MOVE TO THE FRONT OF THE CLASS WITH JUNIPER NETWORKS CLOUD-MANAGED SOLUTION

Cloud-based switching, security, and wireless solution provides a simple yet powerful digital learning platform

Challenge

While school networks today are central enablers for the digital curriculum, complex operational workflows, tight budgets, and a lack of resources mean network administrators are struggling to keep the systems running and mitigate the impact of network outages.

Solution

Juniper's enterprise-class EX Series Ethernet Switches, SRX Series Services Gateways, and Juniper Sky Enterprise cloud-based management, combined with Mist WLAN solutions, create scalable, secure, reliable networks that are easy to manage and cost-effective to operate.

Benefits

- Delivers a scalable, secure, digital learning-ready network with enterprise-class switching, security, and wireless infrastructure
- Reduces reliance on skilled, hard to get resources with a simplified, centralized management environment
- Eliminates need for expensive truck rolls via remote administration
- Supports easy additions, moves, and changes
- Reduces operational costs and improves service

Over the last decade, K-12 school districts have had to adapt and adjust to help students improve their academic outcomes. Providing an effective and efficient digital learning environment has played a significant role in that effort, leading to greater technology integration while putting greater pressure on district networks to be up to the task. Scaling up broadband connections, however, increases operational complexity and exposes serious security gaps in campus, wide-area, and data center networks. Operating in silos and struggling to keep pace with the multitude of bolt-on security, load balancing, and content filter appliances, these networks introduce their own unique operational workflows that place additional burdens on already overworked IT teams.

The Challenge

School districts are taking the digital leap and their networks are central enablers for the digital curriculum. This move is leading to exponential growth in broadband demand, expanding cybersecurity concerns, and greater integration of instructional technologies—all of which are straining district IT teams.

With many districts facing tight IT budgets and a lack of resources, existing technology teams are having a hard time just keeping up, let alone finding time to be proactive or address new initiatives. Furthermore, few IT staff members hold networking vendor certifications; most are generalists responsible for managing a broad range of technologies. As a result, current network management tools and operational workflows are ill-suited to meet the demands of the emerging district IT workforce.

Secure, Automated Networks for K-12

Juniper Networks offers a superior network infrastructure that helps school districts respond to these challenges. Leveraging the latest innovations in secure, automated enterprise-class networks, and integrating leading IEEE 802.11 access points to serve growing numbers of mobile learning devices, the Juniper solution provides advanced network security and a cloud-based network management service ideally suited for K-12. This solution helps network managers and administrators experience highly effective yet simple workflows, maintain digital learning by rapidly responding to network and security issues, empower IT staff to be more effective network administrators, and lower overall operational complexity—all while reducing service-impacting human errors.

Features and Benefits

Juniper's secure, automated networks for K-12 feature cloud-based managed switching, security, and wireless solutions that provide the foundation for simple yet powerful enterprise-class networks that are ready for digital learning. With these Juniper solutions, schools realize the following features and benefits:

- Enterprise-class multigigabit access switches with Power over Ethernet (PoE) capabilities from Juniper, complemented by next-generation 802.11 access points from Mist, a leader in artificial intelligence (AI)-driven wireless networking

- End-to-end enterprise-grade security

- Unified, single-pane-of-glass wired and wireless cloud-based management with Juniper Sky™ Enterprise

- Simple, centralized management that reduces reliance on skilled resources, which are hard to find and retain

- Faster and easier network moves, additions, changes, and deletions

- Remote administration and zero-touch provisioning (ZTP) that eliminate the need for expensive truck rolls—and it's all managed from anywhere using just a browser

- A centralized knowledge base of all network devices that includes configuration backup and change audit information

- Lower operational costs and better service

- Detailed security configuration, management, and reporting

Solution Components

The solution is built with Juniper Networks enterprise-class switching and security infrastructure, Mist Learning Wireless LAN, and Juniper Sky Enterprise, a simple and easy-to-use cloud-based network management service (See Table 1).
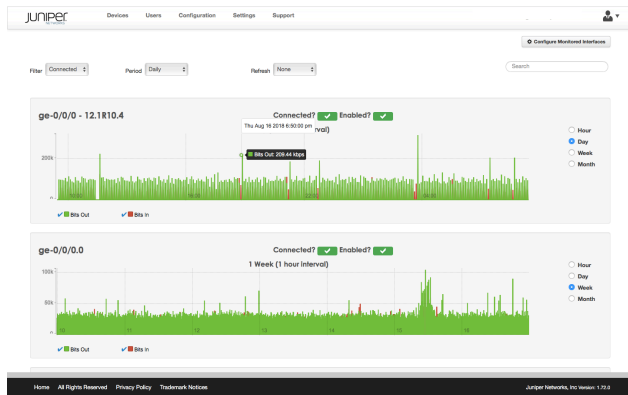
Table 1: Solution Building Blocks

