

Data Center Refresh Optimizes Medical Practice



Executive Summary

Customer Name: Capital Region Orthopaedics

Industry: Healthcare

Location: Albany, New York

Number of Employees: 210

Challenge:

- Upgrade data center to support electronic medical records and digital x-rays
- Help ensure backup and disaster recovery of digital charts and files with faster failover
- Facilitate practice growth with forward-thinking virtualized architecture

Solution:

- Cisco Unified Computing System lays framework for next-generation data center
- Cisco Nexus 7000, 5000, 2000 switches support increased data and storage traffic
- Cisco Catalyst 4500 switch acts as modular platform for disaster recovery site

Results:

- Improved performance of surgery center management application by 10 times
- Enhanced physician and employee productivity with faster-running applications
- Gained greater data center agility to efficiently adopt new technologies in future

Capital Region Orthopaedics embraces 21st century medical tools and boosts productivity with Cisco Unified Computing.

Challenge

Based in Albany, New York, Capital Region Orthopaedics is a multidisciplinary healthcare practice that specializes in musculoskeletal problems and injuries. With a team of 30 physicians and seven regional medical offices, the practice combines specialists, diagnostics, and surgery in one practice, offering patients a convenient, one-stop medical facility for bone and joint recovery.

As part of its mission of advancing patient care, Capital Region Orthopaedics is committed to adopting the latest medical technologies. When the practice decided to make the transition to electronic medical records (EMR), as well as digital x-rays, it realized that it would need to upgrade its data center to support heavier demands on the network infrastructure. "We decided that a complete data center refresh was the only way to accommodate these new tools," says Ray DeCrescente, chief technology officer at Capital Region Orthopaedics. "As we were also expanding to two new locations, the timing was right to move forward with an upgrade."

The implementation of digital charts, however, would also require a disaster recovery site. "When you're dealing with medical charts, it's imperative that you have sound backup and a good disaster recovery strategy to protect patient information," says DeCrescente. Yet a data center refresh and disaster recovery implementation would not be a simple undertaking, especially with shareholders' investment on the line. "As you scale up the investment, the economic impact of mistakes is magnified," says Dr. David Quinn, a physician and chairman of IT at Capital Region Orthopaedics.

Solution

To help ensure a successful upgrade, DeCrescente felt it best to go with a single vendor to design a fully compatible system. Capital Region Orthopaedics looked at numerous companies, but in the end, decided to go with a trusted source: Cisco.

“Not only did we see solid performance from Cisco UCS, we were also very impressed by how it lent itself to virtualization. It’s really designed and tuned for a virtual environment.”

– Ray DeCrescente
Chief Technology Officer
Capital Region Orthopaedics



“We’ve been a Cisco house forever,” says DeCrescente. “We knew that their products and solutions offered the reliability and longevity that we needed.”

The Cisco Unified Computing System™ (UCS™) played an important role in the practice’s decision to move forward with Cisco, because the system supports virtualization, another key goal in the project. “Not only did we see solid performance from Cisco UCS, we were also very impressed by how it lent itself to virtualization,” says DeCrescente, noting Cisco® UCS Manager’s fast and easy server provisioning capabilities. “It’s really designed and tuned for a virtual environment.” With the company’s Microsoft Exchange environment now virtualized on Cisco UCS B200 M2 Blade Servers, as well as additional C-Series Rack-Mount Servers, IT has noticed a measurable performance and flexibility boost.

Cisco Nexus® 7000, 5000, and 2000 Series Switches were selected to form the data center’s core switching infrastructure. With high availability and switch virtualization, a Nexus 7010 Switch was deployed in Capital Region Orthopaedics’ main data center, along with a Nexus 5020 Switch. Because the Cisco Nexus 5020 Switch is optimized for high-performance computing applications, it was also chosen for use in the practice’s disaster recovery site. Cisco Nexus 2248 switches are in each location, helping to lower costs with simpler cabling requirements.

For any disaster recovery site, having a resilient, secure, and reliable architecture is absolutely critical, which is why Capital Region Orthopaedics chose the Cisco Catalyst® 4500 Switch to act as the modular platform for its off-site backup location. To further protect patient information, the practice also implemented a Cisco Security Monitoring, Analysis and Response System (MARS) and a Cisco ASA 5500 Series Adaptive Security Appliance.

With these core components deployed in its data center, Capital Region Orthopaedics now has an efficient, high-performance network to support its key applications. These applications include programs from Microsoft, Source Medical, Merge eFilm, and most importantly Allscripts, the practice’s new practice management system, which is virtualized on a Microsoft SQL Server running on Cisco UCS. “Allscripts and Microsoft Dynamics GP (Great Plains) are really our key programs, so we need them running at optimal performance,” says DeCrescente. “The new Cisco servers are handling them extremely well. I expect to see big improvements in the service we can now give to our clients.”

Results

As any IT professional working in the healthcare field is likely aware, finding the budget to upgrade technology is not always easy. “Medicine is one of the last industries to really put its money into IT and consider it just a cost of doing business,” says Dr. Quinn. “It can be very hard for physicians to accept that. But time is money, and when our IT staff is able to save time by using the management features provided by Cisco and VMware, ultimately that means a reduction in our operating costs, which is a great value to our organization.”

DeCrescente also highlights the significant improvement in the performance of Source Medical AdvantX, Capital Region Orthopaedics’ surgery center management application, which along with Allscripts went completely virtual. “We’re seeing AdvantX perform 10 times faster in the new Cisco UCS environment,” says DeCrescente. “Based on those results, I’m envisioning the same thing happening with Allscripts and Microsoft Dynamics GP.”



Product List

Data Center Solutions

- Cisco Unified Computing System (UCS)
 - Cisco UCS B200 M2 Blade Servers
 - Cisco UCS C-Series Rack-Mount Servers

Routing and Switching

- Cisco Catalyst 4500 Switch
- Cisco Nexus 7000, 5000, 2000 Series Switches

Security

- Cisco Security Monitoring, Analysis and Response System (MARS)
- Cisco ASA 5500 Series Adaptive Security Appliance

Applications

- Allscripts
- Microsoft Dynamics GP (Great Plains) and SQL Server
- Source Medical AdvantX
- Merge eFilm

These faster-running applications help boost the productivity of Capital Region Orthopaedics' physicians and staff. "When doctors are dealing with patients, they want to be able to see records and respond as fast as they can," says DeCrescente. "This can put a huge tax on the network. But with the new Cisco switching fabric in our data center, we have the bandwidth to support heavier data and storage traffic."

In addition to these immediate benefits, DeCrescente also sees the value of the practice's new data center looking ahead. "As we continue to make changes or bring in additional equipment in the future, we can now be very agile in how we work," he says. "I look forward to taking advantage of patient portals and EMRs to continue enhancing patient care."

Next Steps

With its data center refresh successfully completed, Capital Region Orthopaedics is currently working toward integrating mobile medical devices into its offices. "Once we're fully transitioned to EMR, we're going to want our physicians to be as mobile as possible, using technologies like the follow-me-desktop," says DeCrescente. "Based on our success with Cisco, I look forward to bringing in more Cisco products to further optimize our medical practice."

For More Information

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

To find out more about Cisco Nexus Switches, visit: www.cisco.com/go/nexus.

To find out more about Cisco Catalyst Switches, visit: www.cisco.com/go/catalyst.

To find out more about Cisco Security solutions, visit: www.cisco.com/go/security.

This customer story is based on information provided by Capital Region Orthopaedics 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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