



Customer Case Study

Hospital Places Care of Mission-Critical Data on Cisco SAN

Oakwood Healthcare System manages rapid data growth with a Cisco-based storage area network.

EXECUTIVE SUMMARY

OAKWOOD HEALTHCARE SYSTEM

- Healthcare
- Dearborn, Michigan, United States
- 9500 Employees

BUSINESS CHALLENGE

- Maintain excellent patient care
- Control data storage costs
- Provide zero-downtime data availability

NETWORK SOLUTION

- Installed a storage area network (SAN) based on Cisco MDS 9509 Multilayer Directors and Cisco MDS 9216i Multilayer Fabric Switches
- Consolidated storage servers from remote locations to data center
- Provided networkwide access to data through cost-effective end-user systems

BUSINESS RESULTS

- Continuous data availability even through software upgrades
- Reduced costs through improved storage utilization and server consolidation
- Increased IT staff efficiency through easy storage provisioning and simplified data management

BUSINESS CHALLENGE

With data storage requirements doubling every year, Dearborn, Michigan-based Oakwood Healthcare System (OHS) has found that providing the best possible care for its patients also demands caring for its IT budget. OHS serves 35 communities with four acute care hospitals and more than 40 primary or specialty care facilities. OHS believes that excellent information technology is critical to maintaining the high quality of its many departments: emergency medicine, general medicine and surgery, outpatient surgery, diagnostic imaging, labor and delivery/neonatal intensive care, pediatrics, intensive care, and coronary care services. With today's increasing reliance on digital medical records, diagnostic imaging, and new Health Insurance Portability and Accountability Act (HIPAA) regulations governing patient data accessibility and protection, data storage has become a mission-critical aspect of IT support.

In early 2000, OHS was using direct-attached storage, but it was becoming increasingly unwieldy and difficult to provision storage efficiently and cost-effectively. Some storage systems were underutilized, while others were overwhelmed, but there was no way to balance storage resources between the various servers and applications. The IT staff implemented their first storage area network (SAN) on their UNIX system using small 8-port fabric switches. The SAN balanced storage loads across resources and supported applications with the storage that they needed. "I knew that if we put a SAN in place, we could add value and reduce our costs overall with better storage management," says Brian Perlstein, technical architect, OHS.

This first SAN was so successful that the storage team decided to upgrade to a larger SAN that could accommodate their Windows servers and support their current as well as future needs.

NETWORK SOLUTION

Following product testing and due diligence research, OHS decided to deploy two Cisco® MDS 9509 Multilayer Directors in a dual fabric core design that prevents any single point of failure due to redundancy in the directors and in the dual fabric design. This redundant fabric configuration meets the healthcare system's need for high availability and supports both corporate compliance and compliance with regulations such as HIPAA. Pricing was also a factor in the selection process. "The price point was excellent for what you got compared to some of the other vendors," says Perlstein. "We especially liked that pricing included the management tool, which is integrated with the product."

The SAN helps OHS manage approximately 45 TB of storage in IBM enterprise-class and smaller storage systems, including IBM TotalStorage DS4300 and IBM TotalStorage DS4100 Express storage servers, which are managed with the help of IBM SAN Volume Controller.

Four Cisco MDS 9216i Multilayer Fabric Switches are also deployed in pairs: one pair is at OHS's flagship hospital—Oakwood Hospital and Medical Center (OHMC)—connected to the SAN, the other pair is located at the hospital's main office complex nearby. This complex houses the hospital's finance, human resources, and marketing staff, and generates a large amount of data. "Downtime translates to thousands of dollars per minute for a healthcare organization like ours," says Perlstein. "The high availability of the Cisco directors and the redundancy of the SAN design have allowed us to provide zero downtime."

Today, over 80 percent of the healthcare system's mission-critical applications and data are linked to the SAN, including financial, human resource, and clinical systems. The clinical systems run primary patient care applications, which are a critical driver for zero downtime. "Another factor in Cisco's favor was excellent service," says Perlstein. "Whenever we needed support, a Cisco representative was there to help, whatever our questions or needs might be."

"Cisco really helped us reduce our costs by giving us the tools that we needed to manage our storage tasks and our storage resources much more efficiently."

—Brian Perlstein, Technical Architect, Oakwood Healthcare System

BUSINESS RESULTS

Since installing the Cisco storage networking director switches, OHS has achieved its goal of a SAN with zero downtime. Data on the SAN remained available to users even during several software operating system upgrades. This level of availability gives the medical and administrative staff the application and data access that they need to provide the best possible patient care. "We treat everyone as a valued customer—every patient and every employee—and our goal is to serve them in the best possible way," says Perlstein. "Our Cisco SAN helps us do that, every day, in a very cost-effective manner."

OHMC is taking advantage of the higher storage utilization to consolidate storage servers from remote locations to a central data center and provide users with the same amount of storage—or more—for the same budget. Server consolidation has been an important factor in controlling capital costs and operating costs, which is critical in the cost-sensitive healthcare industry. Consolidating storage resources also lets users take advantage of less expensive client systems at remote locations because they do not require individual storage. These "thin" client systems are less expensive to buy and easier to manage.

More than 75 percent of the healthcare system's data is now centrally located. "We are collapsing a lot of our data back to the central data center from our various sites. The SAN helps us do that and still provide high-performance data access," says Perlstein.

The new SAN is more cost-effective, easier to manage, and helps OHS meet HIPAA government regulations that govern the storage, access, and protection of patient data. "Cisco really helped us reduce our costs by giving us the tools that we needed to manage our storage tasks and our storage resources much more efficiently," says Perlstein.

Ultimately, the most important benefit that OHS has realized from the SAN is providing even more reliable and cost-effective access to the data that is so critical to patient care. "Our mission is to provide the best possible healthcare to our patients, and the SAN helps us do that," says Perlstein. "Now staff can pull up the information that they need, anytime and anywhere, without knowing or caring where it is stored."

NEXT STEPS

OHS plans to extend its SAN and mirror data to a disaster recovery (DR) site to provide even greater data safeguards. The healthcare system is positioned to take this step, because the Cisco MDS 9216i Multilayer Fabric Switches already in place will support Fibre Channel over IP for high-speed connectivity over the long distance required for a remote DR location. This type of planning for the future will help OHS control expenses and target its budget to the areas that will best serve its patients for many years to come.

FOR MORE INFORMATION

To find out more about Cisco MDS 9000-based intelligent storage networking products and solutions, go to:

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