

JUNIPER'S NEW NETWORK FOR EDUCATION

Radically Changing the Face of Networking for Educational Institutions

Challenge

Many educational institutions now view their network infrastructure as critical toward helping them perform daily operations. In the face of increasing user and application demands, legacy approaches to networking are proving unsustainable. They are too costly, too complex, and simply cannot scale.

Solution

Juniper's new network for education consists of innovations that enable critical education infrastructures to provide the extra capacity, security, and capabilities needed to meet the growing needs of educational organizations today and tomorrow, and at a significantly lower cost.

Benefits

- More powerful research and academic services across highly distributed IP wired and wireless networking environments
- Layered security to protect critical information and ensure uninterrupted operations
- Improved application performance within the data center and across the WAN
- Simplified network management and provisioning, and reduced operational complexity and costs

Academic researchers and educators increasingly rely on high-performance networks to support their use of leading-edge technologies that contribute to scientific and educational advancements. All of these organizations have come to expect nonstop support of their demanding applications from an infrastructure that provides them with optimum performance, end-to-end security, scalability, reliability, and advanced features. However, educational IT organizations are struggling to balance these needs for increased connectivity and bandwidth, stronger security, and higher reliability against the reality of reduced budgets.

While trying to keep up with these increased infrastructure demands, legacy approaches to networking are proving to be unsustainable for educational environments. They are too costly, too complex, and simply cannot scale. The ongoing introduction of new technologies like geographically dispersed classrooms, server and storage virtualization, online video editing, high bandwidth wireless connectivity, and data intensive collaboration with terabytes of data is severely straining existing education network infrastructures. As a result, all of these educational organizations are concerned about how to ensure that a solid, high-performance network infrastructure is in place to handle their critical communication and application needs in a cost-effective manner, now and into the future.

The Challenge

Research Networks

Network-enabled collaboration accelerates the pace of new discoveries and the expansion of human knowledge. Today's research networks are used for a diverse set of advanced applications, such as high-resolution medical imaging and advanced network technology research. To support the demanding needs of scientific researchers and academics, National Research and Education Networks (NRENs) are defining the cutting edge of scalable, high-performance networks. The open, dynamic nature of collaboration requires that these networks be standards-based and manageable, assure data integrity and privacy, quickly mitigate emergent threats, and provide high application availability.

Higher Education

Colleges and universities must provide ubiquitous and secure network infrastructures to service the exploding demand for wireless device access, provide for critical campus LANs, and build out virtualized data centers. Students, faculty and researchers, administrators, and even lifelong learners, now demand that their applications and devices run flawlessly anytime, anywhere. Educational networks are no longer mere plumbing—they are a mission critical component of the core academic business, and it is becoming harder and harder to manage them.

K-12 Schools

K-12 institutions need high-performance networks to improve collaboration among administration, faculty, staff, and students, and to support the deployment of new applications. There is a big shift toward web-based applications for a wide variety of educational applications. This includes everything from distribution of student classroom material to parents scheduling parent-teacher conferences online. The network is quickly becoming an important utility used by everyone on a daily basis.

The Juniper Networks New Network for Education Juniper's New Network for Education Is Here

Juniper's new network for education is here, radically changing the face of networking through innovation, simplification, open standards, and cost reduction to create a new type of education infrastructure. Juniper Networks enables universities, colleges, school districts, and research networks to fulfill their missions through fast, secure, wired, and wireless networks that provide essential networking in the data center, across campuses, and around the world.

Juniper's new network for education solution consists of groundbreaking ideas and innovation that enable critical education infrastructures to provide the extra capacity, security, and capabilities that are needed to meet the growing needs of all

institutions and organizations, but at a significantly lower cost base. This enables a fresh approach, which Juniper calls "the new network" for building network connections, data centers, office communications, and mobile working solutions across all areas of the education infrastructure.

Features and Benefits

Juniper's "new network" takes a fresh approach to the design of wired and wireless network architectures in data centers and across campuses. It simplifies the complexity of current networks, reduces the amount of equipment and cabling needed, and makes it easier to manage with less staff.

Juniper's own purpose-built custom silicon and Juniper Networks® Junos® operating system make education networks inherently more stable, secure, and resistant to cyber threats. Juniper has embedded security capabilities into the network fabric, reducing the requirement for additional layers of security appliances and allowing a tighter relationship between the network and security functions. Juniper has taken those disparate appliances and consolidated them into a single cluster of platforms, a virtualized pool of security services that can be applied to any flow in the data center. This allows a faster security response, while maximizing network service availability, reducing the operational resources needed to operate the network, and enhancing energy efficiency.

