

NORTHERN HOSPITAL OF SURRY COUNTY

EMC puts community hospital on course to private cloud and virtual machine mobility



ESSENTIALS

Challenges

- Electronic medical records, wireless devices driving dramatic data growth, and longer backup windows
- Moving virtual infrastructure between data centers would require significant downtime

Solutions

- EMC VPLEX Metro storage virtualization platform
- EMC CLARiiON CX4 unified storage
- EMC Avamar data deduplication backup and recovery solution
- EMC NetWorker unified backup and recovery solution
- EMC RecoverPoint intelligent data protection solution
- VMware vSphere virtualization solution
- VMware Site Recovery Manager solution

Key benefits

- Reached 75 percent server virtualization in 12 months
- Moved more than 100 virtual machines to a new data center without any downtime
- Slashed backup windows from 24 hours to 30 to 40 minutes while speeding recovery from hours to minutes

Northern Hospital of Surry County is a community hospital in Mount Airy, North Carolina, with critical and pulmonary services that rank among the best in the state and in the top 10 percent nationally. More than 850 healthcare professionals on staff increasingly use IT tools to help them sustain the hospital's high standards for clinical care, patient safety, and efficiency.

"Even though budget dollars are tight, we've had to manage 30 to 40 percent data growth in 18 months and an increase from 1,000 to 2,000 medical devices in only two years," says Robbie Hall, Northern Hospital's CIO. "Much of this expansion is driven by increased adoption of data-intensive applications, such as electronic medical records and wireless medical devices."

"Because our data centers were running near capacity, we virtualized 75 percent of our infrastructure in only 12 months and dramatically increased our efficiency; but we soon discovered we weren't able to move our virtual servers between our primary and remote data centers without shutting down our production operations," he adds. "This was a big issue because as a healthcare provider, we simply couldn't afford to take our applications offline."

With increasing workloads and virtualization, Northern Hospital was also finding that data backup windows were growing rapidly and spilling into production.

MULTI-TIERED STRATEGY FOR DATA PROTECTION AND STORAGE EFFICIENCY

To address these challenges, Northern Hospital deployed the EMC® Electronic Health Record (EHR) Infrastructure Solutions Suite, 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 part of the suite, EMC VPLEX™ virtual storage mobility solutions enabled Northern Hospital to move its entire virtualized server infrastructure running Microsoft® Exchange, Microsoft SQL Server®, CareFusion, and other applications to a new data center without any downtime. Northern Hospital is also using VPLEX and VMware® vSphere™ to automatically rebalance its virtual server resources between two sites.

In addition, EMC RecoverPoint, EMC Avamar®, and EMC NetWorker® data protection solutions, along with VMware availability solutions, have dramatically improved Northern Hospital's data backup and recovery timeframes for MEDITECH Health Care Information System (HCIS) and other critical applications.

EMC CLARiiON® CX™4 unified storage serves as the data repository for all of Northern Hospital's critical applications including MEDITECH HCIS, Microsoft Exchange 2010, Microsoft SQL Server 2005, Citrix, CareFusion, and VMware vSphere. Northern Hospital

balances performance and cost with a tiered storage strategy. Lower cost SATA drives store most of the hospital's virtual servers while Fibre Channel disk supports applications that need greater performance, such as Exchange and SQL Server.

The healthcare provider also plans to use EMC Centera® content-addressed storage for archiving less frequently accessed email and MEDITECH data.

VIRTUAL MACHINE MOBILITY BETWEEN DATA CENTERS WITH NO DOWNTIME

Despite the advantages of virtualization, Northern Hospital wasn't able to move virtual machines between its data centers without significant disruption to critical applications. Northern Hospital decided to use EMC VPLEX virtual storage, EMC RecoverPoint data protection, VMware Site Recovery Manager (SRM), and VMware vMotion® solutions to move its entire physical and virtual server infrastructure to a next-generation data center.

Hall recalls, "When we looked at moving our production data center, we were faced with shutting down our virtualized server infrastructure and some of our most critical applications, enduring 24 to 48 hours of downtime. Since that wasn't acceptable, we used EMC VPLEX storage to migrate about 200 virtual machines without a single minute of downtime. VPLEX really took a lot of pressure off our team so we could achieve this complex move and not worry about interrupting patient care services."

