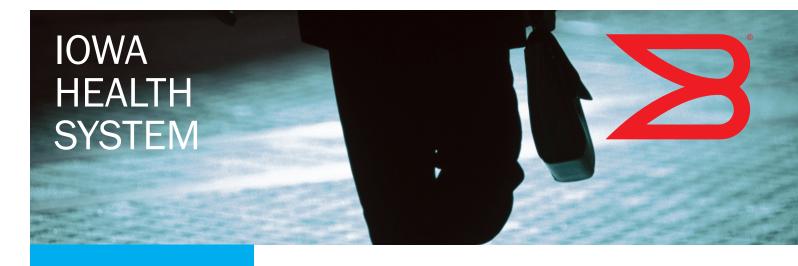
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### **HEALTHCARE**

#### **HIGHLIGHTS**

- Delivers high network performance and reliability to support PACS and EMR systems, patient-centric applications, and mobile devices
- Helps reduce capital expenses by up to \$150,000 by eliminating unnecessary network equipment
- Provides unmatched simplicity with a single, unified network architecture built on proven solutions
- Helps protect IT investments by providing a standards-based, best-of-breed solution that seamlessly integrates with existing systems

## Brocade Provides Long-Term Network Solution for Iowa Health System

During the past decade, lowa Health System (IHS) has become one of the nation's most integrated health systems. It encompasses 27 hospitals and 200 clinics with more than 2700 patient beds, and is the largest integrated healthcare system in the state of lowa. Like many healthcare systems in the United States, IHS understands the need to build a robust, scalable network that can support critical applications now and in the future.

For IHS, the main challenge was determining what its network would need to support in five or seven years. "We are always looking at what we want to do in the future," says Tony Langenstein, Chief Technology Officer at IHS. "Our plans include deploying Unified Communications and cloud computing across distances greater than 100 miles."

Such foresight is essential because IHS has few opportunities to upgrade its network. "We can't do a network upgrade every three years," explains Langenstein. "Our network providers must be able to design an infrastructure that can evolve as technology changes and scale to meet our future requirements."

# A NETWORK BUILT TO SUPPORT EMR, PACS, MOBILITY, UC, CLOUD COMPUTING

During the implementation of its Picture Archiving and Communication System (PACS), IHS' network began experiencing significant performance issues that placed the efficacy of the system at risk. "We need the user experience at the hospitals and at the patients' bedsides to be the best it can possibly be," says Brett Taylor, Assistant Director of Technology at IHS.

The current network was outdated and could not provide the reliability and throughput needed to support PACS and future applications. Working closely with Brocade, IHS upgraded its core infrastructure in 19 key locations, including its two mission-critical data centers. As a result, IHS was able to create a single, unified data architecture that would meet the demands of not only the PACS and EMR systems, but also future enabling technologies, such as Unified Communications (UC) and cloud-based computing.

To support its growing bandwidth and scalability requirements, IHS deployed Brocade® MLXe Core Routers. These

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routers provide industry-leading 100 Gigabit Ethernet (GbE), 10 GbE, and 1 GbE wire-speed density; and rich IPv4, IPv6, Multi-VRF, MPLS, and Carrier Ethernet capabilities. The IT team also installed Brocade VDX® switches with Brocade VCS® Fabric technology. Together, these technologies enable high-performance, low-latency 10 GbE server connections while creating a migration path to Ethernet fabrics, which can support higher rates of server virtualization, deliver faster application response times, and reduce infrastructure complexity and costs.

For high availability and redundancy, IHS leverages VMware's solution for Virtual Machine (VM) mobility. Using Brocade MLXe Core Routers and VPLS, IHS was able to create a Layer 2 path between its data centers and extend its VLAN architecture across the MPLS cloud, allowing VMs to be moved seamlessly from one data center to the other.

The IT team also deployed Brocade FCX Series switches at the network edge to deliver 1 GbE connectivity and 10 GbE uplink to the Brocade MLXe core. In addition, they installed Brocade ICX® 6610 Switches for out-of-band management and support for non-virtualized 100 MbE/1 GbE services.

### HIGHER PERFORMANCE AND RELIABILITY

The network upgrade had a fast and profound effect on overall performance. "After implementing the Brocade solutions, the packet losses and errors disappeared, and network performance improved dramatically," says Taylor.

The PACS is now reliably transferring thousands of images across network spans exceeding 200 miles in less than five seconds. "The quantity and size of the images grow every year. The Brocade network can handle the load and deliver the traffic at the required speeds with no problem," says Taylor.

With its performance and reliability issues resolved, IHS has moved forward with rolling out a centralized EMR system, confident that its new network can support the multitude of devices accessing critical patient records.

### INVESTMENT PROTECTION AND COST SAVINGS

Once deployed, the Brocade networking solutions worked seamlessly with existing systems from Nortel and Cisco. For IHS, this interoperability was critical, as it allowed the healthcare provider to leverage previous IT investments. "We learned through experience that having a standards-based approach and multiple vendors gives us more options and greater flexibility. Brocade is very much a standards-based organization and met those criteria for us," says Langenstein.

In addition, IHS also was able to add MPLS functionality on top of the core deployment without having to spend \$150,000 on additional equipment.

#### SUPPORT FOR CONTINUED SUCCESS

During deployment, the Brocade team worked closely with IHS to ensure a successful rollout. Langenstein deemed the project a success when the network went into production on time and budget as it seamlessly integrated with the existing network equipment.

Brocade also has provided valuable support in maintaining the network's health. "The Brocade team has stood next to us in the trenches through everything. I cannot say enough good things about them, and we could not be happier," says Taylor.

IHS relies on the Brocade Network
Monitoring Service (NMS) to closely watch
the network and ensure that it stays up and
running. The monitoring service recently
notified IHS about problematic modules,
allowing IT to proactively update them
before they caused network issues.

#### A NETWORK READY FOR THE FUTURE

When IHS moves forward with its UC and cloud computing plans, its new network will be able to handle the additional traffic. By creating a single, robust data architecture from the data center to the WAN, IHS is now ready to face the future of the evolving digital healthcare environment, confident that its network will scale and grow with the organization.

"Our industry is constantly changing, and Brocade networking solutions can adapt based on our technology needs. We want to be a leader in technology innovation in the healthcare space, and Brocade gives us the robust network we need," says Langenstein.

### **ABOUT BROCADE**

Brocade networking solutions help organizations transition smoothly to a world where applications and information reside anywhere. Innovative Ethernet and storage networking solutions for data center, campus, and service provider networks help reduce complexity and cost while enabling virtualization and cloud computing to increase business agility. Learn more at www.brocade.com.

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