

Hospital Reduces Data Center Costs

Salem Hospital adopted Data Center Business Advantage technologies to enable server virtualization, unified fabric, and energy savings.

EXECUTIVE SUMMARY
Salem Hospital <ul style="list-style-type: none">• Healthcare• Salem, Oregon• 4000 employees
BUSINESS IMPACT <ul style="list-style-type: none">• Lowered equipment costs• Reduced cabling costs with a unified fabric• Supported anticipated growth in electronic medical records and medical imaging• Saved 15 to 20 hours weekly on SAN management

Business Challenge

Salem Hospital is a regional medical center, offering medical services and technology to people in and around Oregon's Willamette Valley. A not-for-profit hospital, it is one of the largest of Oregon's 57 acute care hospitals and operates the state's busiest emergency department.

The hospital needed to upgrade its main data center to help ensure business continuity, reduce energy consumption, and accommodate larger data volume from electronic medical records (EMR) and the picture archiving and communications system (PACS). "We could meet all of those needs by virtualizing our data center servers," says Ken Kudla, chief information officer for Salem Hospital. "First, we would need 10 Gigabit Ethernet."

Solution and Results

The Salem Hospital IT department built a Cisco® Data Center Business Advantage architecture, working with Phoenix Health Systems for strategic planning, and collaborating on implementation with NetXperts, a Cisco Healthcare Select Partner with over 12 years of experience in the healthcare industry. "We proposed the Cisco Nexus family because it provides the throughput and scalability needed for PACS, while not affecting the availability of EMR and other applications critical to patient care," says Dave Norinsky of NetXperts. "The NX-OS provides a common, stable, and manageable operating system for both the Nexus and MDS platforms, minimizing lifetime support costs."

One pair of Cisco Nexus 5020 Switches supports Fibre Channel over Ethernet (FCoE). They connect over lossless 10 Gigabit Ethernet to the hospital's newer servers, which host multiple healthcare applications and Microsoft Exchange, which is scheduled for implementation in mid-2010. The Cisco Nexus 5020 Switches send storage traffic to a Cisco MDS 9500 Multilayer Director and data traffic to the Cisco Nexus 7000 Switch at the core. Another pair of Cisco Nexus 5020 Switches connects to existing Gigabit Ethernet servers, by way of Cisco Nexus 2000 Fabric Extenders.

The main benefits of the Cisco Data Center Solutions for Salem Hospital include:

- **Lower capital costs:** The Salem Hospital campus includes multiple buildings. Rather than purchasing additional switches for the distribution layer, the IT group used the virtual device context (VDC) feature of the Cisco Nexus 7000 Switch to create a separate virtual switch that acts as the distribution-layer switch.
- **Lower cabling costs:** FCoE support in the Cisco Nexus 5020 Switch supports a unified fabric for server data and storage traffic, reducing the number of server cables from four to two. What's more, the Cisco Nexus 5020 Switches are deployed close enough to the servers to use relatively inexpensive Twinax cabling.

- **Support for new generation of healthcare applications:** With 10 Gigabit Ethernet and a unified fabric, Salem Hospital can confidently expand its PACS and EMR programs. The EMR database grew to 60 gigabytes in the first 18 months. “We can also fully utilize the faster input/output operations per second for our servers,” says Kudla.
- **Simplified management:** All Cisco Nexus switches use the same operating system, NX-OS, minimizing training requirements. And all Cisco Nexus 2000 Fabric Extenders are managed through a single Cisco Nexus 5020 Switch.
- **Streamlined IT organization:** The hospital IT department uses Cisco Fabric Manager Software to manage both the Cisco Nexus 5020 and Cisco MDS 9500 Series Multilayer Director, and saves 3 to 4 hours daily to manage the SAN. “Our networking and storage teams can now cross-train and collaborate more effectively,” says Kudla. “We no longer need to dedicate a full-time employee to SAN management.”
- **Increased availability:** The IT department can upgrade the Cisco Nexus switches without interrupting hospital applications because of the in-service software upgrades (ISSU) feature. Scheduling downtime for upgrades in a 24-hour healthcare environment is not practical, and the ISSU feature helps to ensure business continuity.
- **Reduced energy consumption:** Before the data center upgrade, Salem Hospital was using more than 80 percent of available energy, the maximum recommended. “We have reduced our energy consumption while also increasing reliability and data throughput compared to our previous solution,” says Kudla.
- **Increased agility:** When the hospital introduces a new IT service, the application team can provision a virtual server in just 30 minutes, compared to 90 minutes for a physical server. Rather than separately provisioning a server, storage, and networking connection, the team simply provisions the virtual machine (VM), and then everything else happens automatically. Up to 50 VMs reside on each server, reducing equipment and operational costs.

Salem Hospital plans to implement the Cisco Unified Computing System and begin using Cisco Nexus 1000V, a software switch on a server. The Cisco Nexus 1000V will give the hospital IT department the flexibility to move virtual machines across the server farm, preserving their settings. The network administrator will manage the Cisco Nexus 1000V switch alongside the other Cisco Nexus switches, offloading the burden from the server administrator.

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—Ken Kudla, Chief Information Officer, Salem Hospital

For more information about Cisco Data Center Business Advantage technologies, visit: <http://www.cisco.com/go/dc>

For more information about the Cisco Nexus Switch Family, visit: <http://www.cisco.com/go/nexus>

For more information about the Cisco MDS, visit <http://www.cisco.com/go/mds>



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