

Missoula County Sets Goals for High-Achieving Public Schools with a Rock-Solid Network Foundation

Summary

Company:

Missoula County Public Schools

Industry:

Education

Business Challenge:

Transform legacy network to a technology-rich learning environment to help all students achieve more, regardless of circumstances or abilities

Technology Solution:

- EX3300 and EX4300 Ethernet Switches
- Juniper Care Core and Juniper Care Core Plus

Business Results:

- Reduced traffic bottlenecks and future-proofed with 10GbE connectivity for all district buildings to support digital learning and online assessments
- Scaled district network to support heavy use of mobile devices in classrooms
- Provided foundation for a modern, more economical, scalable wide area network

Providing today's youth with the academic resources needed to thrive requires up-to-date IT infrastructure—something Montana's Missoula County Public Schools (MCPS) lacked. With digital learning plans hampered by legacy technology, inadequate broadband, and an industry-wide rise in security concerns, it was time for some big changes. MCPS serves 8,900 students through nine elementary schools, three middle schools, and five high schools.

Business Challenge

When Russ Hendrickson joined the district as senior systems information manager, a network refresh was top priority. "Our switches were 100 Mbps, and we had quite a few unmanaged switches. I had a mess," Hendrickson says.

The district had recently upgraded the classroom Wi-Fi networks. More tablets and laptops were being used in instructional learning, but that also meant that the bottlenecks on the wired network were getting worse. The growing use of mobile devices, including students' and teachers' personal devices, as well as academic plans to transition to online homework, meant the district needed to build a solid foundation to support its digital learning aspirations.

Missoula County Public Schools got a truly fresh start on its network. "We redesigned the entire IT infrastructure," Hendrickson says.

"We went through bid responses with a fine-tooth comb, and Juniper kept coming up on top from multiple perspectives—financially, long-term investment, speed, and support."

Russ Hendrickson, Senior Systems Information Manager, Missoula County Public Schools

Technology Solution

Hendrickson was determined to find a campus network solution that would not only meet MCPS's current needs, but also meet the growing requirements for digital learning moving forward. Switches that were high performance, secure, and flexible—and were affordable—were imperative. The district issued an RFP to completely overhaul the wired network.

MCPS had never done business with Juniper, but as the bids came in, the IT team was intrigued. "We went through the bid responses with a fine-tooth comb, and Juniper kept coming up on top from multiple perspectives—financially, long-term investment, speed,

and support," says Hendrickson. After a thorough evaluation, the district chose Juniper. "We did quite a bit of research. We talked to people who used it, and we felt good," Hendrickson says.

MCPS planned to fund the network upgrades through E-Rate as well as a local bond measure that would fund the renovation and construction of new schools to accommodate a growing student population. The district was so impressed by Juniper's value proposition, it decided to move forward immediately. "The value from Juniper was so good that we decided that regardless of those funding sources, we had to do something," says Hendrickson.

At the time, the district wasn't certain if the bond would pass—in which case new school buildings would be constructed and current ones renovated—so the IT team had to deal with significant ambiguity. "We knew what we wanted but didn't know what was possible," Hendrickson says. "The capabilities of the Juniper switches allowed us to be flexible."

"We started in 2010 to create a 21st century model of change. We are driving forward with our academic and staff initiatives. We are excited about our local partner, Access Consulting, and with Juniper, who support our strategic vision."

Hatton Littman, Director of Technology and Communications, Missoula County Public Schools

The network is designed to be flexible enough to support both current and future plans. Juniper Networks® EX4300 Ethernet Switch serves as the core and distribution switches, providing 10GbE connectivity. Juniper Networks EX3300 Ethernet Switch serves the access layers. Deploying a fully Layer 3 network with VLAN capabilities enables greater reliability, security, and scalability while also maximizing flexibility.

The IT team at MCPS appreciates the management ease of Juniper's Virtual Chassis technology, which allows multiple interconnected EX Series Ethernet Switches to behave as a single, logical device. This lowers operational expenses and simplifies management. "Virtual Chassis was a good fit, and we love it," Hendrickson says.

The district worked with Access Consulting, a Missoula-based solution provider with deep engineering and IT experience, to design and build the network. "Our experience working with Juniper and our local vendor, Access Consulting, has been outstanding," Hendrickson says.

Access Consulting has a long history in planning, designing, and building large-scale broadband, wireless, campus, and data center networks. "Juniper has great technology and great support," says Paul DeWolfe, president and founder of Access Consulting. "Both the business and the technical side of Juniper is outstanding."

Business Results

Public education institutions always need to give special consideration to what will give them the best value for their money, and Missoula County's schools are no exception. Fortunately, Juniper's value proposition was so good that the district was able to move forward immediately, and since the community passed the bond, more changes are coming. Having the right network capacity and resiliency in place is allowing the technologists to focus more on forward-thinking educational technology and less on maintaining an aging network.

"We started in 2010 to create a 21st century model of change," says Hatton Littman, director of technology and communications at MCPS. "We are driving forward with our academic and staff initiatives. We are excited about our local partner, Access Consulting, and Juniper, who support our strategic vision."

Thanks to the bond, which passed in 2015, the effort to modernize the school's facilities now has \$158 million dollars to support it. Every school in the district is undergoing renovations and two new buildings will be constructed. Classrooms, which only had one network connection, will now have at least six to better support wireless access points and other Internet-connected devices. And that will create new opportunities to access digital learning and content.

MCPS is working with Juniper in innovative ways beyond infrastructure, too. MCPS created a pilot program of the highly successful Juniper Network's Academic Alliance for high school students, which teaches networking skills as part of a STEM curriculum. The class is aimed at ensuring kids come out of high school with more advanced technology experience, and offers a springboard into the established college-based Juniper Academic Alliance program. MCPS will implement the course in one high school as part of a computer science strand in a STEAM Academy that focuses on key career development skills.

Next Steps

As MCPS completes the campus network refresh across its schools, it has turned its attention to its WAN that connects its schools, data center, and the Internet. In March 2016, MCPS approved the construction of a district-owned fiber network, which is expected to connect each school and eliminate slow download speeds in classrooms, as well as improving streaming video, conference calls, and digital textbook downloads. After the E-Rate subsidy, MCPS will pay about \$1.5 million over 20 years. That's about the same cost that the district would pay in five years for a service provider, according to Littman.

Owning its own fiber network gives the district a lot more flexibility and room for growth. "What's really exciting with the Juniper infrastructure that we have in place now is that it really enables the district to take full advantage of E-Rate Category One rules to build its own fiber network as a more scalable and economical solution," DeWolfe says.

For More Information

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

About Juniper Networks

Juniper Networks challenges the status quo with products, solutions and services that transform the economics of networking. Our team co-innovates with customers and partners to deliver automated, scalable and secure networks with agility, performance and value. Additional information can be found at Juniper Networks or connect with Juniper on [Twitter](#) and [Facebook](#).

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