Healthcare Provider Saved $1 Million on Data Center

Saint Joseph Health System used Nexus family to save on cabling, hardware, energy consumption, and space.

<table>
<tr><td colspan="1">EXECUTIVE SUMMARY</td></tr>
</table>

EXECUTIVE SUMMARY

SAINT JOSEPH HEALTH SYSTEM
- Healthcare
- Orange, California USA
- 20,000 Employees

BUSINESS RESULTS
- 85% savings on cabling, which funded data center switches
- 80% less space needed
- 25% reduction in energy consumption

Business Challenge

Saint Joseph Health System (SJHS) is an integrated healthcare delivery system sponsored by the Sisters of St. Joseph of Orange. Serving patients in California, Texas, and New Mexico, the system comprises 14 acute care hospitals as well as home health agencies, hospice care, outpatient services, skilled nursing facilities, community clinics, and physician organizations.

SJHS has two regional data centers, in Texas and California. Its enterprise data center strategy includes server consolidation and virtualization as well as high availability for critical applications, including the healthcare information system and picture archiving and communication system (PACS). As part of the strategy, SJHS decided to transform its California data center, which is used for regional as well as enterprise applications. "We were nearing the power capacity of the old data center, and we wanted to adopt best practices such as separate hot and cold aisles and redundant server connectivity," says Mike Shandraw, enterprise data center\manager, SJHS.

Availability of the data center network was critical. "Hospitals can't tolerate interruptions when clinicians need to

> "With any other design, we would have spent US$1.3 million for copper cabling, overhead racks, and patch panels. With the Cisco Nexus family, cabling cost $190,000, an 85 percent savings. The money we saved paid for the Cisco Nexus equipment implementation."
> —Mike Shandraw, Enterprise Data Center Manager, St. Joseph Health System

access a critical lab result or image before or during a procedure," says Bill Lazarus, vice president of IT, SJHS.

In the original proposed data center design, each server had four connections to data center switches in a separate row. During design review, it emerged that the racks could not support the weight of the cables.

Solution and Results

SJHS found its solution in the Cisco® Nexus family of data center switches. Rack-optimized servers connect over Gigabit Ethernet to a Cisco Nexus 2000 Fabric Extender at the top of the rack, which acts as a patch panel. The fabric extenders connect to Cisco Nexus 5010 switches in the middle of the row, which connect over 10 Gigabit Ethernet to dual Cisco® Catalyst 6509 Switches at the network core. The Cisco Nexus solution provided the following benefits:

- **Lowered up-front cable costs by 85 percent:** The new data center design eliminated 23 miles of copper compared to the previous data center design. "With any other design, we would have spent US$1.3 million for copper cabling, overhead racks, and patch panels," says Shandraw. "With the Cisco Nexus family, cabling cost $190,000, an 85 percent savings. The money we saved paid for the Cisco Nexus equipment."

> "The Cisco Nexus family is helping SJHS remain at the forefront of technology access as we continue to deploy advanced clinical applications in a critical 24-hour healthcare environment."
> —Bill Lazarus, Vice President of IT, St. Joseph Health System

- **Reduced power consumption by 25 percent:** The Cisco Nexus switches will consume 28.3 kilowatts, compared to 37.6 kilowatts with the other solutions considered, a 25 percent savings. SJHS projects five-year energy savings of US$455,000. The front-to-back airflow and rear-facing ports on Cisco Nexus switches support the hot-aisle/cold-aisle design, which SJHS anticipates will significantly reduce cooling costs.
- **Consolidated from 336 to 36 rack units:** The Cisco Nexus switches occupy 36 rack units, 300 fewer than in the previous data center architecture. "Recovering this space will enable us deploy additional applications and infrastructure necessary to support forecasted growth," says Lazarus.
- **Reduced hardware costs by 35 percent:** Using Cisco Nexus 5010 Switches and Nexus 2000 Fabric Extenders saved 35 percent on up-front hardware and maintenance contract costs compared to a traditional end-of-row network design.

