

# Children’s Hospital Enhances Clinical Workflow



## Executive Summary

**Customer Name:** Miami Children’s Hospital

**Industry:** Healthcare

**Location:** Miami, Florida

**Number of Employees:** 650 physicians, 2000 employees

### Challenge:

- Evolve infrastructure to support electronic medical records (EMR) system
- Minimize administrative effort and environmental overhead required to scale data center
- Plan, design, and deploy backup data center

### Solution:

- Cisco Unified Computing System (UCS) forms cost-effective server foundation
- Cisco Nexus 7000 Series Switches provide scalability and density for 10GigE
- Cisco MDS 9506 Multilayer Director connects all storage area networks

### Results:

- Gained stable, medical-grade network to support EMR and help ensure business continuity
- Reduced data center backup time by 50 percent with simplified management
- Improved productivity of hospital staff, thanks to 99.999 percent network availability

## Miami Children’s Hospital adopts desktop virtualization using Cisco data center solutions, sees productivity soar.

### Challenge

A world leader in pediatric healthcare, Miami Children’s Hospital ranks among the most prestigious medical institutions in the United States, as seen in publications including *U.S. News and World Report’s* “America’s Best Children’s Hospitals” issue. The 289-bed hospital offers more than 40 pediatric specialties and subspecialties, with a staff consisting of more than 650 physicians and 2000 employees. In addition to being South Florida’s only licensed specialty hospital exclusively for children, Miami Children’s Hospital is home to the largest pediatric teaching program in the southeastern United States.

When the hospital decided to transition to electronic medical records (EMR), the IT team jumped at the opportunity to refresh its end-of-life equipment. “The initiative to implement EMR led us to develop a completely new data-center strategy to deploy a medical-grade infrastructure,” says Ed Martinez, senior vice president and chief information officer at Miami Children’s Hospital. “This included not only preparing our network for the performance requirements of the new Cerner system, but also building a backup data center for business continuity.”

At the same time, the hospital wanted to expand its use of virtualization from 50 percent to a 100-percent virtualized environment, while improving workflow for administrators and clinicians. “We were looking for a way to minimize the administrative effort and overhead while increasing our VMware virtualization usage,” says David Bratt, the hospital’s director of technology services. Working with partner Presidio Networked Solutions, Miami Children’s Hospital began exploring options to address these challenges.

**“With Cisco technology,  
we can now provide  
a robust platform to  
ensure the best quality  
of care for our patients.”**

– **Ed Martinez**  
Senior Vice President and  
Chief Information Officer  
Miami Children’s Hospital



## Solution

After conducting detailed analyses of multiple vendor solutions, the team chose networking and data center equipment from Cisco. Cisco Unified Computing System™ (UCS™) not only met all of the hospital’s key criteria, but was also the most financially advantageous solution. “We believe we get the biggest bang for our money with the Cisco UCS chassis,” says Bratt. “The integration with VMware and Citrix technologies further extends those savings and makes it very convenient in terms of overall management.”

Miami Children’s Hospital deployed Cisco® UCS B200 Blade Servers and C210 M2 Rack-Mount Servers, as well as the Cisco UCS 6140XP 40-Port Fabric Interconnect solution. The UCS platform primarily hosts the hospital’s Citrix desktop virtualization infrastructure, and will ultimately support more than 3000 doctors, nurses, and administrators.

“The environment is designed to support a variety of application delivery methods, with desktop virtualization being a main area of focus,” says Bratt. The hospital is running a suite of Cerner applications on Cisco UCS. In all, the applications consist of approximately 35 programs, including EMR, which are used for different modalities of care, including radiology, general clinical work, and urgent care centers. In addition to Lawson and Kronos applications, it will also virtualize the Microsoft Exchange environment on UCS.

To work in concert with its server infrastructure, Miami Children’s Hospital selected Cisco Nexus® 7000 Series Switches to act as the switching platform both in the hospital’s data center and backup facilities. With the scalability and density for 10GigE transport, these switches provide a huge bandwidth boost in the network, helping accelerate key administrative and clinical functions.

Miami Children’s Hospital also uses the Cisco MDS 9506 Multilayer Director to connect its various storage area network (SAN) environments, which mainly consist of EMC technologies and several HP storage arrays.

## Results

For Miami Children’s Hospital, as with any 24-hour operation, data center resiliency is key to helping ensure the successful delivery of services. And thanks to its new Cisco supported infrastructure, the hospital now has the backup that it needs to do so. “With the redundant power supplies and supervisors of the Nexus 7000s, we can count on our data center being highly available,” says Kevin Feliciano, team lead of network engineering at Miami Children’s Hospital. “These switches also make executing backups much more efficient. We’ve been able to reduce backup time from two hours to one hour, a 50 percent time savings.”

Bratt finds Cisco UCS Manager, the embedded management console in UCS, further simplifies administration by providing a global view of the hospital’s entire server environment. “Whereas other products may have similar types of features, they are a la carte,” he says. “With Cisco UCS, it is practically a turn-key solution.”

Thanks to its new architecture that can scale without affecting application responsiveness, IT can help ensure an uncompromised experience for hospital staff and administrators. “Our network availability is at an all-time high at 99.999 percent,” says Feliciano. “As a result, we’re hearing very positive feedback from our end users. It makes the doctors and staff very happy and productive.”



## Product List

### Data Center Solutions

- Cisco Unified Computing System (UCS)
  - Cisco UCS B200 Blade Servers
  - Cisco UCS C210 M2 Rack-Mount Servers
  - Cisco UCS 6140XP 40-Port Fabric Interconnect

### Routing and Switching

- Cisco Nexus 7000 Series Switches
- Cisco Nexus 1000V Series Switches
- Cisco MDS 9506 Multilayer Director

### Applications

- Microsoft Exchange
- Citrix (desktop virtualization)
- VMware (server virtualization)
- Cerner
- Lawson
- Kronos

After seeing the performance of virtualized applications running on Cisco UCS, Miami Children’s Hospital feels confident moving forward with desktop virtualization. “With Cisco UCS, you almost can’t tell the difference between running an application on a standalone Mac or Intel system versus a virtual desktop, which is very impressive,” says Javier Oropesa, manager of network engineering.

Finally, one of the greatest benefits that the hospital recognizes with its new data center and backup facility, in addition to now having a fully redundant environment, is peace of mind. “Cisco is one of the largest players in the networking space,” says Oropesa. “So there is definitely a sense of security knowing that whatever architecture and products we put in, we’ll have a stable, reliable network. We see Cisco as a vendor that will always provide us with the support we need, a company that we can trust.”

### Next Steps

Miami Children’s Hospital looks forward to the day when its data center is 100 percent virtual. It is currently deploying Cisco Nexus 1000V Series Switches to support its VMware environment. “By implementing virtualization, our vision is to deliver a seamless user experience no matter what device is being used,” says Martinez. “With Cisco technology, we can now provide a robust platform to ensure the best quality of care for our patients.”

### For More Information

To find out more about Cisco Unified Computing, visit: [www.cisco.com/go/ucs](http://www.cisco.com/go/ucs).

To find out more about Cisco Nexus Switches, visit: [www.cisco.com/go/nexus](http://www.cisco.com/go/nexus).

To find out more about Cisco MDS solutions, visit: [www.cisco.com/go/mds](http://www.cisco.com/go/mds).

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