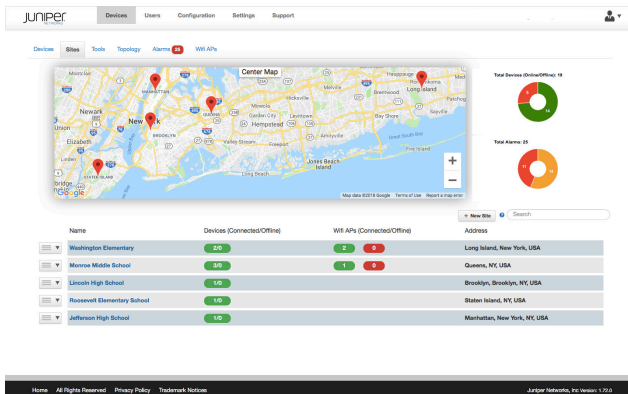| Enterprise-Class Access, Aggregation, and Core Switches	Enterprise-Class Next-Generation Firewalls	Enterprise-Class AI-Driven Wireless LAN	Cloud-Based Network Management
Juniper Networks® EX Series Ethernet Switches, including special models for K-12 applications, are designed for the converged school district campus and data center, addressing demands for high availability, unified communications, and virtualization. These high-performance, scalable, fixed-configuration 1GbE and multigigabit platforms include the EX2300, EX3400, and EX4300 Ethernet Switch models. Fixed-configuration 10GbE aggregation switches, including the EX4300 and EX4600 Ethernet Switches, are ideal for high-density campus deployments, while the modular EX9200 line of core switches is optimized for high-density, mission-critical applications.	Juniper Networks SRX Series Services Gateways are rightsized for a variety of district applications. Offering a complete set of next-generation firewall (NGFW) and unified threat management (UTM) features, the SRX Series physical and virtual firewalls protect district networks from the latest content-borne threats. These firewalls also support the Children's Internet Protection Act (CIPA) and the Family Educational Rights and Privacy Act (FERPA), contributing to ensuring district-wide compliance.	Designed for the demands of digital learning, Mist WLAN makes Wi-Fi predictable, reliable, and measurable by providing unprecedented visibility into the user experience. Enterprise-grade Wi-Fi, Bluetooth Low Energy (BLE), and IoT are merged, creating personalized, location-based wireless services for the best end-user experience. With Mist, customizing Wi-Fi service levels, providing easy guest services, replacing time-consuming manual IT tasks with proactive automation, gaining insights through detail analytics, and leveraging location-based services to locate valuable assets are now within reach.	Juniper Sky Enterprise provides easy, cloud-based management to reduce costs and simplify Juniper switching, Juniper security, and Mist WLAN deployments. Juniper Sky Enterprise eases network administration by eliminating software maintenance cycles and dedicated network management infrastructure. A centralized, user-friendly portal makes Juniper Sky Enterprise the ideal solution for IT teams of all sizes and experience levels, keeping networks up and running with minimal effort and cost.

Simpler, Easier, Cloud-Based Network Management

Simple and centralized network management is central to providing school districts with a scalable, secure, and reliable network to support digital learning. With Juniper Sky Enterprise, school district network administrators get:

