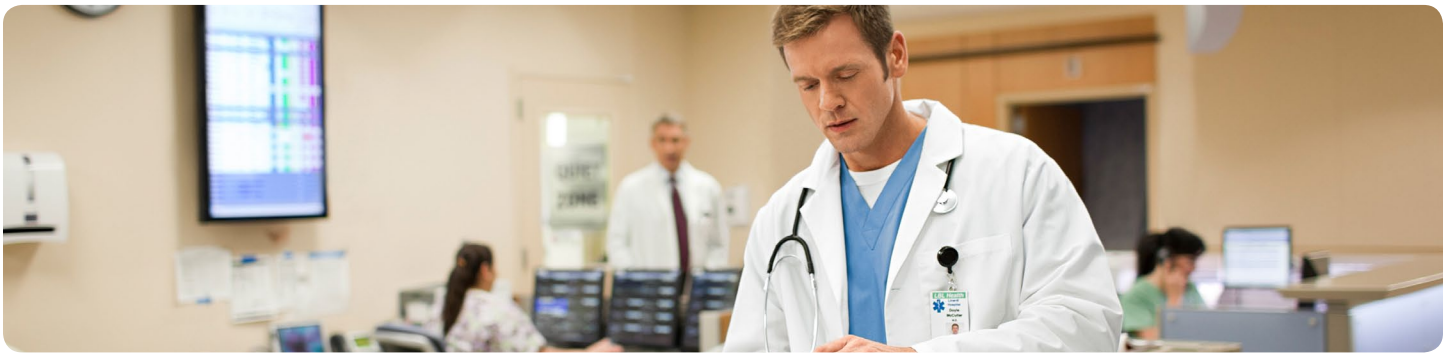
Customer Case Study

Hospital Frees Up 45 Minutes Daily for Clinicians



Executive Summary

- **Customer Name:** Seattle Children's
- **Industry:** Healthcare
- **Location:** Seattle, Washington
- **Number of Employees:** 7500 Employees, Partners, Providers, and Support Professionals

Challenge

- Continually improve quality of care and patient experience
- Simplify IT environment
- Improve business continuity

Solution

- Cisco Desktop Virtualization Solutions with Citrix XenDesktop and Citrix XenApp

Results

- Freed up 45 minutes daily for clinicians to spend more time with patients
- Achieved projected US$1 million ROI in 4-5 years
- Helped enable clinicians to securely access health information systems anywhere, using any device

Seattle Children's deployed thousands of virtual desktops leveraging the Cisco Desktop Virtualization Solutions portfolio with Citrix XenDesktop.

Challenge

Seattle Children's specializes in meeting the unique physical, emotional, and developmental needs of children from infancy through young adulthood. Consistently ranked among the nation's best children's hospitals, Seattle Children's provides inpatient, outpatient, diagnostic, surgical, rehabilitative, behavioral, emergency, and outreach services through its 323-bed hospital in Seattle, Washington and several clinics across the Pacific Northwest.

The hospital's clinicians work with thousands of patients annually, and providing high-quality care requires making every minute count. In particular, the less time physicians and nurses spend trying to access health information systems such as electronic medical records, databases, and real-time patient monitoring systems, the more time they have to interact with young patients and their families.

"Previously, our doctors and nurses were spending too much of their time interacting with technology rather than patients," says Wes Wright, chief information officer at Seattle Children's. For example, to prepare for a patient visit, clinicians needed about two minutes to log on to a workstation in the team room and to log in to each application. Then they had to log on again from the workstation in the examining room. Repeating this process an average of a dozen times a day took an estimated 45 minutes away from patient care. Furthermore, clinicians could not access applications or data from mobile devices such as laptops or tablets, but only fixed workstations with specific software.

"With patient information at their fingertips wherever they go, our nurses and physicians have reached a new level of efficiency. This has been a huge benefit for our practitioners as well as the children they care for. Citrix XenDesktop and Cisco UCS are the foundation for our success with desktop virtualization."

– **Wes Wright**
CIO,
Seattle Children's

Individually managing hundreds of applications on thousands of workstations also burdened the hospital IT staff, which spent 90 percent of their time on application support. This focus limited the time available for strategic projects.

To free up clinicians' time for patient care and minimize IT overhead, Seattle Children's decided to virtualize desktops, with plans to replace 5500 workstations throughout the hospital with zero clients. "We were actively trying to get IT out of the face of our clinical users," says Wright.

Solution

To provide a faster, mobile computing experience without changing the way that practitioners work with applications, Seattle Children's selected a personal virtual desktop delivery model powered by the Cisco Desktop Virtualization Solutions portfolio with Citrix XenDesktop. The Cisco Desktop Virtualization Solutions are based on the Cisco Unified Computing System™ (UCS®), which combines compute, networking, storage access, and integrated management.

As the first step in the transition to the Cisco Desktop Virtualization Solution Seattle Children's used on-demand applications, part of Citrix XenApp, to virtualize the hospital's clinical environment, including the Cerner clinical information system, Epic electronic medical records system, and more than 380 other applications. Virtualization significantly lowered the IT burden by helping enable centralized application management. But workstation configurations still tended to drift over time, causing performance issues.

Next, the hospital virtualized employee desktops, using Citrix XenDesktop. Desktop virtualization accelerated provisioning, allowed mobile clinicians to work from anywhere, and minimized login times.

The hospital has already replaced 3000 of nearly 5500 workstations with zero clients that connect directly to the Citrix XenDesktop environment on Cisco UCS. Doctors and nurses can also connect to their desktops and applications from laptops or tablets by installing Citrix Receiver.

