College Delivers Courses Anytime, Anywhere

Executive Summary

- **Customer Name:** Sheridan College
- **Industry:** Higher Education
- **Location:** Oakville, Ontario, Canada
- **Campus profile:** 3000 Full- and Part-Time Staff; 18,000 Full- and 35,000 Part-Time Students

Challenge

- Maintain leadership in digital learning space with innovative IT solutions
- Give students freedom to learn from anywhere and on any device
- Lower IT costs and move to more flexible, scalable architecture

Solution

- Cisco UCS helps enable consolidation, virtualization, and cloud computing
- Cisco Nexus switches support 10-Gigabit connectivity
- Cisco Unified Communications provides integrated emergency response system

Results

- Reduced TCO to operate environment, including 78 percent reduction in power use
- Improved service levels with faster provisioning
- Facilitated innovation and helped ensure continued success of students and faculty

Sheridan College migrates applications from RISC-based architecture to Cisco UCS to enhance digital learning.

Challenge

Sheridan College is one of Canada's leading postsecondary educational institutions, renowned for its leadership in the field of digital media studies. With a focus on providing skills-based educational programming that integrates theory with application, Sheridan prepares students for careers in visual and performing arts, business, community services, and technical fields. Between its three campuses in Brampton, Mississauga, and Oakville, Ontario, Sheridan serves approximately 18,000 full-time students a year.

One of Sheridan's key differentiators is its pioneering use of mobile computing technology in the educational environment. The college holds the distinction of providing the most extensive use of laptop computers in academic programs among Canadian postsecondary institutions. According to Sumon Acharjee, chief information officer at Sheridan College, the college continually strives for academic innovation.

"We have many strategic fronts that are focused on innovating and invigorating our curriculum and the delivery of that content," he says. "Primarily, we want to give students the freedom and flexibility to learn on their own time, anywhere, anyplace, and on any device."

With a user base of such substantial size, however, achieving this innovation is no easy task. In addition to its 18,000 full-time students, Sheridan also serves 35,000 part-time students, so on any given day, the IT department is seeing up to 18,000 active network connections. Plus, each student may be using various devices. "Students are no longer using just one laptop," says Acharjee. "On average, I'm seeing at least two to four devices being used per day. As a result, it's important that we provide a robust wireless experience as well."

> "With Cisco UCS, we don't have to focus as much on keeping the lights on anymore. Rather, we're looking at different ways of using the technology to innovate and differentiate to ensure the continued success of our students."
>
> – **Sumon Acharjee**
> Chief Information Officer,
> Sheridan College

To address these key challenges, Acharjee and team felt that it was time to migrate off its legacy SPARC architecture (64-bit RISC [Reduced Instruction Set Computer]) and standardize on an x86-based platform.

Solution

Like any educational institution facing limited budgets, Sheridan College was looking to get as much processing power as possible for its investment, which led the team to the Cisco Unified Computing System™ (UCS®). "What really intrigued us about Cisco UCS was the memory management and memory capacity, as well as the system management capability of the box," says Acharjee.

With the college's 1800-square foot data center nearing capacity, the Cisco® UCS B200 Series Blade Servers offered Sheridan the perfect consolidation and virtualization solution. Indeed, over a mere two years' time, the college's infrastructure went from 40 to 85 percent virtualized, with a much smaller physical footprint.

The adoption of Cisco UCS has also allowed Sheridan to start moving certain applications and social media platforms that faculty and staff are using to the cloud. "We deployed a hybrid cloud to quickly migrate the loads and requirements of these solutions as needed. This way, we can ensure a seamless experience for our faculty and staff, whether they're on or off campus."

A number of key applications are running on UCS today, including student information systems and enterprise resource planning (ERP) systems, both of which are provided by Oracle PeopleSoft, running on Oracle databases. "Running Oracle PeopleSoft on UCS gives us more capacity to handle the peaks and valleys for connectivity," says Acharjee, noting that during open enrollment, he can see as many as 5000 concurrent connections per second. The UCS environment works in harmony with the college's VMware virtualization and EMC storage solutions.

Cisco Nexus® switches also played a key role in ramping up the college's efforts toward virtualization. The Nexus switches have enabled Sheridan to update its server connections from 1 Gigabit to 10 Gigabit, helping eliminate potential traffic obstructions. Sheridan is also an early adopter of the Cisco virtual switching system (VSS) protocol using the Cisco Catalyst® 6509 switch for its core network.

This network plays a key role in supporting Sheridan's incident response and emergency notification system, which was implemented with the help of Cisco and Cisco partner Unis Lumin. Says Acharjee, "Our telephone, fire alarm, PA system, and digital signs were all on disparate networks. So leveraging the power of our Cisco network, we converged all of those components together and based it on the Cisco Unified Communications system."

Sheridan is also able to provide a robust wireless experience for its mobile device users. "We built a very dense wireless network at our Mississauga campus, and we've actually taken that outside our campus through a partnership with the city of Mississauga," says Acharjee. "Now within the range of City of Mississauga, public spaces can connect to our wireless network and access our services without having to use public Wi-Fi, which can tend to create traffic bottlenecks for the city. Ultimately, this is allowing community members to have greater access to the resources we have here at the college." Together with its hybrid cloud, Sheridan's Cisco network is delivering some 135 courses to students any time, on any device, anywhere in the city.

Results

By consolidating and virtualizing its data center using Cisco UCS, Sheridan has increased its growth capacity, while reducing the number of physical servers that it needs from 200 to 70. The new environment supports 282 virtual and 70 physical machines. This consolidation has also reduced power consumption by 78 percent, and delivered better usage of physical hardware.

With the extra space that the college now has in its data center, the IT team has greater opportunities to restage the environment and provide continued innovation for students and faculty. In addition to testing new technologies and brainstorming future classroom designs, Acharjee and team have also identified potential revenue opportunities for the college. "We've partnered with other institutions to help them build their data center capacity and capabilities as well," he says.

Service levels have also improved in Sheridan's new x86-based environment, now achieving nearly 100 percent uptime thanks to virtualization. For example, when Acharjee is required to swap out a storage array, "I'm not taking outages or downtime to do these types of equipment swaps anymore," he says. "And that's true at the storage level, the server level, and the network level. In fact, our core network has not gone down for an unplanned outage for more than five years."

With the greater agility that it now has operating a Cisco Unified Data Center, Sheridan's IT team can now do more with less as well. "For the size and scale of our environment, I have a relatively small staff managing it," says Acharjee. "On the network side, I only have four engineers managing 35,000 network devices. And on the 400 servers we have, I only have four server administrators. So we're running a very efficient shop."

Most importantly, the Cisco deployment has put Sheridan's IT team in the perfect position to help support a 21st-century curriculum. "With Cisco UCS, we don't have to focus as much on keeping the lights on anymore," says Acharjee. "Rather, we're looking at different ways of using the technology to innovate and differentiate to ensure the continued success of our students."

Next Steps

Looking ahead, the Sheridan IT team is preparing to migrate Microsoft Exchange on to Cisco UCS, and is considering a virtual desktop infrastructure (VDI) deployment in the environment as well.

Outside of the data center, Acharjee's main focus will be on refitting Sheridan's 300 classrooms for video streaming and other multimedia capabilities. "We want to provide flexibility for professors and students, giving them the tools they need to teach and learn effectively," says Acharjee. "To accommodate that flexibility, we need to look at the architecture of our network and how to push our edge network into our classrooms. Cisco will continue to be a partner moving forward in all our technology efforts."

For More Information

To find out more about Cisco Unified Data Center, visit: www.cisco.com/go/unifieddatacenter.

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.