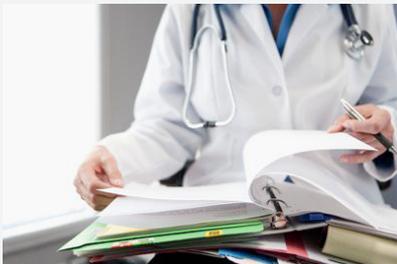


# ELLIOT HEALTH SYSTEM

## EMC solutions maintain top performance and availability for growing EMR infrastructure



### ESSENTIALS

#### Challenges

- Growing EMR usage required increased storage performance
- Slow recovery from storage outages

#### Solutions

- EMC EHR Infrastructure Solutions Suite
- EMC Symmetrix storage
- EMC CLARiiON CX4 storage
- EMC Fully Automated Storage Tiering (FAST)
- EMC MirrorView software
- EMC VMware vSphere virtualization solution

#### Key benefits

- EMR performance and availability improved
- Increased simplicity, efficiency, reliability, and flexibility of patient care and administrative operations
- Approximately 130 servers eliminated or repurposed
- Data center power usage cut in half

Elliot Health System (EHS) is the largest provider of comprehensive healthcare services in Southern New Hampshire. Based in Manchester, Elliot operates the Elliot Hospital, a 296-bed acute care facility, Regional Trauma Center, Urgent Care, Elliot Regional Cancer Center, Elliot Senior Health Center, Elliot Breast Health Center, Elliot 1-Day Surgery Center, and other healthcare services. EHS facilities also include a new 236,000 square foot ambulatory care center called The Elliot at River's Edge.

Elliot's storage infrastructure has grown rapidly as clinical and administrative applications are becoming more widely used. In fact, Elliot's storage assets have doubled every 18 months and recently reached 80 terabytes.

With Elliot's prior storage system, its electronic medical records (EMR) solution was affected as I/O storage demands spiked. Backup processes also would temporarily affect the speed of production applications. In addition, storage reliability was becoming an issue, and the storage vendor's support team was slow in responding.

Brian Richards, director of Technical Services, says, "EMR has become so critical to clinicians caring for patients, it's incredibly disruptive if they can't get online. We needed a storage infrastructure that enabled us to continue accelerating our adoption of EMR capabilities without worrying about reliability or heavy usage."

### INFRASTRUCTURE SOLUTIONS SUITE FOCUSED ON HEALTHCARE REQUIREMENTS

The EMC® EHR (Electronic Health Record) Infrastructure Solutions Suite is a portfolio of integrated, validated solutions based on EMC's industry-leading healthcare ISV partners' clinical applications and EMC best-in-class hardware, software, and services. As a first step toward the Suite, Elliot evaluated the latest IBM, HP, and EMC solutions and decided to replace its HP EVA storage with an EMC Symmetrix® SAN. Data generated by Elliot's EMR, reporting system, financial management, and Microsoft SQL Server applications reside on the Symmetrix system.

Elliot also stores its ERP, document management, Microsoft Exchange email, laboratory management, and VMware® virtual machines on an EMC CLARiiON® CX4 system. Elliot is implementing EMC Fully Automated Storage Tiering (FAST) to optimize application performance by automatically moving application data across EMC Enterprise Flash drives, Fibre Channel, and SATA disk—ensuring "hot" data is on faster performing drives.

Using VMware vSphere™, Elliot has virtualized 70 percent of its physical servers as 215 virtual machines for increased efficiency and flexibility.

For data protection, Elliot uses OpenVMS for data replication of the Symmetrix systems and EMC MirrorView™ for replication of the CLARiiON systems located in its primary and disaster recovery data centers. Elliot also uses EMC TimeFinder® and EMC SnapView™ to create local copies of data.

“We just love EMC. The support has been fantastic. EMC takes a real interest in our business and definitely steps up for us. It’s a partnership we wish we had with all our vendors,” says Tom Fairfield, manager, Technical Services.

“We like the resources of a market leader like EMC,” adds Richards. “We went to an EMC conference for Epic users and learned a lot by talking to other Epic customers about their struggles and best practices. EMC also has technical people onsite at Epic working to improve how EMC and Epic solutions perform together.”

## **PATIENT DATA PROTECTED AT ALL LEVELS**

As patient charts and billing data have gone from paper to online, high availability of clinical and administrative applications has become increasingly critical to Elliot. The healthcare system uses EMC business continuance software to remotely replicate data for disaster recovery and create local copies for testing, development, and maintenance.

“We’ve been able to replicate everything within our pipe and without slowing performance—even as our data volumes keep growing,” notes Fairfield.

The combination of high-performance EMC storage and EMC cloning tools also have contributed to more efficient, faster upgrades and other maintenance activities.

## **INCREASING STORAGE AND SERVER EFFICIENCY**

High-efficiency EMC storage platforms, FAST, and VMware have contributed to significant savings at Elliot. For example, Elliot estimates it has repurposed or avoided purchasing 130 physical servers because of virtualization. “By virtualizing and using more efficient EMC storage, we’ve cut our power usage by roughly half,” says Richards. “With less hardware giving off heat, we turned off one of our A/C units because it was getting too cold in our data center. And the hold times of our UPS backup units doubled from 22 to 45 minutes.”

Elliot IT also has noticed the more efficient infrastructure requires less staff time to manage. “Even though our infrastructure growth has been explosive, we’ve been able to keep the number of IT administrators to four,” says Fairfield. “Everything is much easier—from allocating storage to spinning up new servers, to troubleshooting.”

In addition, EMC FAST will enable more efficient storage utilization. Heavy-use applications automatically will retrieve data from super-fast Flash drives, regular-use applications will rely on high-performance Fibre Channel, and infrequently accessed data will be stored on cost-effective SATA disk. Not only will FAST reduce administrative time, but it will also align storage costs with the appropriate application.

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BRIAN RICHARDS  
DIRECTOR OF TECHNICAL SERVICES

## DELIVERING EMR SERVICES TO PHYSICIANS

Virtualization is enabling Elliot to accelerate its journey toward development of a private cloud. Elliot is planning to virtualize 90 percent of its servers within a year—up from 70 percent today. Already, Elliot delivers EMR services to physician practices via its virtualized infrastructure.

“As we move closer to private cloud, we envision greater availability and flexibility. For example, with EMC VPLEX™, we could do an EMR upgrade while active writes continue to process. Scheduled downtime would drop to zero and unscheduled downtime would be minutes rather than hours,” explains Richards. “EMC’s private cloud technologies fit well into our strategy of making EMR and other clinical applications even more pervasive and accessible to our clinicians and administrators.”

### 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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