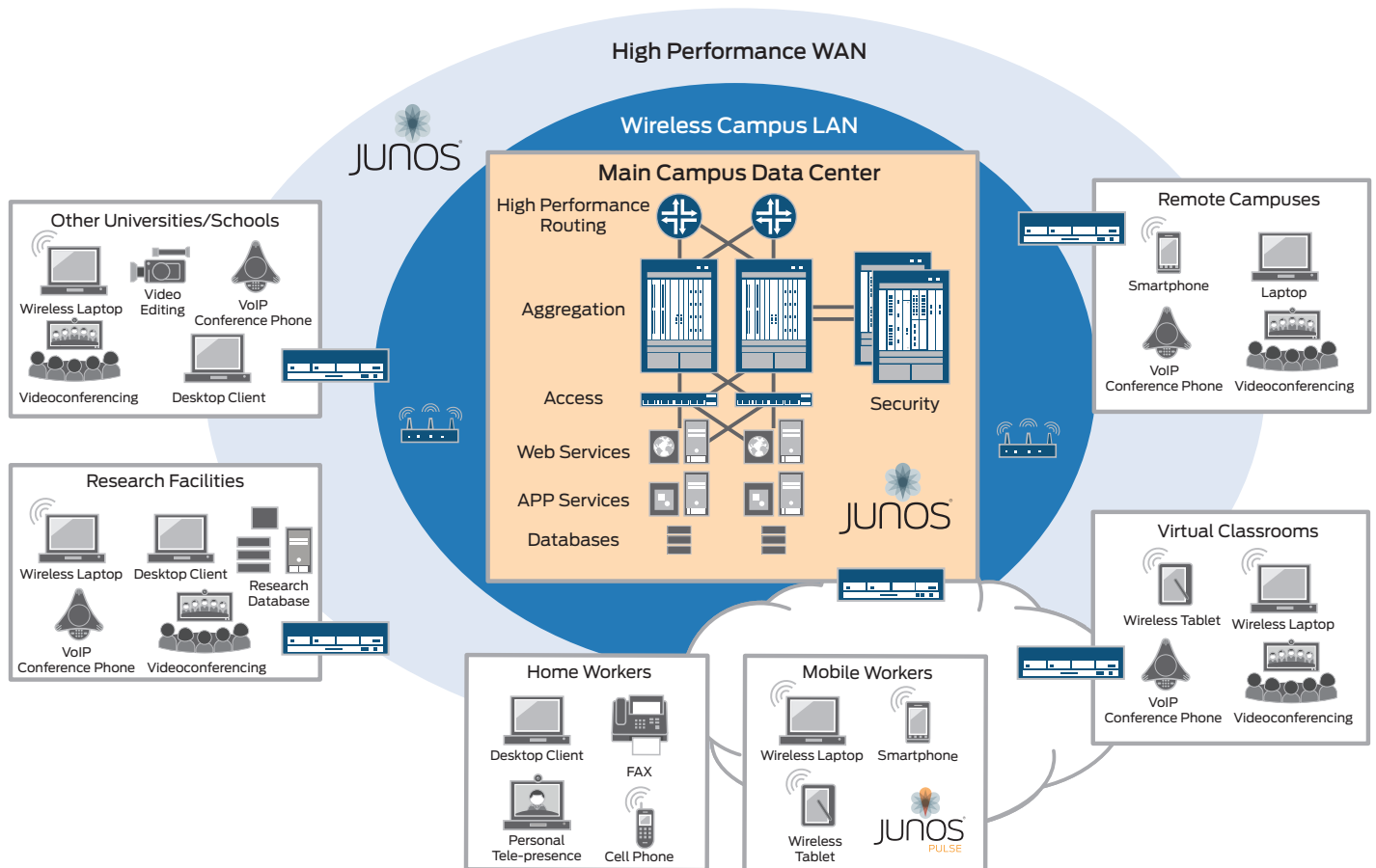


Figure 1: Juniper Networks new network for education solution

A commitment to the use of open standards is one of Juniper’s fundamental strategies for innovation. It allows different educational institution and department domains to connect and interoperate effectively, securely, and reliably and without being forced to adopt a “single vendor” strategy. Juniper’s innovation to create an open network means that education networks can be built to support an ecosystem of technology from the very best vendors in areas such as IP telephony, unified communications, servers, and storage—without compromise or lock-in.

