

ROCKFORD HEALTH SYSTEM

ETHERNET SOLUTIONS

Rockford Health System Practices Good Medicine and Expert HCIT

Objective

- Deploy a high-performance network infrastructure that supports bandwidth-intensive applications such as PACS, VoIP, EMR, and others
- Replace aging network equipment with more cost-effective solutions that support protocols such as multicast routing, security features, and other standards-based protocols

Solution

- The network core is based on the Brocade BigIron RX Series of Layer 2/Layer 3 Ethernet switches
- Brocade FastIron Edge Series PoE are distributed along the network edge
- Brocade SecureIron protects the network perimeter
- Brocade IronView Network Management software allows administrators to easily configure and manage the network while providing network-wide visibility

Results

- The advanced, scalable design of Brocade solutions ensures the reliable delivery of all healthcare applications
- RHS reduced costs due to the Brocade equipment's lower power consumption
- INM gives RHS a network-wide view of activity even at the port level
- RHS is no longer vulnerable to man-in-the-middle attacks, as Brocade solutions support ARP inspection and DHCP

Rockford Health System (RHS), located in Rockford, Ill., is the largest health system serving northern Illinois and southern Wisconsin. RHS has a long tradition of care, built on a commitment to clinical excellence, cutting-edge technology, and meeting the health-care needs of the region.

SUMMARY

During the last seven years, Rockford Health System (RHS) has appeared among the list of Hospitals and Health Networks' 100 Most Wired Hospitals and Healthcare Systems six times. The study measures U.S. healthcare systems on their use of healthcare information technology (HCIT) to connect with patients, physicians, nurses, payers, health plans, and employees.

Rockford Memorial Hospital has also achieved national recognition. It has been named in an independent national research study as a recipient of the 2007 Distinguished Hospital Award for Patient Safety, according to HealthGrades, the nation's leading healthcare ratings company. This distinction reflects Rockford Memorial's performance among the top five percent of hospitals nationally for patient safety outcomes.

OBJECTIVE

To maintain its elite leadership role, RHS recently upgraded its network infrastructure with Brocade BigIron® RX and Brocade FastIron® Edge Series PoE switches. RHS needed to replace its Cisco networking equipment because some devices were failing and the collapsed backbone design was outdated. The edge switches had become especially problematic as they had reached the end of their lifecycle and could not support necessary modern network protocols such as multicast routing.

The RHS IT team thoroughly reviewed competitive networking equipment before choosing the Brocade solutions. The exhaustive review compared speed, chassis design, backplane, redundancy, BTUs emitted, electrical requirements, maintenance expense, training, a company's positioning in the marketplace, and more.

"We are growing in terms of IT. We are rolling out projects that improve the safety of patient and clinical documentation. As we move down this road, we realized that we needed to refresh our infrastructure.

BROCADE

SUCCESS STORY

We were looking for something better,” says Dennis L’Heureux, senior vice president and CIO at RHS. “We concluded that Brocade was better, faster, and less expensive to deploy.”

SOLUTION

Brocade BigIron RX 8 and RX 16 switches deliver traffic throughout the core, and FastIron Edge Series PoE switches manage traffic along the network edge.

SecureIron® devices protect the network perimeter. IronView® Network Manager (INM) further protects the network with Snort and sFlow, as well as providing network management plus visibility and configuration aid.

The RHS has network spans nine medical facilities in northern Illinois and southern Wisconsin. More than 3,900 users rely on the network, which has more than 2,100 clients and a mix of 200 Windows, Linux, UNIX, and Novell servers.

RESULTS

Since upgrading the network with Brocade equipment, RHS has gained a tenfold performance improvement. Instead of multiple gigabit backbones with 10/100 Mbps to the desktop, the network now has multiple 10-Gigabit Ethernet backbones with Gigabit Ethernet to the desktop.

Bandwidth demand for applications such as the Picture Archiving Communication System (PACS), VoIP, and electronic medical records was a key reason for moving to 10 Gigabit Ethernet backbone. Without a high-capacity network, a single image from the PACS can create a bottleneck. RHS future plans include adding VoIP and moving

to electronic charting and an automated system for maintaining patient records. Each of these applications demands a reliable, high-performance network.

“EMR is the next big push for us. We will do a lot more documenting, imaging, and digital video. Brocade allows us to do all that,” says L’Heureux.

With the Brocade BigIron RX in the network, RHS can implement its upcoming technology plans. The backbone switch supports 1.54 terabits per second data throughput per system, a massive improvement over the previous backplane in the RHS network. RHS is impressed with the Brocade BigIron’s N+1 redundancy, which makes the mission-critical network much more reliable. “I could lose an entire switch fabric or a portion of the box and still keep the network going,” says Joe Granneman, chief technology officer at RHS.

The fast reboot time—four seconds—further contributes to network uptime. “Most switch reboot times are two minutes,” Granneman says. “The shorter recovery time gives us more flexibility.”

Choosing Brocade also has meant reduced costs, especially in terms of power consumption. “When we did power comparisons, the Brocade FastIron Edge Series PoE was much more efficient for redundant power supplies,” explains Granneman.

If RHS had chosen a Cisco environment, the healthcare center would have needed to add closet space, more power supplies, and additional cooling capacity. “The extra costs to support the Cisco devices were not practical,” says L’Heureux.

RHS depends on INM to manage the network infrastructure and help secure it from network threats. The previous network devices left RHS vulnerable to man-in-the-middle attacks. Brocade solutions support Address Resolution Protocol (ARP) inspection and Dynamic Host Configuration Protocol (DHCP) snooping, which will help prevent those types of security breaches.

INM also uses sFlow and Snort to detect potential threats. “I’m very impressed with the inline Snort process and its ability to detect traffic anomalies,” says Granneman. “With INM, we have better visibility across the entire network and its many ports. INM can tell us when something is wrong with the network.”

From start to finish, Brocade has worked closely with RHS to ensure the network’s success. The IT team got a huge jumpstart on the implementation because the equipment arrived with full documentation. “Our staff is spread pretty thin, so receiving the switch configurations was a big help. Everything was well organized and well documented,” says Granneman.

According to Granneman, the main reason the installation went so smoothly was the consistent support from Brocade. “We have worked with the same support engineer from the beginning, and he really understands our network requirements,” he notes.

L’Heureux adds that Brocade credentials as an engineering company are a good match for RHS. He states “As an engineering-based company, Brocade is well prepared to discuss technology. We expect to have a long and fruitful relationship with Brocade.”

For more information, visit www.brocade.com.

Corporate Headquarters

San Jose, CA USA
T: +1-408-333-8000
info@brocade.com

European Headquarters

Geneva, Switzerland
T: +41-22-799-56-40
emea-info@brocade.com

Asia Pacific Headquarters

Singapore
T: +65-6538-4700
apac-info@brocade.com

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