

Hospital Provides Secure Virtual Desktops to Clinical Staff



Executive Summary

Beaufort Memorial Hospital

- Healthcare
- Beaufort, South Carolina, U.S.
- 1600 clinical users

Business Challenge:

- Increase data center flexibility to support information delivery goals
- Support 1600 users with four technicians
- Increase infrastructure redundancy

Network Solution:

- Cisco UCS B250 M1 Extended Memory Blade Servers with Intel Xeon 5600 Series processors
- Cisco UCS B200 M2 Blade Servers with Intel Xeon 5600 series processors
- Cisco Nexus 1000V Series Switches
- Cisco MDS 9500 Series Multilayer Director

Business Results:

- Virtualized desktops to securely deliver patient information everywhere needed
- Simplified caregiver login and roaming through single sign-in
- Greatly reduced infrastructure management time and complexity
- Created virtual test environment to support software migration and testing

Virtualization frees Beaufort Memorial Hospital's clinicians and IT teams to focus on patient experience.

Business Challenge

Beaufort Memorial Hospital (BMH) has been recognized for nine consecutive years as one of the nation's Most Wired Small and Rural Hospitals, according to Hospitals & Health Networks magazine. From robotic surgery to bedside medication verification, BMH uses technology to help deliver optimum patient care with flexibility and cost-effectiveness.

The BMH data center supports approximately 1600 users at its main hospital and satellite physician offices with applications including:

- Meditech, BMH's primary clinical application
- Picture archiving and communication system (PACS)
- Physician office electronic medical record (EMR) system
- Microsoft Exchange and productivity applications

When CIO Ed Ricks joined BMH, he inherited a mismatched collection of 150 physical servers and an infrastructure that was not optimized to support the hospital's expanding use of clinical software.

"We needed more flexibility from our data center environment," says Ricks. "We needed the ability to serve the right software to the right people at the right place so that we could improve clinical workflow without making technology a hindrance to our users."

BMH has been moving to a completely electronic medical record for all patients, enabling information access by caregivers in examination, treatment, surgical, and patient rooms. Although the network and workstations were secured, caregivers had to log into and out of a computer each time they needed information. This cumbersome process added up to hours per week, which took time from patient care.





“By virtualizing our data center and end-user workstations, we are well on the way to significantly increasing productivity for clinical users and for our team. Not only is virtualization viable for our clinical areas, it is a big improvement.”

—Edward Ricks,
Chief Information Officer
and Vice President,
Information Services

At the same time, BMH must comply with regulations like the Health Information Portability and Accountability Act (HIPAA) and Sarbanes-Oxley. To keep information accessible yet secure, Ricks wanted to deploy desktop virtualization across the hospital. Thin client devices would give clinical staff immediate, secure access to patient information without having to log in each time. Cost-effective thin client devices would replace expensive desktop computers that required continuous patching and maintenance, enabling four technicians to centrally support 1600 users.

Finally, healthcare is a 24-hour-a-day business, and clinical information systems cannot be down. Ricks wanted to increase redundancy in the network to help ensure maximum uptime.

Network Solution

BMH worked with eGroup, a Cisco® Premier Certified Partner with expertise in cloud services, application services, and end-user computing, to create a roadmap for data center transformation. For the initial server virtualization project, eGroup recommended Cisco UCS Unified Computing System™ (Cisco UCS™) for its scalability, compute power, and virtualization capabilities.

BMH implemented Cisco UCS B-Series Blade Servers with Cisco B250 M1 blades and B200 M2 blades. The Cisco UCS B250 M1 Extended Memory Blade Server includes Intel® Xeon® 5500 Series processors, which automatically and intelligently adjust server performance according to application needs. The Cisco UCS B200 M2 Blade Server uses Intel Xeon 5600 Series multicore processors to deliver superior performance and efficiency. Each Cisco UCS chassis can expand for unprecedented scalability while helping ensure consistent, predictable application responsiveness as virtual desktop clients are added.

eGroup also recommended the Cisco Nexus® 1000v Series Switch to add virtualization intelligence to the data center network for delivering highly secure, multitenant services. BMH's storage area network (SAN) is connected using Fibre Channel and Cisco MDS 9500 Series Multilayer Directors that provide high availability and storage connectivity for converged LAN and SAN fabrics. Cisco MDS 9124 Multilayer Fabric Switches are used for special-purpose application systems.