The “new network” from Juniper Networks is a simple and secure network that is available all of the time; a network which is able to keep up with the ever growing demands of researchers, students, faculty, and administrators; a network which is an asset for real-time delivery of services, instead of a burden. Some of the benefits include:

- Consolidation and delivery of more powerful research and academic services and applications across highly distributed IP wired and wireless networking environments

- A layered security approach to protect critical information and ensure that there is no disruption of critical research or campus operations
- Improved application performance from within the data center and across the WAN
- Simplified management and provisioning across departments, organizations, and districts to reduce operational complexity and costs

Solution Components

At Juniper, we’ve developed some of the industry’s most groundbreaking, disruptive innovations across every aspect of networking technology. This includes a dedication to developing new, pure play IP solutions based on a unique single architecture, a single operating system, and a single software release train that ensures performance, reliability, and security at the scale that customers demand of their networks—without compromise.

Table 1: New Network for Education Solution Portfolio

PRODUCT CATEGORY	DESCRIPTION
Routing	Comprehensive, scalable, and secure routing solutions are specifically designed to meet the needs of demanding education organizations. All Juniper routers—core, multiservice edge, and carrier Ethernet—run on one common operating system, Junos OS.
Switching	Our Ethernet switching solutions improve the economics of networking by building carrier-class, high-density hardware that reduces operational and capital expenses for branch, campus, and data center network environments.
Security	Our security solutions provide fine-grained access control that identifies, mitigates, and fully reports on the most sophisticated security threats of the moment.
Identity and policy control	Our identity and policy control solutions integrate subscriber privileges, application requirements, and business policies within the IP network infrastructure. The result is an improved end user experience, enhanced security, and reduced operational cost.
Mobile device client	Multiple client solutions provide simple, secure, and accelerated network access through virtually any device—desktop, notebook, smartphone, or any other mobile or nonmobile device, whether managed or not, and for a broad array of operating systems.
Wireless networks	Wireless controllers, access points, and management tools deliver wireless LAN and WAN solutions for organizations of all sizes and types from small branch facilities to the largest centralized installations.
Network management	Solutions offer unified control of Juniper’s routing, switching, and security devices. Provisioning, monitoring, and troubleshooting are automated over the full device lifecycle, enhancing security and improving efficiency and total cost.

Table 2: New Education Network Solution Matrix

	INFRASTRUCTURE			SERVICES			POLICY AND MANAGEMENT
	ROUTING	SWITCHING	WIRELESS	FIREWALL/VPN/UNIFIED THREAT MANAGEMENT (UTM)	SECURE ACCESS	APPLICATION ACCELERATION	
Data center	MX Series M Series	EX8200 Line EX6200 Line EX4500 Line EX4200 Line EX3300 Line QFX Series	WLC Series WLA Series	SRX1400/SRX3400/ SRX3600/SRX5600/ SRX5800 vGW Series ISG Series NetScreen Series	MAG Series SBR Series	MAG Series	MAG Series NSM CM SBR Series WLM Series
Campus	M Series	EX8200 Line EX6200 Line EX4500 Line EX4200 Line EX3300 Line EX3200 Line		SRX650/SRX1400 SRX3400/SRX3600 ISG Series NetScreen Series IDP800/IDP8200	MAG Series SBR Series	MAG Series	MAG Series NSM OAC SBR Series WLM Series
Branch	J Series SRX650 SRX240 SRX210	EX2200 Line	WLC Series WLA Series AX Series	SRX100/SRX210 SRX220/SRX240 SRX650 IDP75/IDP250 SSG Series	MAG Series OAC SBR Series	MAG Series	OAC SBR Series SRC Series MAG Series
Mobile devices	Junos Pulse, Odyssey Access Client, secure clientless access via SSL VPN						

Summary—Juniper Is Changing the Face of the Education Network

Juniper Networks provides education customers around the globe with solutions that improve communications over their IP networks. Through deployment of Juniper's proven solutions, educational organizations at all levels can dramatically increase the performance, availability, and security of their most critical research and education functions, and at a much lower cost. The new education network is here, and it runs on Juniper solutions and the Junos operating system.

Next Steps

For more information on Juniper Networks education solutions, please refer to the Juniper Networks website at www.juniper.net, and please contact your authorized Juniper Networks representative.

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.

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