



# Top 3 Ways to Modernize Your School District Network

*This is a critical time for IT decision-makers. As your organization moves to cloud-driven digital learning models, you must decide upon the right technologies and partners to make the transition smoothly and successfully. Making sound decisions is particularly important when it comes to your school networks, which provide the access needed by your students and teachers and deliver a satisfactory digital learning experience. This article examines the most important considerations in deciding upon a vendor to help you modernize and secure your school district network to facilitate a successful transition to a cloud-enabled digital curriculum.*

The accelerated adoption of cloud computing models is causing a fundamental transformation in how organizations do business. Nearly 75% of companies expect to put a majority of their workloads in the cloud by 2017, according to research from Verizon.<sup>1</sup> IDC predicts that the number of new cloud-based solutions will triple over the next four to five years, describing cloud computing as “impacting all areas of IT supply, composition and consumption.”<sup>2</sup>

The fundamental shift to cloud models is placing more importance than ever on the network infrastructure supporting school districts. These networks serve as the on-ramps to the cloud and are the means by which teachers and students access their critical applications and digital content. With many organizations adopting multiple cloud models—private, hybrid and public—the IT organization must provide teachers, students and staff with secure and reliable access no matter where they are located and no matter where their applications reside.

**In order to modernize your school district network, you need to adopt a simplified architecture that enables an agile network.**

This is easier said than done. Many district campus networks are built on proprietary platforms with several layers of switches and virtual LANs, as well as multiple management points and myriad security products. This approach will no longer suffice. In order to support the transition to a cloud-enabled school district, campus networks must be modernized so that they are simple to deploy and manage, highly secure and built on an open framework for maximum agility and scalability.

This article examines the three important factors you should consider in deciding upon the right vendor to help you modernize your school district network infrastructure. We also look at some of the innovative solutions that are available today

and contrast the approaches of some of the leading network and security suppliers.

## Consideration No. 1: Simplify the Network

Today’s typical school district network is a spider’s web of complexity. Complexity not only makes these networks brittle and difficult to scale, but it also means that managing them requires many manual processes across a variety of management platforms. It can be a nightmare for your organization’s network administrators—any change to the network can break something or open a security gap, making it exceedingly difficult to rapidly deploy and troubleshoot applications.

In order to modernize your school district network and the connected schools, you need to adopt a simplified architecture that enables an agile network. This starts with collapsing the core, distribution and access layers into a single logical platform that can be managed from a central location. You want all of your access switches to look like extension ports of the core switch so that you can manage the entire network as a single logical switch.

With a centralized, simple-to-manage platform, you can expand access port functionality, protect the edge via the cloud and centralize configuration, provisioning, management, policy and visibility. The benefits of this model are significant. A collapsed network architecture for your entire district is easier to manage and scale, helping to reduce operational costs and improve time to value for critical digital learning and online assessment applications. In addition, when combined with the ability to centrally enforce policy anywhere in the network, you can dramatically improve security.

The leading example of this type of simplified and agile architecture is Juniper’s Junos Fusion Enterprise, which works across any deployment model: physical or virtual; private or public cloud; or traditional IT. Juniper is the only vendor in the industry that provides this level of functionality in software and in an open framework. By comparison, Cisco has a somewhat comparable solution, but it is proprietary and requires specific

1 [“State of the Market: Enterprise Cloud 2014,”](#) Verizon

2 [“Public Cloud Computing to Reach Nearly \\$70 Billion in 2015 Worldwide, According to IDC,”](#) IDC, July 21, 2015

hardware that must be purchased separately in order to be implemented. HP, another leading competitor, does not offer a comparable solution at all.

## Consideration No. 2: Secure the Network

In the cloud-enabled school district, network security and data privacy is a make-it-or-break-it proposition. Not only are your mission-critical applications all running on the network to and from the cloud, you also have many more potential points where things can go wrong. In the past, security was only required at the edge of your network. In the cloud-enabled school district, however, security is no longer just an add-on to the network: It is integral to the network design. In other words, in order to secure the network, you have to understand it at every level and know where you may be vulnerable.

By centrally viewing and managing the network as a single logical switch, you can secure the network at any point and at any network layer. By contrast, in an overlay situation malware and bad actors can lurk in many layers and can't always be detected. In addition, network-wide visibility gives you the ability to proactively fix potential problems much faster and more efficiently than ever before.

For example, with a solution such as Juniper's Junos Fusion Enterprise with Junos Space Security Director, you can immediately segment out an intruder or bad actor by putting him into a quarantine area. The technology makes it much easier to utilize existing network capabilities rather than creating another layer, which adds complication. Juniper can provide visibility and centralized network policy control, utilizing policy engine and SDN controller functionality to stop threats faster and more effectively.

By contrast, security solutions from vendors such as Fortinet, Palo Alto Networks and Arista sit at the edge and are not wholly integrated into the entire network. They are not able to provide visibility across all levels of the network from the data center across the central district office and to the school locations. While Cisco does provide visibility across the entire network, in order to achieve those benefits you have to buy into the entire proprietary Cisco portfolio.

## Consideration No. 3: Adopt an Open Framework

In the cloud-enabled school district, everything is connected by the network. This means all of your teachers, students and staff and applications have to be well integrated for the district to run smoothly. It also means that you'll have traffic coming onto the network via the cloud from a wide variety of sources—not just from computers, tablets and smartphones, but also from IP surveillance and security systems, school buses, HVAC systems, digital signage and many other machines.

One vendor can't provide your advanced computer networks as well as your lighting fixtures, so you need to work with a vendor that utilizes a framework that enables all of your

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connected devices to work seamlessly on the network. You want to be able to choose best-of-breed solutions for each aspect of the network, whether it is for unified communications, WLAN, security or anything else. The open model will enable you to be much more agile in upgrading your capabilities as new technology becomes available. It also offers much simpler scalability when you need to expand the network for whatever reason.

It is important, therefore, to work with a vendor that supports an Open Convergence Framework, which provides the highest levels of integration with network partners. As a leading example, Junos offers an open standards implementation that supports open standards at every layer. It was built to be customizable and easily integrated into any existing network. Junos also utilizes application program interfaces (APIs) to support the highest levels of integration with Juniper's best-of-breed partners, such as Aerohive, Aruba and Ruckus for wireless

LANs. By contrast, when you choose Cisco you are locked in to Cisco solutions and have to buy Cisco-only products, no matter what they cost and no matter whether they are demonstrably inferior to competitive solutions.

## Taking the Next Step

With the shift to digital learning, the cloud-enabled school district is here to stay. IT is shifting to a more services-oriented

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model and the cloud—whether private, public or hybrid—is an enabler, making IT more agile, scalable and cost-efficient. However, in shifting to a cloud-enabled district, it is important for IT decision-makers to choose the right technology partner for the underlying district wide network. If your networks are not agile, open, simple to deploy and highly secure, you run the risk of limiting the value and effectiveness of your cloud investments.

Of all the network and security vendors in the market, Juniper has done the best job of structuring its product portfolio to meet the needs of the cloud-enabled school district. Juniper has created a simple and united architecture that provides visibility and centralized management across the entire network. This model offers the highest levels of operational efficiency, district-wide security and agility so you can deliver any application to any user from any cloud. In deciding which vendor can best address your network challenges of today, while providing the most viable and secure path to the cloud-enabled school district of the future, Juniper should be at the top of your list.

**For more information about Juniper's approach to delivering the cloud-enabled school district, please visit us at [www.juniper.net/unite](http://www.juniper.net/unite).**