- **Cloud-based management for complete visibility and control:** Juniper Sky Enterprise is a cloud-based network management platform delivered in a Software as a Service (SaaS) model, so there is nothing for school districts to install or maintain. Juniper Sky Enterprise provides centralized visibility and control, including security management and reporting, helping you keep your network available and secure in support of the digital curriculum. Working with the simple, secure Mist Cloud API, Juniper Sky Enterprise provides visibility into your Mist wireless access points, as well as into districts using Aerohive wireless access points.
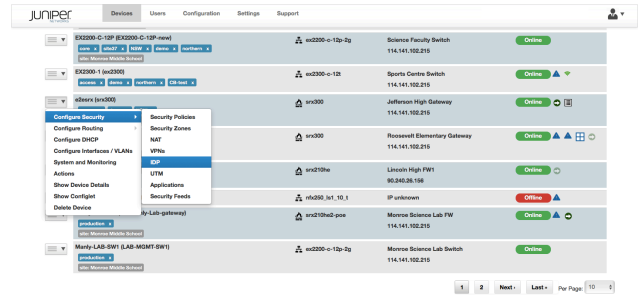

- **Easy deployment and management of remote sites:** Juniper Sky Enterprise can manage the network from anywhere using just a browser, letting you perform remote management with the ability to respond quickly and effectively. Zero-touch provisioning (ZTP) enables remote deployment without the need for local technical staff, while simple one-page workflows make changes simpler and faster—without the threat of human error. Your district IT staff members don't have to be highly specialized network engineers— Juniper Sky Enterprise empowers all IT staff to perform day-to-day management functions using simple workflows.

- **Multitenancy for federated management and control:** Multitenancy support lets you manage multiple schools as tenants and share appropriate management access with IT staff in remote locations—all while maintaining overall control.

  And with Juniper Sky Enterprise, network management can be shared across teams and locations, freeing up skilled resources to work on higher value tasks.

- **Simple web-based UI, with CLI available if you need it:** Juniper Sky Enterprise offers the best of both worlds, giving you the option of using a command line interface (CLI) if you prefer. Skilled Juniper Networks Junos® operating system engineers can accomplish amazing things from the command line, using their experience and the power of Junos OS.
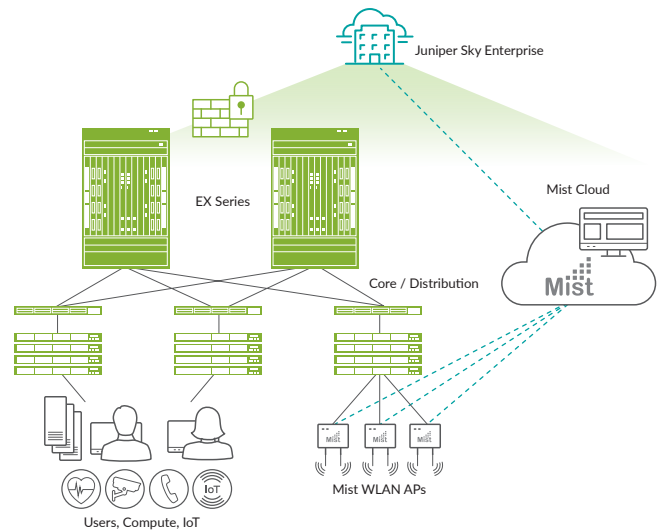

Figure 1: The Juniper Networks cloud-managed solution.

Summary—Prepare for the Digital Leap with Juniper

For K-12 school districts, the digital leap not only brings greater technology integration, it also introduces more complexity into the network. It's no different for district network modernization projects built on traditional architectures where updates and changes further tax an already overburdened IT staff struggling to keep up with what it already has to manage.

These districts have a better way forward: cloud-based managed switching, security, and wireless networking solutions from Juniper. The Juniper portfolio delivers a simple yet powerful enterprise-class switching and security network infrastructure that is up to the task, combining advanced, secure, automated networking solutions with Mist AI-driven WLAN and Juniper Sky Enterprise cloud-based network management.

Let Juniper help your district move to the front of the class and combat the war on complexity. With our digital learning-ready network solution, your district will get the scale, performance, security, and agility needed to connect digital traffic to and from the classroom, study areas, school buildings, cloud-based applications, and the Internet.

Next Steps

Juniper Networks has a rich history of helping education create connected learning environments to ensure high-level learning and student success. If you are in need of a network to support your digital leap, contact your Juniper Networks account executive or your authorized Juniper Networks partner. To learn more about Juniper solutions for K-12, as well as Juniper Sky Enterprise, visit **www.juniper. net/K-12/** and **www.juniper.net/us/en/products-services/network-management/sky-enterprise/** respectively.

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.

JUNIPER NETWORKS | Engineering Simplicity

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