

CentraComm and Juniper Networks Keep Creativity Flowing at Oberlin College

Summary

Company:

Oberlin College

End Customer Vertical:

Education

Business Challenge(s):

Upgrade campus network to support massive growth of digital media on mobile devices

Technology Solution:

- EX4600, EX4550, EX3300, and EX2200 Ethernet Switches

Business Results:

- Built scalable data center and edge network to easily handle high volumes of digital media
- Gained ability to support more mobile devices and bandwidth-intensive applications
- Secure remote access for vendors and employees
- Greatly simplified network operations

Founded in 1833, Oberlin College in Ohio has always been ahead of its time. Oberlin was the first college in the U.S. to admit female and African-American students and was part of the anti-war and Civil Rights movements of the 1960s. The college also has been on the cutting edge of sustainability and green initiatives, including using environmentally friendly vehicles on campus and encouraging students to bike to class or use public transportation. This forward-thinking mentality extends to the college's use of technology to keep up with the times.

Business Challenge

Oberlin College was experiencing a dramatic uptick in video and other traffic flowing across its network as well as a skyrocketing number of devices using the campus network. Digital media and mobile devices have become a critical element in learning and a mainstay of entertainment. Oberlin's 3,000 students, along with faculty and staff, enjoy an extensive library collection that includes multimedia and other digital materials. In addition, the college is a member of OhioLINK, which provides access to tens of thousands of digital media resources such as e-books, online journals, and databases.

The heavy use of digital media and video was causing network bottlenecks, which drove the need for a campus network refresh. "Everyone is watching video. The faculty is using video in the classroom during the day and students are watching in the evening. It's just more bandwidth, more bandwidth, and more bandwidth," says Barron Hulver, director of networking at Oberlin College.

The college decided to upgrade to a 10GbE network to support its students' educational needs and video habits, but at the same time, it wanted to lower the cost of network operations. The college was also deploying gigabit Wi-Fi in its academic buildings and residential halls, so the wired network needed to be ready to support the uptick in traffic.

Oberlin outlined a strategic plan to upgrade its campus network over a two-year period, which would spread out the capital costs across annual budgets. To find the best network solution, it wanted to work with a partner that could give the college a flexible process for the evaluation and upgrade.

"Once we saw the Juniper proof-of-concept and our research and references checked out, we knew Juniper would be the best choice for us."

Barron Hulver, Director of Networking, Oberlin College

Selection Criteria

Oberlin worked with CentraComm, a leading managed IT service provider based in Ohio, to achieve its connectivity goals. CentraComm has worked closely with many businesses and schools on leading-edge network and security solutions. With strong expertise and knowledge in networking, as well as a history of working with educational institutions, CentraComm led the evaluation of potential solutions and conducted a proof-of-concept test for the new network at Oberlin.

Oberlin's network administration team also sought recommendations and references from colleagues and peers who had experience working with different networking solutions. "Hearing personal recommendations led me to agreeing to the Juniper proof-of-concept," says Hulver. "Once we saw the Juniper proof-of-concept and our research and references checked out, we knew Juniper would be the best choice for us."

"Great structures begin with a thoughtful set of blueprints, and we worked closely with Oberlin to build the right plan for the college. With Juniper Networks EX Series Ethernet Switches, Oberlin has a high-performance, scalable network that will support its students' creative and scientific efforts for years to come."

Mike Benda, Solutions Designer, CentraComm

Technology Solution

CentraComm designed, built, and supports the network at Oberlin. "Great structures begin with a thoughtful set of blueprints, and we worked closely with Oberlin to build the right plan for the college," says Mike Benda, solution designer at CentraComm. "With Juniper Networks EX Series Ethernet Switches, Oberlin has a high-performance, scalable network that will support its students' creative and scientific efforts for years to come."

At the core of the network is the Juniper Networks® EX4600 Ethernet Switch, a compact, highly scalable, high-performance 10GbE switch. With the EX4600, Oberlin is assured of deployment flexibility and high availability using unified in-service software upgrades. Redundancy and load balancing are provided through multichassis link aggregation groups (MC-LAGs). Oberlin uses the Juniper Networks EX4550 Ethernet Switch for data center aggregation. The 10GbE switch supports Layer 3 dynamic routing protocols, MPLS services such as Layer 2 and Layer 3 VPNs, MACsec on all ports, and comprehensive quality of service (QoS).

The Juniper Networks EX3300 Ethernet Switch provides flexible, cost-effective access for Oberlin's edge network, while the Juniper Networks EX2200 Ethernet Switch is used in wiring closets and

classrooms. Both EX3300 and EX2200 support Power over Ethernet (PoE+), making it easier to connect and power wireless access points, IP phones, and video surveillance cameras. Virtual Chassis technology enables multiple interconnected EX Series switches to operate as a single device, which reduces operational expense and management complexity.

Juniper's Virtual Chassis technology on the EX Series switches makes Oberlin's campus network simpler, more reliable, and easier to manage and maintain. With Virtual Chassis technology, multiple interconnected switches operate and are managed as a single, logical, high-bandwidth device. Without the operational overhead of managing multiple, independent switches, the network scales more easily. Virtual Chassis technology combines the flexibility of stackable switches with the reliability and performance of chassis switches.

Business Results

With Juniper's high-performance campus network solutions and CentraComm's expertise, Oberlin has achieved its goal of supporting more digital content and more mobile devices. The network bottlenecks are gone, and the college has plenty of room to grow as students and professors use more interactive content and Wi-Fi devices.

"Oberlin has a high-performance, scalable network that will support its students' creative and scientific efforts for years to come," says Hulver.

The simplicity and innovation of Juniper Networks® Junos® operating system has been instrumental in simplifying network operations at Oberlin. Junos OS is a reliable, high-performance network operating system for routing, switching, and security. Running Junos OS in a network improves the reliability, performance, and security of existing applications. It also automates network operations on a streamlined system, allowing network administrators to focus their time on deploying new applications and services, rather than network maintenance.

"Other companies don't have anything like Junos OS. We especially like its change management that allows us to roll back to a previous configuration," says Hulver. "Junos OS has a commit-confirmed feature that lets the administrator test the new configuration. If the device doesn't operate correctly, the operating system will roll back to the previous configuration. From an administration standpoint, that is a really nice benefit."

The network's success has cemented CentraComm's reputation at Oberlin. "Working with CentraComm is really valuable to us. Having reliable professional services helped us transition to a new, better network," says Hulver. "Everybody in our group is highly trained and knowledgeable, but it's nice to know that we can always call CentraComm to help us solve any problems that come up."

Next Steps

Oberlin's new network gives the college the performance and capacity it needs to handle students' mobile and online lifestyles, and the college knows it has a strong partner in CentraComm as technology continues to transform higher education.

For More Information

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

About CentraComm

CentraComm is an industry leading managed IT service provider. Formed in 2001, it leverages its history and experience as an Internet Service Provider (ISP) to provide cutting edge security and networking products and services to its customers. Headquartered in Ohio, CentraComm serves Fortune 50 to mid-market organizations throughout North America and manages networks around the globe. CentraComm has built its reputation

by offering security/routing/switching expertise, experienced engineers, unmatched customer service, best-of-breed products, and a deep history of cloud-based services. CentraComm's security offerings are enhanced by the ability to leverage our carrier class data centers including a nuclear hardened, former defense department facility. The company has a strong presence in healthcare, service provider, financial, energy, education, and manufacturing industry verticals. CentraComm has also been named to the CRN Fast Growth 100 list and Inc. Magazine's top 5,000 for seven years.

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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