Hospitals Upgrade Data Center to Deliver New Medical Applications

Executive Summary

- **Customer Name:** Southern Illinois Healthcare
- **Industry:** Healthcare
- **Location:** Southern Illinois
- **Number of Employees:** 3000

Challenge

- Improve data center performance
- Standardize on single data center vendor to streamline infrastructure and management
- Reduce data center resources, including support, space, power, and cooling

Solution

- Transitioned data center to Cisco UCS Blade Servers and Cisco Unified Fabric for greater performance and flexibility with integrated management

Results

- Saved over $200,000 in capital expenditures due to data center efficiencies
- Streamlined infrastructure and management
- Reduced data center footprint by 20 percent

Technology / Application Partner

- Medical Information Technology, Inc.

Southern Illinois Healthcare standardizes on Cisco Unified Data Center environment.

Challenge

As a not-for-profit healthcare system, Southern Illinois Healthcare (SIH) is dedicated to promoting the health and well-being of people throughout the region. Overseeing three hospitals serving 16 counties in southern Illinois, SIH provides patients with expertise, compassion, and advanced care that is tailored to the needs of rural communities.

Founded more than 135 years ago, SIH has a long history of embracing technology to provide patients with quality care. More recently, a robust implementation of health information technology is further enhancing the healthcare provider's commitment to outstanding patient care by adding efficiencies and improving accuracy of workflows within and across hospitals and clinics.

More advanced electronic applications help administrators quickly and accurately manage scheduled appointments, while physicians and nurses can securely pull, share, or amend patients' electronic records. At the same time, clinicians can use applications to check drug interactions, streamline laboratory paperwork, and manage other essential activities.

Over the years, SIH built a strong technology foundation in its facilities. Unfortunately, the gradual additions of new applications and hardware resulted in a highly varied infrastructure with technology from numerous vendors. "Technology management was becoming overwhelming," says Dave Holland, vice president and CIO at SIH. "Looking forward, we knew we wanted to build an enterprise-ready environment supported by a single vendor. Our aim was to gain management efficiencies and ensure smooth service delivery for everyone throughout the organization."
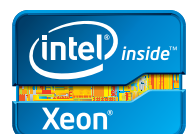
> "We're performing better and running much more efficiently in a more compact data center. After moving to Cisco UCS, we eliminated planned expansions in power and cooling, saving us more than $200,000 in capital expenditures."
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> — **David Holland**
> Vice President and CIO
> Southern Illinois Healthcare

SIH first decided on application vendors, including MEDITECH for clinical healthcare applications, a Lawson enterprise resource planning (ERP) system, and NextGen systems for medical practice automation. After evaluating application requirements and researching reliable and scalable data center solutions, SIH decided to standardize on a Cisco® Unified Data Center platform, featuring Cisco Unified Computing System™ (UCS®) blade servers and Cisco Unified Fabric. "Hospital environments support demanding, complex applications, so an agile, virtualized data center is essential in providing topnotch patient care," says Doug Pratt, consultant technical development at MEDITECH. "The performance and reliability of data center solutions supporting key applications empower physicians and administrators to work better and smarter."

Solution

SIH migrated its data center from primarily HP servers to a virtualized environment built on Cisco UCS Blade Servers for improved performance, agility, and scalability. The majority of the servers are Cisco UCS B200 M2 Blade Servers. The 21 enterprise-class servers balance simplicity with performance and density to host the VMware virtual servers that run applications from MEDITECH, Lawson, and other critical solution providers.

Cisco B200 M1 Blade Servers host Cisco Unified Communications (UC) to streamline sharing and collaboration between colleagues at SIH. Two scalable Cisco UCS B440 M2 High-Performance Blade Servers also offer improved virtualization performance to support NextGen healthcare solutions for SIH physician practices. In addition, four Cisco UCS B230 M3 Blade Servers are virtualized with VMware and dedicated to hosting the virtual desktop infrastructure (VDI) used by nurses and physicians on the job. By taking advantage of the broad range of Cisco UCS servers, SIH has the flexibility to deploy the right technology in the right areas for easy, unified data center management.

Many data center environments require separate connections to each server, but the Cisco Unified Data Center platform streamlines connections, requiring only one per chassis. Cisco UCS 6120 Fabric Interconnects offer low-latency network connections and a single management point for the entire Cisco UCS chassis. Cisco Catalyst® 6500 Series Switches and Cisco Nexus® 5548 Series Switches provide high-performance networking connections. The Cisco Nexus 5548 Series Switches, in particular, take advantage of unified ports that support Ethernet, Fibre Channel, and Fibre Channel over Ethernet to link the chassis, network, and EMC storage for a reliable, easily managed infrastructure.

