storage onto an EMC® CLARiiON® CX3 storage area network (SAN), and then later add a CLARiiON CX4 for a new data warehouse.

The CSU was also consolidating its server infrastructure with the VMware® ESX® Server virtualization solution. The CSU Chancellor's office initially engaged an EMC VMware resident to optimize its virtualized server and SAN environments.

As part of the optimization project, the EMC resident developed a physical-to-virtual migration process template and VMware configuration task checklist. A VMware ESX Server 3.0 to 3.5 migration plan also was developed and implemented. Today, the Chancellor's office has 24 VMware ESX Servers running 200 virtual machines.

In addition, EMC validated SAN zones and groups, provisioned storage for new virtual machines, and deployed separate virtualized server clusters for its production and test and development environments. CSU's EMC CLARiiON CX SANs support Microsoft® Exchange, SQL Server®, SharePoint®, file storage, data warehousing, Digital Library, Merlot, and the VMware virtual infrastructure.

OPTIMIZATION IMPROVES RELIABILITY, EFFICIENCY

By optimizing the virtual environment, EMC Residency Services helped the CSU Chancellor's office realize significant operational improvements.

"We were helped tremendously by EMC making significant changes and applying best practices to our virtual infrastructure," says Tadesse. "All outages and system issues went away after EMC stabilized everything and integrated our virtual servers and storage subsystems."

Tadesse estimates application availability increased from 90 to 99.9 percent after EMC's involvement. Monthly trouble tickets also dropped from 509 to 314 in only nine months—a 38 percent reduction.

"EMC's and VMware's close relationship gave us one source of knowledge about virtualization and SANs," says Tadesse. "Our virtual environment relies on optimal storage configuration so this integration was critical. The outcome was great."

Once optimized, virtual server and storage oversubscription dropped from nearly 300 percent to less than 100 percent—significantly improving performance. The Chancellor's office also postponed adding storage and server resources for 12 months.

The Chancellor's office reduced the number of physical servers from approximately 320 to 230, and energy costs have decreased by an estimated 46 percent. With a physically smaller, more reliable environment, management costs for the consolidated infrastructure are lower as well.

COMPLEX STORAGE MIGRATION COMPLETED SUCCESSFULLY

Due to budget cuts, the Chancellor's office decided to further increase efficiency by moving its 5,000 square foot data center to two existing campus data centers. The first step was to organize data stored on the CLARiiON systems.

"When we looked at separating our production and test and development storage, data was everywhere," says Tadesse. "We knew the data migration would be complex so we brought in EMC Global Services to handle the project."

An EMC resident and a solution architect designed and executed a full plan for the migration of 4.7 terabytes of data on 14 host systems. The plan called for segregating the production and test and development environments between the two CLARiiON systems. EMC made host

IP address space changes, reconfigured storage subsystems, and used EMC MirrorView™ software to move data between the CLARiiON systems.

“In one month, EMC moved the data to the right places and transferred the CLARiiON systems to their new locations,” says Tadesse. “We were very pleased.”

In addition to the data migration, the EMC resident worked with the CSU team to develop best practices that could be leveraged in the future.

SMOOTH DATA CENTER MOVE

To complete the data center consolidation, the CSU Chancellor’s office hired EMC Consulting to manage the physical move of the remaining infrastructure.

“Given the complexity and short timelines, there was no way we could have done this move without EMC,” says Tadesse. “We simply didn’t have the expertise.”

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BERHANU TADESSE
DIRECTOR OF INFRASTRUCTURE SERVICES

EMC worked closely with the CSU to minimize downtime and ensure the physical safety of the people involved in moving and rewiring so many electrical and often large systems. EMC validated and labeled more than 200 devices with bar codes, coordinated logistics, and provided complete project management.

“The EMC team was very knowledgeable,” says Tadesse. “Even when there were unexpected challenges such as servers not fitting into new racks, they made adjustments on the fly and solved these problems.”

The Chancellor’s office also realized that having two sites provided an opportunity for disaster recovery. The EMC resident provided the CSU with guidelines for long-distance data replication, which will be applied in the near future using EMC MirrorView software.

AN EVOLVING JOURNEY

With EMC’s help, the CSU Chancellor’s office completed three major projects in only six months.

“As our challenges evolved, EMC showed the depth, knowledge, and understanding to make these projects successful,” concludes Tadesse. “In each instance, they addressed major, complex issues and moved our infrastructure to the next level. Achieving all this while meeting our challenging budget and time constraints made this effort a significant success.”

CONTACT US

To learn more about how EMC products, services, and solutions help solve your business and IT challenges, contact your local representative or authorized reseller—or visit us at www.EMC.com.

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