

PIMA COMMUNITY COLLEGE MEETS GROWING DEMAND FOR EDUCATION AND WORKFORCE TRAINING WITH NEW JUNIPER-BASED ENTERPRISE NETWORK

Summary

Industry: Higher Education

Challenges: Build a new data center network to support a 20 percent growth in student enrollment and increased demands for applications, storage, and content

Selection Criteria: High performance, reliability, and operational ease

Network Solutions:

Juniper Networks EX Series Ethernet Switches

Results:

- Easily met demands for server virtualization, expanding storage requirements and video
- Provided a single platform to manage both routers and switches across data center and campus
- Reduced power consumption for a greener network

In difficult economic times, many people turn to their local community colleges for an affordable education to gain new skills and pursue new careers. Pima Community College is no exception; enrollment at the Tucson, Arizona-area school increased 20 percent last year to 71,000 students, making it the sixth largest multicampus community college in the United States. Pima Community College offers a broad range of academic programs, including business, health, social services, information technology, and protective services, and it also provides customized workforce training programs for employers.

Challenges

The growing student enrollment at Pima Community College’s seven campuses was pushing demand for IT services to new heights. An explosion of video and multimedia content, as well as expanding storage requirements, was pushing the data center to its limits. Performance problems were most visible between the servers and storage systems. “We had grown so fast over the last several years that we outstripped the switch port count by 4X in the data center,” said Scott Ferguson, director of networking services at Pima.

The college’s administrative staff got tired of waiting for the network to get better and decided to make a change. Its new data center design called for server virtualization and all new servers, switches, power, cabling, and cabinetry. Increasing network capacity from 1 Gbps to 10 Gbps would allow the college to support its business and technical requirements in the immediate term and into the future.

Selection Criteria

For the new data center network, Pima Community College wanted high-performance switches that would be highly reliable, support high port densities, and would be easy to manage. Pima had used a Juniper Networks® J Series Services Routers device for about a year as its Internet gateway, and when it began the selection process for the data center infrastructure, it became better acquainted with Juniper Networks’ enterprise solutions.

“We talked with Juniper, as well as other vendors, and the Juniper solution was head and shoulders above what we had seen,” said Ferguson. “The Juniper solution was architected to fit our network and it saved us time, energy, and money.”

Solution

Pima Community College deployed Juniper Networks EX Series Ethernet Switches in its data center and campus networks. In the data center core, the college is using the Juniper Networks EX8200 line of Ethernet switches, which offers flexible, modular platforms that deliver the port densities, scalability, and high availability required in demanding data center and campus core environments.

The college uses the Juniper Networks EX4200 Ethernet Switch with Virtual Chassis technology as top-of-rack switches in the data center as well as in its campus locations. EX4200 switches provide the availability and reliability of modular systems with the economics and flexibility of stackable switches, delivering a high-performance, scalable solution for data center and campus environments.

The Juniper solutions all run the same Juniper Networks Junos® operating system, a reliable, high-performance network OS for routing, switching, and security. Having one operating system reduces the time and effort required to plan, deploy, and operate network infrastructure; the modular Junos OS follows a single release track, providing stable delivery of new functionality while helping IT keep up with changing needs.

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Scott Ferguson, Director of Networking Services
Pima Community College

Results

With its new network, Pima Community College can easily meet the increasing demands for applications and users, not only with today’s influx of video but also tomorrow’s unknowns. The new network is more flexible, greener, and more operationally efficient than its predecessor.

“We have plenty of performance headroom,” said Ferguson. “Because of the new network, we could take advantage of the latest server technology and solved the performance issues we were experiencing between the servers, storage, and the rest of our network.”

“The biggest advantage in the data center is the ease and flexibility of configuration,” continued Ferguson. Whereas in the past Pima Community College had maxed out its data center capacity, it can easily add capacity as needed with Juniper’s Virtual Chassis technology, which allows up to 10 interconnected EX4200 switches to operate as a single, logical device. “With the EX4200 line, it’s very easy to add another switch if we need more ports,” he said. The Virtual Chassis technology also provided the college with other benefits; for instance, the ability to use EX4200 devices as top-of-rack switches allowed the college to reduce the amount of cabling in the data center.

The power efficiency of the EX Series switches was also important, especially in Tucson’s climate. “Anything we can do to reduce the amount of power we consume not only allows our air conditioners to work better but it also enables us to do the right thing from the college’s viewpoint,” said Ferguson. He noted that the dual power supplies in the EX4200 switches also meant that the college didn’t need to buy external redundant power supplies, which added to the savings.

Like most organizations today, operational efficiency is critical. “We have a lean staff and we need to manage as best we can,” said Ferguson. “Training our staff to manage routers and switches using a single platform was easier than having to learn and use multiple different platforms.”

Running Junos OS in the network improves the reliability, performance, and security of existing applications. Because the IT staff can automate network operations on a streamlined system, it frees up time to focus on deploying new applications and services.

IT staff members at Pima are particularly pleased with the Junos OS feature that allows them to rollback changes—a feature it did not have on its previous vendor’s switches. “We can make changes to the switch configuration and save it for another time, which means we haven’t done anything until we commit it,” Ferguson said. “We could never do that in our old environment because we had to make changes at the command line.”

Although Pima had a Juniper router at the Internet gateway, the staff needed to acclimate to Junos OS in the data center. Ferguson and his team immersed themselves with Juniper training, books, and boot camp. “Like with anything new we had some growing pains, but the benefits we receive from Junos OS outweighed any drawbacks,” said Ferguson.

As an added benefit, the college was able to leverage its relationship with Qwest, which is an Arizona state-approved vendor for WAN and Internet connectivity and IT equipment. “Not only was it the right decision to purchase the Juniper equipment, but we were able to work with our same Qwest sales team and our same Juniper sales team,” said Ferguson. “That was the icing on the cake.”

Next Steps Lessons Learned

Pima is continuing to roll out EX Series switches across its seven campus locations. “Our life will be a whole lot easier,” said Ferguson. “It’s much easier to manage all of the routers and switches with a single platform.”

For More Information

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

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.

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3520320-001-EN June 2010

 Printed on recycled paper