

# Springfield Public Schools Pave the Way for Digital Learning with High-Performance Network

## Summary

### Organization:

Springfield Public Schools (SPS)

### Industry:

Education

### Business Challenge:

Build cutting-edge wired and wireless network to support digital learning needs today and in the future

### Technology Solution:

- EX9208, EX4550, and EX3300 Ethernet Switches
- WLC2800 Wireless LAN Controllers and WLA532 Wireless LAN Access Points
- Junos Space Network Director

### Business Results:

- Enabled 1:1 computing in classrooms with high-capacity Wi-Fi
- Supported digital learning with high-performance wired network
- Future-proofed the network for 5-7 years
- Simplified network management from data center to campus, both wired and wireless

Springfield Public School (SPS) system is the largest fully accredited school district in Missouri, educating more than 24,000 students per year.<sup>1</sup> To maintain a high-quality, personalized learning environment, SPS recently invested \$156 million to improve educational facilities through renovation and new school construction.<sup>2</sup> SPS also invests in its people by hiring and retaining highly qualified teachers. The payback is clear: SPS high school seniors consistently score above state and national averages on the ACT.<sup>3</sup>

## Business Challenge

With a strong focus on academic excellence and a recognition of the correlation between educational technology and students' ability to learn successfully, SPS uses the latest digital learning methods for its students and teachers. But the district's goals were being held back by scattered and unreliable wireless connectivity that didn't support the students' ability to use mobile devices and other digital learning tools in the classroom. The spotty wireless, along with an aging network infrastructure, prevented SPS from providing consistent and secure connectivity to students and teachers.

SPS needed to increase the wired network capacity and Wi-Fi access in every classroom. Springfield issued a bond and levy to fund upgrades to the district's network to provide increased wireless access and bandwidth for every classroom across all 50 high schools, middle schools, elementary schools, and alternative schools.<sup>4</sup>

"With the support of the voters, we have been able to move away from a network that is like driving on a gravel road or two-lane highway to build a network that meets the demands of our 21st century learners," says Rick Green, director of IT, Springfield Public Schools.

## Technology Solution

SPS chose Juniper Networks switching solutions for its data center and school sites as well as for Wi-Fi access. "The performance of the network is superb," says Green. "We're very pleased with the scalability, reliability, and forward-looking capabilities of the Juniper products."

The data center network is made up of Juniper Networks® EX9208 Ethernet Switch in the core and Juniper Networks EX4550 Ethernet Switch for aggregation. The EX4550 switches deliver economical, high-performance, power-efficient 10GbE connectivity to support digital learning applications and online assessments as well as administrative applications.

<sup>1</sup> About SPS: Springfield Public Schools, <http://www.springfieldpublicschools.org/pages/SPSMO/About/AboutSPS>

<sup>2</sup> About SPS: Springfield Public Schools, <http://www.springfieldpublicschools.org/pages/SPSMO/About/AboutSPS>

<sup>3</sup> About SPS: Springfield Public Schools, <http://www.springfieldpublicschools.org/pages/SPSMO/About/AboutSPS>

<sup>4</sup> About SPS: Springfield Public Schools, <http://www.springfieldpublicschools.org/pages/SPSMO/About/AboutSPS>

The EX9200 line of programmable Ethernet switches simplifies the deployment of cloud applications, server virtualization, and rich media collaboration tools for the district's IT staff. Fully configured, the eight-slot EX9208 modular chassis supports up to 4.8 Tbps of throughput, delivering plenty of network power no matter how digital learning evolves.

*"The performance of the network is superb. We're very pleased with the scalability, reliability, and forward-looking capabilities of the Juniper products."*

**Rick Green**, Director of IT, Springfield Public Schools

EX3300 switches were deployed in Virtual Chassis configurations at the school sites and administrative offices, where they provide flexible, cost-effective access to support converged data, voice, and video. Support for Power over Ethernet (PoE) also simplifies connecting and powering wireless access points and IP phones.

Juniper's Virtual Chassis technology enables multiple interconnected EX Series Ethernet Switches to operate as a single device, reducing operational and capital expenses for the district while simplifying management for the IT staff. "With Juniper EX Series switches, we can have a very modular design, which simplifies the network," says Dustin Coy, network administrator at Springfield Public Schools. "Every wiring closet has its own Virtual Chassis configuration, which is a huge advantage for management."

The Wi-Fi is speedy and reliable, even in classrooms filled with tablets, laptops, and other Wi-Fi devices, providing smooth access to web-based applications and online assessments. "We pushed the boundaries in our testing, and we found that a single classroom access point could support up to 72 devices," says Green.

Juniper Networks WLC Series Wireless LAN Controllers and WLA Series Wireless LAN Access Points provide the Wi-Fi. SPS uses the WLC2800 Wireless LAN Controller to deliver and manage its WLAN with robust reliability, performance, security, and management. The WLC2800 also integrates the wireless LAN with the wired network. WLA532 access points provide indoor and outdoor Wi-Fi access to students and teachers.

The IT team also uses Juniper Networks Junos® Space Network Director to visualize, analyze, and control the entire network from data center to campus, including both wired and wireless, from a single pane of glass.

<sup>5</sup>"Springfield Public Schools Digital Learning Network Project," JMA IT and Juniper Networks presentation at CoSN, Nov. 6, 2014.

## Business Results

The taxpayers of Springfield can feel confident that students are excelling with a rigorous curriculum that is focused on critical thinking, collaboration, and communication. The district uses a variety of tools, including Canvas learning management system, Aleks, iReady, and Pearson VUE for assessment, GoogleDocs, SharePoint, and many other applications. With access to 21st century digital learning tools and methods, students are more engaged and are better prepared for college and careers.

The network upgrade moved smoothly under a very aggressive project timeline. Sixty buildings were rewired and upgraded over 16 months without any disruption to classes or school operations during the day.<sup>5</sup> The new network will support the district's network needs for the next five to seven years, even as the district expands its 1:1 computing program with mobile devices for all students, and continues to embrace interactive media and online assessments. SPS can deliver secure wireless connectivity to classrooms and other areas without having to worry about implementing updates or adding gear in the near future.

## Next Steps

Teachers at SPS can focus on teaching while easily personalizing lessons to students' different learning styles, knowing that the network infrastructure will be there to underpin the ever evolving and expanding digital curriculum. With a Juniper infrastructure from data center to classroom, SPS can be confident that the network will continue to meet its needs even as new educational technologies emerge.

## For More Information

To find out more about Juniper Networks products and solutions, please visit [www.juniper.net](http://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](http://www.juniper.net).

Corporate and Sales Headquarters  
Juniper Networks, Inc.  
1133 Innovation Way  
Sunnyvale, CA 94089 USA  
Phone: 888.JUNIPER (888.586.4737)  
or +1.408.745.2000  
Fax: +1.408.745.2100  
[www.juniper.net](http://www.juniper.net)

APAC and EMEA Headquarters  
Juniper Networks International B.V.  
Boeing Avenue 240  
1119 PZ Schiphol-Rijk  
Amsterdam, The Netherlands  
Phone: +31.0.207.125.700  
Fax: +31.0.207.125.701

Copyright 2014 Juniper Networks, Inc. All rights reserved. Juniper Networks, the Juniper Networks logo, Junos and QFabric are registered trademarks of Juniper Networks, Inc. in the United States and other countries. All other trademarks, service marks, registered marks, or registered service marks are the property of their respective owners. Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.