Seattle Children's Cisco desktop virtualization solution environment includes Cisco UCS B200 M2 Blade Servers with 192 GB of memory. Just 25 Cisco UCS blade servers support 3000 virtual desktops. "Each Cisco UCS blade server can host 120 XenDesktop virtual desktops, double the target of 60, with no performance drop off," says Wright. In contrast, the hospital's previous blade servers could not scale cost effectively. When previous servers were fully loaded with 60 desktops, application performance decreased by 30-40 percent and login took 2-10 seconds longer.

Cisco Advanced Services deployed Cisco UCS in a few days, and then Denali Advanced Integration, a Cisco Premier Partner, implemented the Citrix software and thin clients. The first virtual machines were operating within one hour.

All components of the Cisco Desktop Virtualization Solutions with Citrix XenDesktop system, including Cisco UCS and Nexus 5000 switches, endpoints, and Citrix XenDesktop, are tested and documented as a Cisco Validated Design. This arrangement kept deployment costs low while maximizing performance, redundancy, and security.

Results

Improved Healthcare Experience

Clinicians now have more time to interact with patients, because they can access their desktops and applications in 10-15 seconds instead of two minutes. They save more time by not having to look for an available workstation, because they can connect from a wireless laptop or tablet anywhere in the hospital. Loss of a mobile device does not expose patient information, because the information is never stored on the device itself, but rather in the data center.

"The new technology has had a significant impact on patient care," says Dr. Ruth McDonald, MD at Seattle Children's. "On our previous platform, I would have to log on to each computer and wait for it to boot up. I'd have to close my applications and then go to the clinic and open them up again. Now, the virtual desktop allows me to maximize the time that I spend in face-to-face contact with the patients that I see."

Wright conservatively estimates that the joint solution from Cisco and Citrix saves approximately 45 minutes daily for clinicians. They can use that time to share additional information with patients, contributing to patient satisfaction and a high-quality healthcare experience.

"With patient information at their fingertips wherever they go, our nurses and physicians have reached a new level of efficiency," says Wright. "This has been a huge benefit for our practitioners as well as the children they care for. Citrix XenDesktop and Cisco UCS are the foundation for our success with desktop virtualization."

Increased Operational Efficiency

Freed from having to manage individual applications on thousands of workstations, the hospital IT staff can devote more time to strategic projects to continually improve the healthcare experience.

Adding more Citrix virtual desktops is much faster on Cisco UCS because server administrators can just click to apply a predefined Cisco UCS service profile to the blade server. "We can provision applications and desktops for new users in minutes," says Wright. "We can also add capacity for hundreds more virtual desktops in five minutes or less by adding a preconfigured blade to the Cisco Unified Computing System and in 15 minutes by adding a new blade out of the box. Adding that amount of capacity to our previous servers would have taken hours."

$1 Million ROI

The Cisco Desktop Virtualization Solution with Citrix XenDesktop has also lowered desktop costs compared to the previous environment. "Taking into account the consolidation of resources from the workstation space into the data center, even after our investment in new storage, servers and infrastructure, we estimate roughly $1 million ROI [return on investment] within a 4-5 year period," says Wright.

One reason for the ROI is that Cisco UCS blade servers support up to 120 desktops with no performance tradeoffs. "Our Cisco Unified Computing System decision is a game-changer," says Wright. "I can fully load the system, and no one can detect a difference. It enables the hospital to fully utilize what we paid for and achieve performance that exceeds our expectations." In addition to delivering performance, Cisco UCS blade architecture makes for a highly efficient, consolidated footprint and has lowered energy bills by an estimated 5-10 percent.

Product List

Cisco Virtual Workspace (VXI) Smart Solution

- Cisco Unified Computing System with Cisco B200 M1 Blade Servers
- Cisco Nexus 5000 Series Switches
- Citrix XenServer
- VMware ESX

Desktop and Networking

- Citrix XenDesktop
- Citrix Receiver
- Citrix Access Gateway

Wireless

- Cisco Unified Wireless LAN

Helpdesk costs have decreased as well, because employees no longer call with application performance issues resulting from workstation configuration. In addition, zero clients cost less than workstations and have a 10-year, rather than a 5-year, life expectancy, leading to a $1.2 million cost avoidance over a 5-year period. Up to 20 percent of traditional desktop support problems have also been eliminated, including the need to re-image desktops, software not working, and hardware failures, allowing IT staff to focus their attention on higher-value projects.

Business Continuity

Finally, Cisco Desktop Virtualization Solution with Citrix XenDesktop helps enable clinicians and staff to access applications and information from home or other locations, increasing productivity. And when hospital employees cannot commute to the hospital or clinics because of weather or other problems, they can access their desktops from anywhere, using any device, and have the same experience that they would have at the hospital. In the event of a disaster, the hospital IT team can quickly add new Cisco UCS server capacity to offer additional virtual desktops to hospital employees.

Next Steps

Seattle Children's continues to add virtual desktops for more employees. Now the hospital is looking to expand the virtual desktop to a complete virtual workspace, including everything employees need for work, including voice and video as well as virtual desktops.

"The relationships we have with Cisco and Citrix are one of the major reasons we are expanding our desktop virtualization plans," says Wright. "Not only is the solution far superior, but also the support that we received from Cisco and Citrix enabled us to significantly increase clinician productivity, which translates directly to the benefit of our patients and families."

For More Information

To find out more about Cisco Desktop Virtualization Solutions with Citrix XenDesktop, please visit www.cisco.com/go/citrix and www.cisco.com/go/vdi.
To find out more about Cisco solutions for healthcare, please visit: www.cisco.com/go/healthcare.

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