

Juniper Unite Cloud-Enabled Enterprise for Financial Services

Achieving agility by simplifying and securing financial services networks

Challenge

The enterprise network is no longer just a business necessity. To truly enhance employee productivity, financial services organizations must transform their enterprise networks into agile, secure services platforms that are accessible by users anywhere, anytime.

Solution

Juniper Unite for the cloud-enabled enterprise is a comprehensive reference architecture that lets financial services organizations build a secure, high-performance corporate campus/branch network.

Benefits

- Simplifies infrastructure deployment, management, and operations while accelerating service bring-up
- Secures the enterprise with a suite of solutions that defend everything from the infrastructure to cloud-based services and feeds
- Integrates partner offerings for WLAN and other key third-party components, providing cohesive, best-in-class options for customers

The cloud is central to creating a more agile, dynamic enterprise. From public to private to hybrid, financial services organizations are adopting cloud technologies as part of their operating model, making campus networks a critical on-ramp to cloud-based applications deployed in private clouds, on-premise data centers, or hosted in remote locations.

Network virtualization is also transforming IT in the financial services sector, offering a springboard to the flexibility and agility of the cloud. With virtualization, networks can evolve into new deployment and management paradigms, and enterprise campus and branch networks can reap the benefits of centralized visibility and control.

The Challenge

The widespread adoption of mobile devices and collaboration is increasing the reliance on cloud-driven applications, which need to be delivered to multiple users at multiple locations. With the increasing sophistication and variability of threats, it is clear that everything connected to or transmitting through the network is a potential security risk. These security risks are compounded by the strict regulatory and compliance requirements imposed on financial services organizations.

Large public cloud services and even some global enterprises have sparked a network transformation with innovations like SDN, Network Functions Virtualization (NFV), automation, analytics, and proactive network assurance. These are all technologies designed to create an agile network infrastructure that transforms IT into a competitive advantage. In financial services, this transformation is focused on reducing both CapEx and OpEx, freeing up budget to invest in revenue-generating applications that streamline the business, all the while creating a network foundation that effectively leverages these technology and productivity enablers.

Unfortunately, the majority of today's financial services campus networks are complex systems comprised of layers of switches and VLANs, all with multiple management points requiring many different tools. Multiple layers and flavors of security solutions, ranging from load balancers to firewalls, add even more complexity. Because these layers of products must be administered manually, the potential for configuration errors that disrupt services or open security gaps increases, making it riskier and more challenging than ever to operate and manage a distributed enterprise.

A cloud-enabled campus network, on the other hand, enables financial services organizations to rapidly deploy new services, and it increases employee productivity. Providing a common, converged network spanning distributed locations, a cloud-enabled enterprise can recognize and support a diverse set of wired and wireless devices, applications, people, and things, seamlessly and securely connecting them to services. With a cloud-enabled enterprise network, IT becomes a service provider for its company's distributed locations, enabling the delivery of reliable, scalable, and secure connectivity that links telecommuters, remote locations, and corporate offices to a common system.

Juniper delivers a comprehensive cloud-enabled solution for the financial services industry that leverages the technology used by service providers and mega cloud providers to deliver high-scale services capabilities for enterprise IT departments. Using innovations derived from building the world's largest cloud-based networks and applying them to financial services, Juniper delivers a simplified, programmable network platform that can be easily customized and replicated across branches, campuses, and on-premise data centers, allowing businesses to deploy their own private or public clouds.

The Juniper Networks Unite Cloud-Enabled Enterprise Solution

Juniper Networks Unite for the cloud-enabled enterprise is based on a three-pronged approach: simplifying the infrastructure; securing the network; and delivering an open, converged framework that ensures best-in-class deployments. Based on Juniper switching and security solutions—including unified threat management (UTM), next-generation firewalls (NGFW), and malware detection and eradication tools, as well as best-of-breed wireless LAN (WLAN), unified communications and collaboration (UCC), and network solutions through an Open Converged Framework—Juniper Unite offers all of the essentials an expanding business needs to support its operations today while preparing to embrace the future.

Simplify the Infrastructure

By collapsing core, distribution, and access layers into a single logical platform that can be managed from a central location, Juniper removes operational headaches while providing network agility. A single, easy-to-manage platform lets financial services IT organizations expand access port functionality, protect the edge, and centralize configuration, provisioning, management, policy, and visibility. It all works regardless of the deployment model: physical or virtual; public or private cloud; or traditional IT. The platform is based on Juniper switching and security solutions—including UTM, NGFW, and malware detection and eradication tools.

Juniper accomplishes this consolidation with Juniper Networks® Junos® Fusion Enterprise, an innovative architecture that lets customers build an agile enterprise network that treats access switches as extension ports of the core switch—effectively making multiple switches appear as a single, logical device. Junos Fusion Enterprise uses automated configurations to simplify operations and management; it also supports both stacked and mesh topologies, allowing both end-user access and private cloud or IT data center environments to be consolidated into a single logical system.