> "The Cisco Nexus platform allowed us to design an efficient, performance-enhanced data center architecture within a small footprint."
> —Tim Thornton, Engineering Lead, St. Joseph Health System

- **Laid the foundation for future growth:** "The Nexus family prepares us to accelerate our adoption of virtualization and other Data Center 3.0 technologies," says Shandraw. "We're ready to take advantage of 10-Gbps connectivity in the near future and 40-Gbps and 100-Gbps in the longer term." The Cisco Nexus 5010 will also enable SJHS to adopt a unified fabric to carry all data center traffic, including application, Fibre Channel storage, and IP-based storage." Lazarus concludes, "The Cisco Nexus family is helping SJHS remain at the forefront of technology access as we continue to deploy advanced clinical applications in a critical 24-hour healthcare environment."

Figure 1.   The Cisco Nexus Data Center Solution Lowered Hardware Costs by 35 Percent
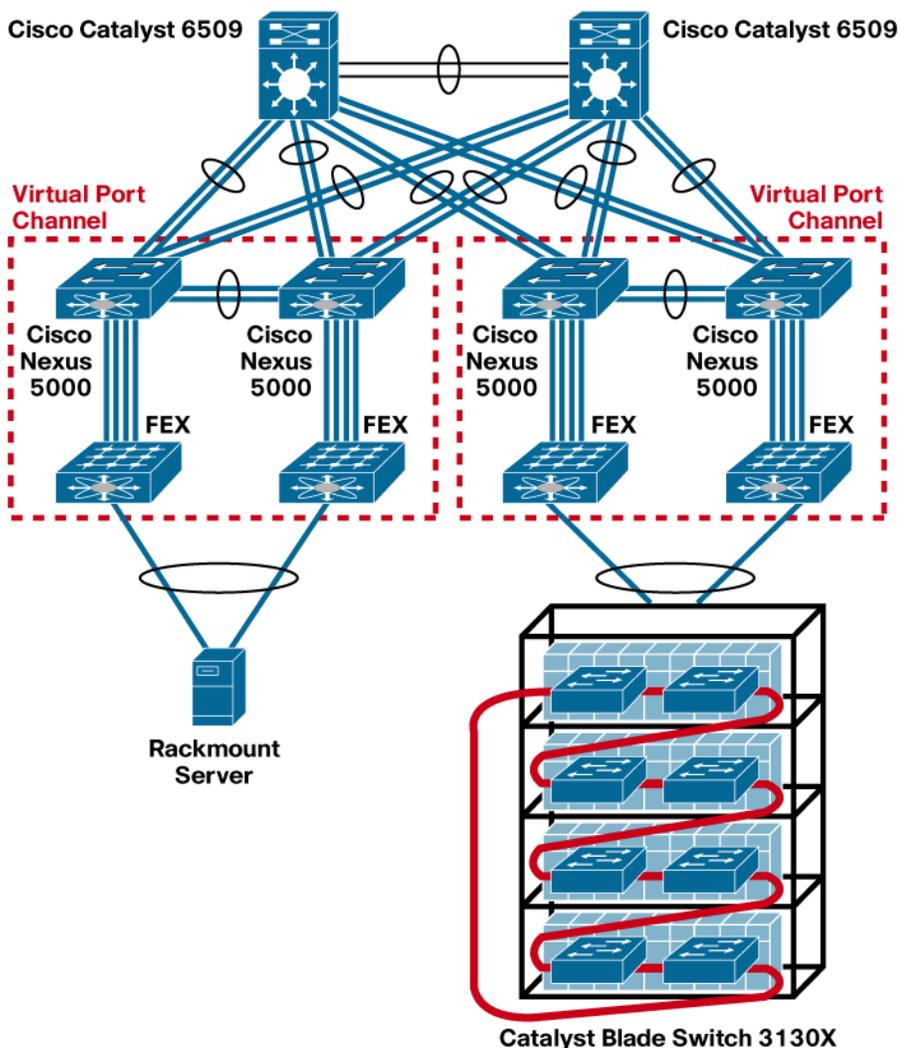
For more information about Cisco Data Center 3.0 solutions, visit http://www.cisco.com/go/dc.