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University of New Haven   integratiopartners

THE UNIVERSITY OF NEW HAVEN DELIVERS A SUPERIOR STUDENT EXPERIENCE WITH A BETTER NETWORK

Summary

Company:
The University of New Haven

Industry:
Education

Business Challenges:
Refresh campus and data center network to resolve reliability and application performance issues

Technology Solution:
- *MX104 Universal Routing Platform*
- *QFX5200 Ethernet Switch*
- *EX4600 and EX4300 Ethernet Switches*
- *Junos Space Network Director*

Business Results:
- *Refreshed connectivity in 35 campus buildings and the data center without business interruption*
- *Resolved issues with network resiliency and application performance*
- *Leveraged network automation to rapidly provision switches and simplify ongoing operations*

The University of New Haven offers students a unique combination of liberal arts education with real-world, hands-on career and research opportunities. The university is expanding, with four campuses in Connecticut and a satellite campus in Italy, 55 undergraduate and 31 graduate studies, including 20 new academic programs, and $180 million in new construction on the main campus. Enrollment has risen rapidly, and the university has more than 6,800 students.

Business Challenge

The University of New Haven wanted to build more than a network. Fast connectivity from classroom to dorm room is essential to meeting the digital expectations of students, professors, and staff, whether they are learning, collaborating, or relaxing. But the university's legacy network was unreliable and maxed out.

"We were experiencing network performance issues that affected the backbone, the campus networks, and the desktops," says Greg Bartholomew, director of networking and system operations at the University of New Haven. "We needed to overhaul the network."

Technology Solution

The university worked with Integration Partners, a network engineering firm with strong roots in higher education, to build a campus and data center network that would meet the users' expectations and administration's requirements for business continuity—and be flexible and simple to operate. The University of New Haven and its partner chose a Juniper solution, which provided a framework for the data center as well as for the campus network, all delivered with unified, cohesive management across the data center and campus domains.

"As part of the transition process for University of New Haven from Cisco to Juniper, Integration Partners provided the economic advantages of Juniper while developing the architecture design, supporting the deployment and educating the team," says Ethan Serlin, senior account executive at Integration Partners.

"We run 12 months a year, 7 by 24. It took a lot of logistics to coordinate an upgrade that affected every building, but we didn't get any user complaints because of the change."

- Greg Bartholomew, Director of Networking and System Operations, University of New Haven

Improving network resiliency was a priority to safeguard the operations of the university in the face of unplanned events. Moving from an antiquated Layer 2 network to a more reliable, scalable, and flexible Layer 3 network was the start. The university gained additional resiliency with the ability to route between its dual core networks. And it used multichassis link aggregation (MC-LAG) to provide node-level redundancy to further minimize the risk of network outages.

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As a growing university with a small IT staff, operational and management simplicity was a major goal, and Juniper Networks® Junos® Space Network Management Platform delivered. "The ability to control all of the switches using Junos Space was huge," says Brian Gibeault, senior network administrator at the University of New Haven. "Junos Space is a lifesaver for me."

The university uses the Juniper Networks MX104 Universal Routing Platform for highly resilient core and Internet edge routing. The 80 Gbps MX104 router is built for space- and power-constrained facilities. On the Internet edge, failover between redundant ISPs is dynamic, also an improvement from the legacy network.

The Juniper Networks QFX5200 Ethernet Switch, a line-rate, low-latency, high-density switch, is used for the data center core, with the Juniper Networks EX4300 Ethernet Switch deployed as a top-of-rack device. With the QFX5200 switch, the data center can run at 10GbE today, with flexible options to move to 25GbE, 40GbE, 50GbE, and 100GbE as needed, which future-proofs the network as bandwidth demands grow.

The 82-acre main campus in New Haven has more than 35 academic and administrative buildings, all connected by the highly scalable EX4600 Ethernet Switches. To meet the university's desire for operational simplicity, the EX4600 supports Juniper's Virtual Chassis technology, which allows up to 10 of the interconnected switches to operate—and be managed—as a single, logical device.

The data center and campus networks had to be replaced without business interruption. "We run 12 months a year, 7 by 24," says Bartholomew. "It took a lot of logistics to coordinate an upgrade that affected every building, but we didn't get any user complaints because of the change."

The university uses Juniper Networks Junos Space Network Director for service provisioning and management of its campus and data center networks. "Now when we're deploying a new switch, we use Space to update the switches," says Gibeault. "Instead of logging into more than 40 switches individually, we log into Space, and it takes five minutes."

Gibeault was new to Juniper Networks Junos operating system, the common OS for Juniper's switching, routing, and security devices, and the advantages quickly became clear, including automating network operations. "With Junos OS, it's nice having the same syntax no matter what device you log into. I can't imagine learning different syntax for different devices. I'd pull my hair out," says Gibeault. "Junos OS really makes my life easier."

It was the first time the University of New Haven had worked with Integration Partners, and the experience was positive. "Integration Partners has been very responsive to our needs, which we greatly appreciate," says Bartholomew. "Their knowledge and expertise has exceeded our expectations, and our expectations are high. There wasn't anything they couldn't solve, and hiccups were resolved swiftly. It's the best project I've done with any vendor."

"The performance complaints from the faculty, administrators, and students are gone, and the network is more stable."

Brian Gibeault, Senior Network Administrator, University of New Haven

Business Results

The new network is more reliable and easier to manage—but it's more than just a better way to move traffic. Skype, gaming, and streaming media—critical applications for students when studying, in class, or chilling out—now perform flawlessly. The university's learning management system and other academic

resources are readily available to students. The virtual desktop infrastructure is also faster, which the professors, students, and staff appreciate. For IT, important jobs like backups and software distribution no longer saturate the network. "The network has exceeded our expectations," says Gibeault. "The performance complaints from the faculty, administrators, and students are gone, and the network is more stable."

"We have better network redundancy with Juniper," says Bartholomew. "That helped us meet our business continuity goals."

Automation was key to a smooth rollout and has continued to deliver value for ongoing operations. Zero touch provisioning (ZTP) was used for all switches, and the configurations were deployed automatically via a script. "All switches were configured in one day," says Andrew Cassera, senior solutions architect at Integration Partners. The university is continuing to benefit from scripting and automation, including to protect the network against attacks from devices.

Next Steps

As the University of New Haven continues to attract more students, the IT team can be confident that it has built a better network that will support its institutional growth and students' expectations for constant connectivity.

For More Information

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

About Integration Partners

Our company culture is one that influences the customer experience. We are always improving our technical expertise so we will never let you fall behind. From this simple and often overlooked practice, we believe the greatest customer relationships come from trust. Now just think...What's Possible. Learn more at www.integrationpartners.com.

About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

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