

CentraCare Health System

EMC helps healthcare organization deploy an advanced information infrastructure with active/active disaster recovery capabilities for its clinical environment



Founded over a decade ago, CentraCare Health System's mission to preserve and improve the health of residents across central Minnesota is supported by a network of three hospitals, four long-term care facilities, and 10 clinics.

For the past two years, CentraCare has leveraged a consolidated EMC® information infrastructure with innovative EMC management, business continuity, and read/write disaster recovery capabilities for its patient- and business-critical Epic environment and other key applications.

"Our relationship with EMC began around the same time as the purchase of our Epic applications," says Amy Porwoll, director of Information Systems. "EMC helped us architect a powerful, highly available storage infrastructure for our Epic environment that enabled us to take advantage of unprecedented levels of business continuity."

The foundation for an active/active disaster recovery model

Located within the main data center is an EMC CLARiiON® CX series-based SAN which supports CentraCare's production environment. Built to deliver the highest levels of performance and reliability in the midrange storage market, it is entrusted to fulfill the organization's 24x7 uptime requirements for continuous access to information generated by its Epic applications. The platform also supports a growing number of other key applications including Lawson Financials, GE Healthcare IDX Registration, Phillips Xcelera Cardiovascular PACS, and Microsoft Exchange.

This EMC CLARiiON CX series system, along with EMC MirrorView™ software and a secondary EMC CLARiiON CX series system deployed at CentraCare's disaster recovery site approximately five miles away, have enabled the organization to employ an active/active disaster recovery model for its Epic environment.

"Epic was very supportive of EMC's efforts," says Chuck Dooley, CIO and vice president of Information Systems. "They have had customers who have done cache-level and AIX-level replication, but we were the first customers to use MirrorView to achieve read/write disaster recovery capabilities. This is a critical capability for us because if everything was just brought up for read only at our DR site, we wouldn't be able to test out our ability to write to that storage or successfully come back off of our DR site."

EMC Global Services expertise and collaboration the key to a high-performance set up and successful failover test

With support from EMC's Global Services team, CentraCare has successfully set up its EMC CLARiiON CX series storage infrastructure to facilitate optimized operations for its Epic environment as well as for other vital applications.

"What we had heard from talking to people who were live on Epic was how important it was to set up the SAN correctly," says Porwoll. "EMC's consultants brought their knowledge of Epic to the table and worked with us to determine the best way to configure our metaLUNs to avoid any spindle contention or performance issues. They also worked closely with the people on the server side that supported us for Epic. They did an awesome job."

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Once the EMC infrastructure was fully deployed at both sites, it was time to test the EMC MirrorView-supported failover capabilities. Preliminary go-live activities, such as keeping the system down to do integrity checks to ensure that that process worked with the Epic database were conducted and then the actual failover took place.

"For our first run we did our failover test from one CLARiiON system to the other without Epic online," says Dooley. "We brought our whole organization up on the DR site, ran it there for two hours, and then we failed back successfully. Everything worked as promised."

Disaster recovery support through EMC MirrorView has also been extended to other critical environments including CentraCare's GE Healthcare IDX Registration application.

"We plan to schedule a full failover once a year," says Dooley. "To me, testing our ability to perform disaster recovery every year is like testing our UPS devices every month. We do it to ensure that we have the capability to keep our organization's IT operations up and running no matter what."

Additional clinical needs addressed with EMC NAS and archival storage solutions

CentraCare also uses an EMC Celerra® NS704G IP storage gateway solution with an EMC CLARiiON system and EMC Centera® content-addressed storage on the back end to support its Merge eMed Radiology PACS environment. The EMC CLARiiON is used to store indexing data for the image and the EMC Centera houses the actual image.

"The NS series gateway solution is ideal in that it makes the CLARiiON SAN storage present to the application as if it were networked-attached storage which is what the vendor prefers for this environment," says Dooley.

Providing an economical platform and petabyte scalability, CentraCare's EMC Centera platform is also used for archive purposes within the organization's Phillips Xcelera Cardio PACS environment. At the same time records are committed to the EMC CLARiiON CX series system, they are also sent to the EMC Centera platform. Records reaching the age of five years or older will be automatically deleted from EMC CLARiiON storage, but will remain as deep archives within the EMC Centera system.

“Centera provides a cost-efficient archive solution that not only helps us comply with Protected Health Information regulations such as HIPAA and Joint Commission, but also enables us to conserve our high-performance, tier-one Fibre Channel storage,” says Dooley. “With Centera, we can purge our CLARiiON drives of anything over five years old, but still keep those records online in an accessible, yet secure format.”

Three tiers of protection

In addition to CentraCare’s read/write disaster recovery strategy, the organization also employs local EMC backup and recovery solutions to ensure non-stop business continuity for day-to-day operations across its EMC information infrastructure.

Twice a day, EMC SnapView™ software is used to take point-in-time snapshots of various application environments. A week’s worth of snaps are stored locally as backups and are readily available to quickly restore lost or damaged files as required.

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An EMC CLARiiON CX3 model 20 system has also recently been deployed to support backup-to-disk for CentraCare’s file server environment. These backups are then migrated to tape via IBM’s Tivoli Storage Manager (TSM) and stored offsite.

“We needed a three-tier strategy to fully address our organization’s stringent business continuity requirements,” says Porwoll. “MirrorView, SnapView, and TSM backup-to-tape solutions enable us to quickly recover locally or remotely.

Leading the way for others

Today, the collaborative efforts of CentraCare, EMC, and Epic have resulted in the creation of a successful model for other companies to follow, both in setting up their storage infrastructure for greatest advantage and facilitating active/active disaster recovery for their Epic environments and beyond.

“EMC’s storage, backup, and disaster recovery solutions have enabled us to fulfill our mission to guarantee 99 percent uptime for our organization,” says Dooley. “Knowing that we can successfully bring the organization up on that secondary site is also the kind of insurance you just can’t put a price tag on from a security and compliance standpoint. It enables us to sleep at night.”



EMC Corporation
Hopkinton
Massachusetts
01748-9103
1-508-435-1000
In North America 1-866-464-7381
www.EMC.com