

STATE OF MICHIGAN

EMC storage consolidation and virtualization solutions help enable new and improved IT services while cutting costs



ESSENTIALS

Challenge

Exponential data storage growth and severe pressure to reduce infrastructure costs

Solutions

- EMC Symmetrix DMX-4 networked storage
- EMC SRDF data replication software
- EMC Disk Library backup and recovery solution
- VMware ESX server virtualization solution
- EMC Global Services

Key benefits

- Reduced storage charge-back rates by 68 percent
- Number of storage administrator FTEs remained steady—even as storage grew from 680 gigabytes to four petabytes
- Storage consolidation saved \$1 million in annual maintenance costs
- Virtual provisioning streamlines storage administration and increases storage utilization

Faced with a sagging economy and the highest unemployment in the U.S., the State of Michigan is under severe pressure to reduce costs, even as data growth explodes and citizens' expectations for services continue to expand. Michigan's Department of Technology, Management and Budget (DTMB), which provides IT resources to the state's 55,000 employees, must perform this difficult balancing act.

"Our constant challenge is doing more with less," says Daniel J. Lohrmann, CTO and deputy director of the Infrastructure Services Administration. "We thought that as budgets were slashed, user demand would drop, but the exact opposite happened. Now we have to deliver enhanced capabilities and services at the lowest possible chargeback rates to the agencies—all while improving efficiencies and reducing our own budget."

The State of Michigan turned to its longtime partner, EMC, to address these challenges. The keystone has been the consolidation of seven EMC® Symmetrix® DMX™-3 storage systems onto two larger-capacity Symmetrix DMX-4 systems. Symmetrix DMX-4 virtual provisioning functionality enables the State to further maximize storage utilization. In addition, the State has consolidated its server environment with VMware® ESX® Server virtualization.

The Symmetrix DMX-4 storage infrastructure, which comprises Fibre Channel, SATA, and soon to arrive flash drives, provides multiple service levels to meet diverse application needs. Tier one is typically used for write-intensive applications that require the fastest performance. Tier two handles high-availability, high-volume applications. Tier three is dedicated to high-volume IP traffic for file management.

The State also uses EMC Centera® content-addressed storage (CAS) for cost-efficient archival and storage of infrequently used data. File shares are consolidated on EMC Celerra® network-attached storage (NAS) systems.

For business continuity the State uses EMC SRDF® software to synchronously replicate data stored on the Symmetrix systems across its three data centers.

Applications stored on the EMC systems include: Microsoft Exchange e-mail, finance, agency records management, SAP and Lawson enterprise resource planning, Oracle Siebel customer relationship management, and call center management, as well as Microsoft SQL Server, Oracle, and other databases. The EMC infrastructure supports all of Michigan's state agencies such as police, corrections, health records, human services, education, treasury, and civil service.

EMC Global Services has played a key role in the design and implementation of this consolidated EMC infrastructure. "We have found EMC's portfolio of services, including consulting, integration, and customer support, have helped us achieve our IT goals," says Lohrmann.

“Not only is EMC extremely responsive—delivering on time and on budget—but they have the virtualization expertise needed to help ensure our success before, during, and after implementation.”

“We call the EMC services people the dream team,” says Aparna Agrawal, director of the Technical Services Division of IS. “Their storage and business continuity expertise has been invaluable for major activities such as data migrations, which would divert our staff from their primary jobs. EMC works according to plan and ensures that deadlines are met.”

OPERATIONAL AND COST EFFICIENCIES

Symmetrix DMX-4 storage consolidation, virtual storage provisioning, and server virtualization provide a number of benefits to the State. For one, remarkable savings have been achieved.

“We’re saving \$1 million in annual maintenance costs because of the DMX-4 storage consolidation,” says Agrawal. “An additional \$340,000 in energy savings is projected annually because we now use less equipment on the data center floor. This also moves us another step toward green IT.”

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APARNA AGRAWAL, DIRECTOR OF THE TECHNICAL SERVICES DIVISION OF IS

The State’s storage infrastructure has grown dramatically largely due to regulations mandating business continuity and preservation of health, case management, and other records, combined with growing disk backup requirements. EMC solutions have also helped the State address these challenges.

“Because of savings and efficiencies enabled by EMC, we’ve reduced our charge-back rates to internal customers by 68 percent,” adds Agrawal. “Storage management is more automated and streamlined so we’ve kept the number of storage administrator FTEs steady even as we’ve grown from 680 gigabytes to over four petabytes of storage in only four years. And we’re offering users a greater variety of replication, backup, and storage options.”

With EMC Virtual Provisioning, the State presents more storage to users than is physically available, recognizing that the agencies will use their storage allocations gradually.

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DAN LOHRMANN, CTO AND DEPUTY DIRECTOR FOR THE STATE OF MICHIGAN

“With EMC’s Virtual Provisioning™, we’ve been able to free a lot of usable storage and delay our storage purchases,” explains Chris Marroquin, manager of Storage Integration. “There’s also less administration because we don’t need to manage weekly or monthly requests for more storage.

“Storage just grows dynamically from a shared central pool until we hit the 90 percent threshold, which was only 75 percent before.”

The State also has deployed VMware ESX Server technology to virtualize 400 physical servers to 400 virtual machines running on only 25 physical servers. With virtualization, the State has reduced the charge-back rate of hosted server services by 25 percent.

In addition, SRDF remote replication software now provides business continuity for mission-critical applications stored on the Symmetrix DMX-4.

“Information for our law-enforcement and social services agencies has to be available 24x7 since these services can save lives in many cases,” says Lohrmann. “If our data center systems are disrupted we can rely on this backup site and continue providing essential services.”

The State also replaced existing tape backup with an EMC Disk Library solution, which has reduced backup windows from 20 hours to seven to eight hours, and has enabled faster backup recovery even as backup capacity requirements have increased exponentially.

The State has several other initiatives planned to further reduce costs. Later this year, it will implement EMC Symmetrix VMAX storage and Fully Automated Storage Tiering for dynamic movement of data across different storage tiers. The State also will be launching a cloud computing initiative that will enable employees to self-provision storage for applications that do not require enterprise replication or backup services.

CONTACT US

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