BMH implemented more than 100 virtual servers to reduce the cost and management requirements of managing physical servers, while gaining additional performance and scalability benefits that the hospital lacked previously.

“Virtualization enables us to have test servers for many environments that we previously could not test because of physical infrastructure limitations,” says Ricks. “It also prepared us for deployment of our virtualized desktop environment.”

Ricks and his team implemented a pilot virtualized desktop environment using VMware View, which provides a single sign-on and enables sessions to roam with users. Currently, caregivers in the same-day surgery and mental health units are piloting the environment.

Product List

Data Center Solutions

- Cisco UCS B250 M1 Extended Memory Blade Servers and B200 M2 Blade Servers

Routing and Switching

- Cisco Nexus 1000V Series Switches
- Cisco MDS 9500 Series Multilayer Directors
- Cisco MDS 9124 Multilayer Fabric Switches

Management

- Cisco UCS Manager

Applications

- VMware View
- Microsoft Exchange and productivity applications

Business Results

“By virtualizing our data center and end-user workstations, we are well on the way to significantly increasing productivity for clinical users and for our team,” says Ricks. “Not only is virtualization viable for our clinical areas, it is a big improvement.”

The virtualized desktop environment will save time for caregivers. Clinicians can authenticate one time on a thin client and be securely logged into the applications and information they need. As caregivers roam between workstations or physical devices, the logical session remains open. A nurse can work in a patient room, tap her badge, leave the room, and be securely logged out. She walks into the next patient room, taps her badge to be authenticated, and the session is open right where she left it. Now clinicians can spend more time with patients instead of logging in and out of computers.

The Cisco UCS extended memory capability helps ensure high performance in the virtualized desktop environment. Being able to pair economical, highly dense memory architecture on a single blade is cost-effective and delivers great flexibility. Virtualized desktops can be managed from a central location in a fraction of the time. Provisioning servers now takes minutes instead of days using Cisco UCS service profiles and templates.

“Cisco UCS and its capabilities deliver tremendous time savings and management simplicity,” says Ricks. “Now we can manage the entire computer environment as a single entity.”

Virtualization also gives BMH licensing flexibility for its Microsoft applications. The hospital pays one cost for physical and virtual server licensing and can scale usage without having to pay for additional licenses for each incremental server. BMH also used the virtual desktop environment for training its users. Instead of having to manage dozens of full desktop computers, system administrators could manage the training environment as a single instance.

“Even if users do not notice a difference, the virtualized environment gives my team much greater agility,” says Ricks. “We can back them up better, provide more portability in their workflow, and make the technology more invisible to them.”





Next Steps

BMH plans to migrate and virtualize its Microsoft Exchange environment, extending the benefits of virtualization. Currently, the hospital's senior management team is using virtualized desktops, and BMH will expand the deployment to all clinical areas over the next year. Cisco Nexus 5000 Series Switches are also planned for deployment to help increase redundancy and performance. BMH is continuing to implement technology solutions that help it deliver the best patient care possible, and Cisco solutions play a large role.

For More Information

To find out more about Cisco Unified Computing System, visit:
www.cisco.com/go/unifiedcomputing.

To learn more about Beaufort Memorial Hospital, visit www.bmhsc.org.

This customer story is based on information provided by Beaufort Memorial Hospital and describes how that particular organization benefits from the deployment of Cisco products. Many factors may have contributed to the results and benefits described; Cisco does not guarantee comparable results elsewhere.

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