The unified environment is key to enabling SIH to take a proactive approach to addressing the diverse needs of its network users. From a single Cisco UCS Manager console, SIH can quickly manage both the physical and virtual data center environment. With streamlined connections, adding new blade servers is as simple as inserting a new blade into the chassis, with no additional cables needed. Templates simplify management even further, whether the IT staff is reconfiguring servers or provisioning a new virtual server in minutes.

"Working with Cisco UCS, you can tell that the servers were built with virtualization in mind," says Nathan Phoenix, manager of infrastructure systems at SIH. "All components of the data center, from Cisco to VMware to EMC, work together extremely well. We are confident that our systems and applications will keep running for healthcare providers and administrators to provide patients with the best possible care."

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CISCO

Many of the core systems for SIH use MEDITECH applications. From registration and patient care systems to medical records and radiology services, MEDITECH provides comprehensive and integrated electronic health records (EHR) that keep SIH running smoothly. The integrated Cisco UCS environment improves performance of MEDITECH applications by delivering information quickly and reliably across network and storage connections.

Results

The virtualized Cisco UCS environment promotes greater use of clinical applications, improving patient services. With the VDI environment on Cisco UCS, nurses and doctors can securely access patient records, lab results, and process workflows from any computer or tablet with an Internet connection. This capability helps medical personnel work with the most accurate and up-to-date information possible. Cisco UCS offers greater performance that accelerates boot-up and log-in on VDI machines, eliminating wasted time that could be better spent interacting with patients.

One of the biggest advantages of MEDITECH's solutions is that data is tied to a patient, not to a location. With records stored in a central data center, any hospital, clinic, or physician's office in the SIH system can quickly access records and MEDITECH applications. This capability helps SIH deliver consistent, high-quality services and eliminate miscommunications as patients progress through their treatments.

In addition to improved IT management and application performance, the Cisco Unified Data Center environment also uses resources more effectively, reducing footprint, cooling, and power costs. By migrating to Cisco UCS, SIH eliminated eight server racks from the data center and transformed 20 percent of the floor space into offices. "We're performing better and running much more efficiently in a more compact data center. After moving to Cisco UCS, we eliminated planned expansions in power and cooling, saving us more than $200,000 in capital expenditures," says Holland.

Standardizing on Cisco in the data center boosted IT staff productivity as well. IT staff only needs to be trained on a single vendor's solution, and SIH no longer needs to keep a supply of extra parts supporting dozens of vendors. The streamlined infrastructure not only eliminated the need for SIH to double its IT staff, but the ease of centralized management also enables existing staff to spend less time dealing with infrastructure and more time supporting new applications and services.

The virtual Cisco environment enhances business continuity, a critical criteria for hospital applications. SIH takes numerous measures, including diesel generators and off-site backup systems, to keep systems up and running at all times. "Many of these systems are critical to patient care, so they can't go down for any reason," says Holland. "The virtualized Cisco UCS environment enables us to deploy new virtual servers to replace any failed ones on the fly, effectively eliminating downtime for our systems."

Next Steps

With the data center in place, the next step for SIH is to establish a true disaster recovery center using Cisco Unified Data Center solutions for even greater insurance against failures. SIH also intends to grow its environment to support more applications, services, and capacity. "It's hard to predict the direction of future medical technologies, so we need agile systems and applications that enable us to respond to changing demands. We have confidence that solutions such as those from Cisco and MEDITECH will scale quickly and easily to meet our needs," says Holland.

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Product List

Data Center Solutions
- Cisco Unified Computing System (UCS)
- Cisco UCS B200 M1/M2 Blade Servers
- Cisco UCS B230 M3 Blade Servers
- Cisco UCS B440 M2 Blade Servers

Routing and Switching
- Cisco Nexus 5548 Series Switches
- Cisco Catalyst 6500 Series switches

Network Management
- Cisco UCS Manager

Fabric Interconnects
- Cisco UCS 6120 Fabric Interconnects

Voice and IP Communications
- Cisco Unified Communications (UC)

Applications
- VMware
- MEDITECH C/S 5.6
- NextGen
- Lawson

Storage
- EMC

For More Information

To find out more about Cisco Unified Data Center, please visit: www.cisco.com/go/unifieddatacenter.
To find out more about Cisco UCS, please visit: www.cisco.com/go/ucs.
To find out more about MEDITECH solutions, please visit: www.meditech.com.

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