"VPLEX continues to play a role by rebalancing our virtualized servers between data centers that now simultaneously serve as production and disaster recovery sites," he adds. "As a result, we've decreased utilization of our virtual server hosts from 67 to 30 percent and avoided \$25,000 in memory upgrades. Better server efficiency also will help us drive more quickly from 75 to 100 percent virtualization within the next six to 12 months. VPLEX is worth every penny because it's an incredibly solid and versatile product."

In addition, Northern Hospital uses VPLEX with EMC RecoverPoint and VMware SRM for unified replication of its server and storage infrastructures for disaster recovery.

"RecoverPoint is so granular that we can identify a recovery point right up to the minute before a loss or corruption occurs, so we're able to ensure compliance with North Carolina's Joint Commission requirement for guaranteed zero data loss," says Hall.

EMC AVAMAR SPEEDS BACKUP AND RESTORE OF CLINICAL DATA

Northern Hospital previously backed data up to tape using an HP SAN and Symantec Backup Exec software. The organization reviewed NetApp and other disk-based backup options and decided that the EMC Avamar data deduplication backup offering was a superior solution for protecting applications running in its physical and virtualized server environments.

"Before Avamar, backup jobs took about 14 hours and often spilled over into the work day, which hurt our application performance and resulted in user complaints," recalls Hall. "Now with Avamar's integrated deduplication, we have reduced network bandwidth congestion and get fast, nightly full backups that complete in 30 to 40 minutes, with no impact on user productivity."

In addition, recovery time has decreased from three hours to 10 to 15 minutes, now that IT staff can restore files with a click instead of pulling tapes from an offsite vault.

By deduplicating backup data at the client and across sites and servers, Avamar has reduced backup storage requirements by 80 percent, saving the hospital valuable rack space, while decreasing power and cooling needs.

DELIVERING BACKUP EFFICIENCY TO MEDITECH

The Avamar project was so successful that Northern Hospital extended the solution to its fast-growing MEDITECH environment. The hospital replaced a Bridgehead tape backup solution with an EMC Avamar and EMC NetWorker integrated serverless backup (ISB) solution certified for MEDITECH.

Hall says, “In our tape environment, we were approaching a 24-hour backup window for MEDITECH. Restoring from tape was done offsite and could take 24 to 36 hours. Now with NetWorker and Avamar, we can back up MEDITECH in about one hour and restore in 10 to 15 minutes. The breathing room and efficiency have been amazing.”

“We have more time for IT projects that help streamline delivery of patient care and enable better collaboration among our clinicians. As we roll out additional EMC solutions to support private cloud, we expect to achieve even more resiliency, agility, and efficiency.”

ROBBIE HALL
CIO, NORTHERN HOSPITAL OF SURRY COUNTY

CLOUD DRIVES COST SAVINGS AND AGILITY

Northern Hospital credits EMC with speeding its move to cloud and dramatically increasing IT efficiency.

“It has been a whirlwind of a journey to cloud,” explains Hall. “EMC’s deep cloud expertise and excellent integration between EMC and VMware solutions have accelerated our adoption. We have eliminated over 100 physical machines, which is saving us money on maintenance, power, and cooling.”

Looking ahead, Northern Hospital has begun rolling out EMC’s Virtual Desktop solution to provide clinicians access to their own virtual desktops from nursing stations and other devices.

“We are a small hospital and yet we’ve engineered this vast expansion and upgrade without having to add a lot of staff,” Hall says. “We now have an agile and resilient environment that molds to our changing needs. The ease of growing and taking care of our systems has transformed the way we manage our IT assets. For example, we can spin up a new virtual machine in 30 minutes compared to half a day for a physical server.”

“Because we’re doing things more efficiently, our ratios of application development versus technical support resources have gone from 50/50 to 65/35,” he adds. “We have more time for IT projects that help streamline delivery of patient care and enable better collaboration among our clinicians. As we roll out additional EMC solutions to support private cloud, we expect to achieve even more resiliency, agility, and efficiency.”

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.

EMC², EMC, Avamar, Centera, CLARiiON, CX, NetWorker, VPLEX, and the EMC logo are registered trademarks or trademarks of EMC Corporation in the United States and other countries. VMware, vMotion, and vSphere are registered trademarks or trademarks of VMware, Inc., in the United States and/or other jurisdictions. All other trademarks used herein are the property of their respective owners. © Copyright 2011 EMC Corporation. All rights reserved. Published in the USA. 11/11 Customer Profile H8760.1