

JUNIPER'S HIGH-PERFORMANCE NETWORK GRADUATES WITH HIGH HONORS AT CHAMPLAIN COLLEGE

Summary

Industry: Education

Challenges: Refresh campus network to satisfy the college's technology-intensive academic focus and growing student population.

Selection Criteria: Network and security solutions would be high performance, secure, flexible, and standards-based to support the college's needs for the next decade.

Network Solutions:

- EX Series Ethernet Switches
- MX Series 3D Universal Edge Routers
- SRX Series Services Gateways
- SA Series SSL VPN Appliances
- STRM Series Security Threat Response Managers

Results:

- Delivered 10X increase in network bandwidth to support exploding demand for rich media in its curriculum
- Lowered total cost of ownership by collapsing multiple tiers
- Provided open, standards-based solution for future flexibility
- Met federal and industry compliance requirements more efficiently

For more than 125 years, Champlain College in Burlington, Vermont has been offering educational programs to help students learn the skills and experience they need to be successful in the real world. One example of Champlain College's approach to education is its Upside Down Curriculum, which allows students to jump right into their majors instead of having to take a slew of entry-level classes first. The college is home to about 2,000 students representing 35 states and 12 countries. It was recently ranked as the #1 "Up-and-Coming" college by *U.S. News & World Report's* "America's Best Colleges 2010."

Challenges

Preparing the YouTube generation for academic and career success requires a fresh approach to education. Champlain College's acclaimed degree programs include electronic game design, multimedia graphics design, and digital film. Video and other rich media are integral parts of learning across all majors. Online courses are growing. Students come to campus with laptops, tablets, smart phones, video cameras, and networking gear.

"Higher education is seeing an incredible growth in rich media. Homework for our students can require 30 to 50 gigabytes of storage," said Paul Dusini, CIO at Champlain College. "Even students studying English want to do video projects."

Champlain College created a 10-year strategic plan to meet the requirements of its technology-intensive education degrees and programs, and support the growing residential student population. Part of that plan called for a high-performance campus network.

Selection Criteria

Champlain College explored its options for a new campus network. Dusini and his team set out to find a network solution that would be high performance, secure, flexible, and standards based.

"The limitations of our existing vendor were starting to get frustrating," said Dusini. "We would look at ways to deliver better network performance or reduce expenses, and we'd just run into walls."

As part of the RFP process, Juniper Networks presented a design for a high-performance campus network. "As we learned more about Juniper, we saw that the performance is considerably better," said Dusini. "Juniper Networks® Junos® operating system is modular and newly developed, so it will scale better in the future as our needs change." Plus, after Champlain's technical staff got hands-on experience with the Juniper products, "they fell madly in love," he remarked.

Champlain needed a location-based E911 service to guide emergency personnel to the specific location on campus where help might be needed. The college has used VoIP for more than a decade. However, its E911 system only ran on a Cisco network, so the college evaluated E911 solutions as well.



Solution

Champlain College got a fresh start on its campus network with a Juniper Networks infrastructure. “We did an end-to-end replacement,” Dusini said. “There is not a single network switch that is not Juniper.”

Champlain was able to simplify the network design by removing the aggregation tier from the network in many places. Collapsing the tiers delivers better performance. Champlain uses Juniper Networks EX8200 line of Ethernet switches in the campus core and the EX4200 Ethernet Switch at the distribution points in buildings on campus. The campus has about 50 buildings that are connected by a fiber ring.

“The total cost of ownership has been better, the support has been better, and the performance has been better. We are much better poised to address our requirements in a number of different areas.”

Jim Bauer,
Director of network and infrastructure, Bates College

The EX8200 line of modular Ethernet switches delivers the port densities, scalability, and high availability required for demanding data center and campus core environments. The EX4200 line of Ethernet switches with Virtual Chassis technology combines the availability and reliability of modular systems with the economics and flexibility of stackable switches by enabling up to 10 interconnected switches to operate as a single, logical device—delivering a high-performance, scalable solution for data center and campus environments.

Junos OS is a reliable, high-performance operating system for Juniper routing, switching, and security solutions that reduces time and effort to plan, deploy, and operate network infrastructure. One release train provides stable delivery of new functionality, and one modular software architecture provides highly available and scalable software that keeps up with changing needs.

Strong security is important. “Designing a higher-end network is different,” said Dusini. “We have about 2,000 students, and many of them live on campus. We allow them to do things that corporations don’t usually allow. And we teach digital forensics, so our students know how to take things apart.”

Champlain College uses Juniper Networks SRX Series Services Gateways for firewall/IPsec VPN protection. The SRX Series use the Dynamic Services Architecture of Junos OS to scale integrated networking and security capabilities simultaneously.

Employees use Juniper Networks SA Series SSL VPN Appliances for anytime, anywhere access to their essential educational and administrative resources.

The college converted its E911 system to RedSky Technologies, which has a partnership with Juniper. “We have a lot of legitimate 911 calls, but because we’re spread across a residential area with 3,000 people, we need to be compliant with all requirements,” Dusini said. “First responders can’t just go to ‘Champlain College’—they need something more specific.”

Champlain College uses Juniper Networks STRM Series Security Threat Response Managers to meet its compliance requirements and to gain visibility into network traffic. STRM Series appliances provide a converged point of network performance and security management. The system has an integrated log as well as threat and compliance management for Juniper environments.

Results

“I sleep comfortably at night knowing that we have a 10-year plan,” said Dusini. “As our academic programs and the number of residential students grow, our infrastructure has the performance to handle it and it is flexible so it can meet future needs.”

Champlain has reaped a tenfold improvement in bandwidth with its new campus infrastructure. “The dean of our multimedia graphics and design program noticed that the network was much faster,” said Dusini. “Users don’t usually notice an infrastructure upgrade.”

Better performance is only one benefit. The college also achieved a lower total cost of ownership (TCO) by collapsing the network and eliminating the aggregation switches. In addition, running Junos OS in a network improves the reliability, performance, and security of existing applications. It automates network operations, allowing administrators more time to focus on new applications and services.

The deployment, although it was rip and replace, was smooth. The project came in on time and on budget, and it was done during the school semester.

Juniper security solutions help the college mitigate risks and meet its many compliance obligations. For instance, having secure remote access gives staff the flexibility to work from anywhere, but it helps the college meet its privacy requirements—including the Family Educational Rights and Privacy Act (FERPA), which protects the privacy of student education records. Secure remote access also helps the college be prepared for disasters and pandemics. If the college needed to shut down, the staff could readily work from home, thanks to the SA Series.

The STRM Series is easing the burdens of compliance. Champlain must comply with the antipiracy procedures in the federal Higher Education Opportunity Act (HEOA), which requires higher education institutions to take more proactive action to stop illegal downloads. Before the STRM Series, student interns had to review logs when the college received complaints about piracy. “The STRM Series helps us to identify illegal downloads or if hacking takes place,” said Dusini. “The visibility and control from the STRM Series greatly reduces our time spent on compliance,” he said.

Next Steps and Lessons Learned

Next up for Champlain College is to reexamine mobile and wireless. "Students don't use e-mail. They use Facebook and Twitter, and most people access them through mobile devices," said Dusini. "It's a question of giving people access and keeping them connected."

Like in other industries, educational institutions are facing the reality of finding the best value for the money. Champlain College is no exception, and Dusini offered this advice: "In higher ed, the performance challenge is mushrooming. You need to pick a product family and a partner that can take you the distance."

For More Information

To find out more about Juniper Networks products and solutions, visit www.juniper.net

About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.

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