

VIDANT HEALTH SYSTEM

Healthcare system transforms health IT strategy and accelerates Meaningful Use of Epic EHR with EMC XtremIO



ESSENTIALS

Industry

Healthcare (Health System)

Company Size

More than 1,700 physicians and nurses

Challenges

- Three times data growth in critical Epic environment compounded by ICD-10, Meaningful Use, reporting, and analytics
- Decreasing ease of management in overall environment

Solutions

- EMC XtremIO for Epic Clarity and Cache Database
- EMC Isilon
- EMC Data Domain
- EMC VNX

OVERVIEW

Vidant Health System (Vidant Health) serves as the flagship healthcare system in Eastern North Carolina, and is a regional resource for all levels of health services. Vidant Health provides trauma, rehabilitation, and outpatient health services to more than 1.4 million people in 70 locations across 29 counties. In an average year, about 80,000 inpatients, 486,000 outpatients, and 3,000 newborns are treated at Vidant Health facilities by a clinical staff that includes more than 500 physicians and 1,200 nurses.

Vidant Health's strategic IT initiatives included a comprehensive Epic EHR technology refresh, compliance with mandated ICD-10 transition, and adoption of advanced technology for Meaningful Use (MU). The health system initially leveraged multiple EMC solutions across its IT infrastructure, including EMC® VNX® block storage, EMC Isilon® for file storage and archiving, and EMC Data Domain® for backup and recovery.

In totality, EMC technologies supported the Vidant Health Epic EHR environment plus enterprise databases and applications from Microsoft, Oracle, PeopleSoft, and others. After Vidant Health reviewed its existing IT storage infrastructure for the new initiatives, it became clear that a significant storage transformation would be needed. The company chose EMC XtremIO™.

BUSINESS CHALLENGES FACING VIDANT

Technology refresh of operational Epic environment: Vidant Health constantly struggled with scaling performance and effective capacity as its Epic EHR-related activities drove ever-increasing demand for both. Vidant Health realized that planned initiatives and business operations would be increasingly difficult to support with traditional storage alone.

Storage bloat with ICD-10 and Level 2 Meaningful Use compliance: Vidant Health knew that storage growth was imminent based upon requests for ICD-10 and Meaningful Use requirements. Taking a visionary leap into solving this problem required the fortitude not only to plan for future data growth, but to redefine what would be possible for Vidant Health's technology strategy.

Storage sprawl with EHR copies: Like most users, Vidant maintained more than a dozen Epic EHR database copies. This is attributed to Epic requirements that mandate at least six complete copies for production, backup, disaster recovery, development and testing, convergence, and training.

REDEFINE

CUSTOMER PROFILE

EMC²

Results and Outcomes

- Revealed 20 times faster Epic performance through testing
- Reduced Epic SUP production nightly support runs from seven hours to 45 minutes
- Shortened Epic refresh cycles from 30 to five seconds
- Reduced Epic Clarity report times from five minutes to one minute
- Enabled 100 percent usable copies with thin provisioning
- Provided latency of less than one millisecond
- Achieved 6:1 data reduction space savings with more expected in future

With XtremIO's metadata efficient snapshots, Vidant Health has been able to expand to add copies for support analytics, reporting, partners, and other projects.

Additionally, Vidant Health users would like even more Epic EHR database copies for such use cases as on-demand reporting. However, the limitations of disk-centric storage require complete physical copies to avoid performance impacts to users. The resulting sprawl is expensive, difficult to manage, and limiting to Epic EHR agility.

EMC XTREMIO: CERTIFIED TO TRANSFORM AND CONSOLIDATE EPIC

Vidant Health chose EMC XtremIO to transform its Epic EHR and support delivery of new strategic IT initiatives. Vidant Health's key criteria included the benefits of a scale-out all-flash array, including inline always-on data reduction, compression, thin provisioning, and data-at-rest encryption for security and privacy.

Vidant Health's initial plan was for two sets of two X-bricks (four total) to meet Epic EHR storage performance, capacity, and disaster recovery across two data centers. However, in testing of production data on XtremIO, Vidant Health realized a more transformational consolidation strategy after seeing a 500 percent Epic EHR performance improvement for daily transactions.

In parallel, Vidant Health was able to create multiple snapshots for the purpose of backup and reporting. Vidant Health decided to scale out its XtremIO platform by adding four more X-bricks per site (bringing the total to twelve) in order to accommodate other database and application initiatives. Leveraging the unique in-memory metadata of XtremIO for instant snapshots and data reduction, Vidant Health is now able to run concurrent backups and make as many 'free' copies as it wants for test and development, reporting, and risk avoidance efforts. The resulting benefits reach far beyond Epic EHR infrastructure, delivering support for strategic initiatives in both clinical and business arenas for Vidant Health.

"We decided to consider EMC XtremIO for everything after seeing our Epic test results. Now, we justify what workloads not to place on XtremIO."

James Eason
Manager at Vidant Health Systems

MORE RESPONSIVE EHR FOR PHYSICIANS, NURSES, AND PATIENTS

Epic EHR running on XtremIO provides instant responsiveness to clinicians using NoteWriter to document ambulatory, inpatient, and outpatient care. EHR searches now occur in real time as search terms are entered. Vidant Health has accelerated storage READ latency for Epic EHR to less than one millisecond. Online access to EHRs becomes as fast as the patient's Internet connection can support.

THE NEW STORAGE DEFAULT, WITH 6:1 DATA REDUCTION EFFICIENCY FOR EHR

XtremIO provides realtime inline global data deduplication and compression that dramatically increase the effective capacity and make it far more cost-effective than Vidant Health expected—all without any performance overhead.

This transformation has allowed Vidant Health to demonstrate support for additional data required for dual coding without the need for additional physical capacity. In addition, Vidant Health can facilitate testing and training in support of a planned ICD-10 transition by creating as many instant copies of its Epic environment as desired, without requiring additional physical capacity or impacting Epic production performance. Remarkably, Vidant Health's seven-terabyte production database plus two copies should require 21TB of space, but it occupies just 3.4 TB of physical space after the data reduction provided by XtremIO.

Also, XtremIO thin provisioning allowed Vidant Health to allocate 16 TB of storage space for CacheDB PROD to support Epic growth with a physical space savings of 80 percent. Vidant Health has now evolved its storage strategy to focus on placing additional health IT storage workloads on XtremIO.

For Vidant Health, all of the aforementioned advantages combined to deliver an extraordinary 6:1 data reduction efficiency, making XtremIO the most cost-effective solution as well. The more snaps Vidant Health creates on XtremIO, the more space efficient the environment will become. With such effective capacity efficiency and scale-out architecture to linearly add performance and capacity, Vidant Health can confidently consolidate additional IT databases and applications to meet all SLAs and growing storage capacity requirements.

After the aforementioned successes were established within its IT environment, Vidant Health now requires an internal justification for placing a workload on a platform other than XtremIO.

STREAMLINED PATIENT CARE AND PRODUCTIVITY

Because Vidant Health is now leveraging XtremIO with its ease-of-use, storage efficiencies, blazing fast performance, and encryption features, the health system can more quickly, easily, and securely meet the demanding needs of Epic, Meaningful Use, ICD-10, CPOE, VDI as well as other healthcare applications now and in the future. All of these benefits translate to better patient experiences and clinical productivity every day at Vidant Health. A more responsive Epic EHR environment speeds patient registration and discharge processes. Staff searches of patient records occur in real time as search terms are entered. And clinicians find and update patient data faster and submit orders sooner. This progress with XtremIO is just the beginning.

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, visit www.emc.com, or explore and compare products in the [EMC Store](#).

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