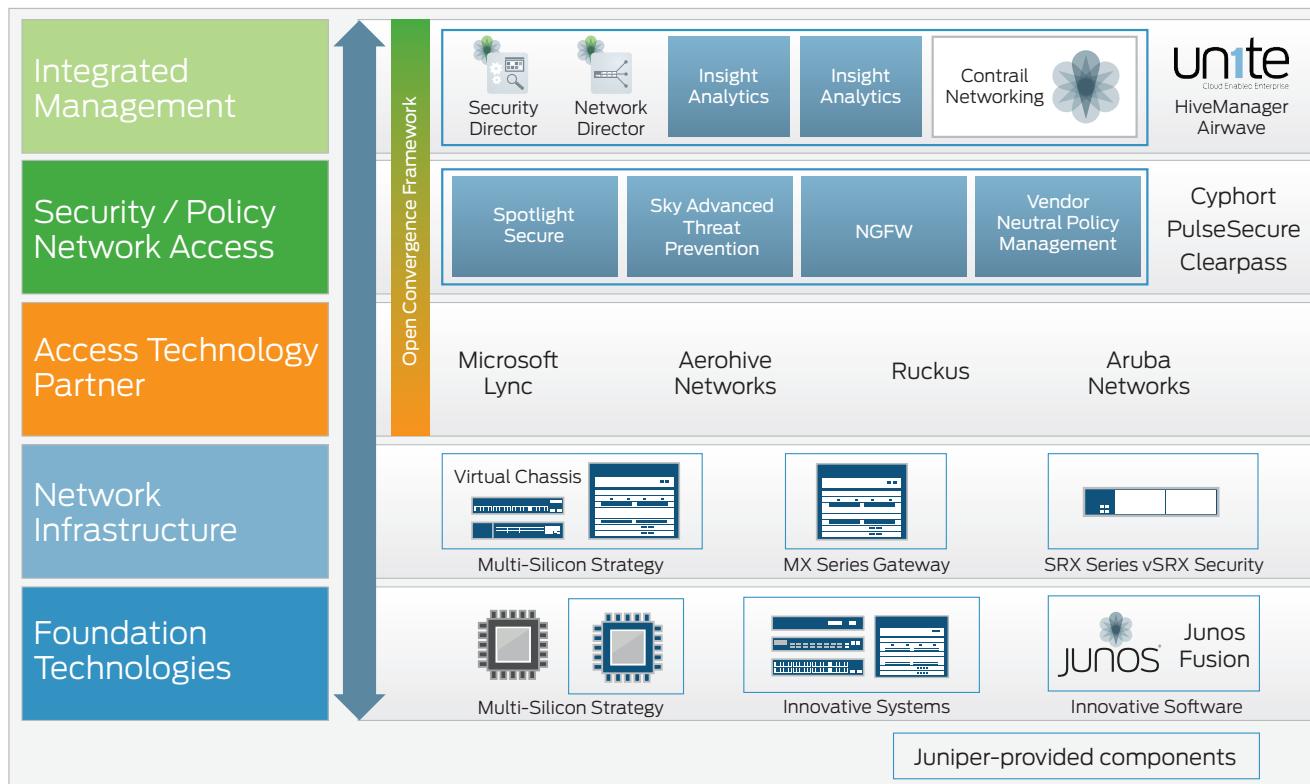


Figure 1: Juniper Unite for the cloud-enabled enterprise architecture

Securing the Enterprise

Juniper Unite for the cloud-enabled enterprise also provides the comprehensive security needed for financial services. Perimeter security is offered by Juniper Networks SRX Series Services Gateways. Management and control are provided by the Junos Space Network Director and Junos Space Security Director applications, which also provide network performance monitoring and capacity planning as well as centralized security policy management and control. The SRX Series platforms, which offer secure routing (VPN) and NGFW capabilities, are essential to providing a secure foundation for campus and branch office network deployments.

While there are many ways to detect and isolate intruders and bad actors, technology that requires the replication of an exact environment for the intruder is inferior to other solutions. Creating such an environment—including the creation of virtual machines (VMs) and mirroring the operating system and applications where the intruder exists—is not only challenging, but it also doesn't scale well. Simply maintaining such an ecosystem of software compatibility in order to isolate intruders becomes a project in and of itself.

A much more effective way to detect and isolate attackers is to immediately segment out intruders or bad actors by quarantining them in a sandbox area. Such technology currently exists, and it is much easier to use existing network capabilities than to create yet another layer of complexity and operational headaches.

Juniper provides this visibility and centralized network policy control using an open policy enforcement platform to stop threats faster and more effectively, both from a cost and an efficiency perspective. Juniper Networks Spotlight Secure gathers comprehensive, up-to-date threat and security intelligence and instantly communicates it to Security Director, which in turn sends the information to all SRX Series platforms in the network. Additionally, Juniper Networks Sky Advanced Threat Prevention delivers cloud-based protection and prevents malware from infecting the network by “detonating” downloads in a cloud sandbox, allowing SRX Series devices to identify and block any malicious threats.

Open Converged Framework

Juniper Unite for the cloud-enabled enterprise helps financial services deploy more agile and high-capacity networks that serve greater numbers of users and support an ever-increasing variety of devices with fewer resources and limited budgets. This comprehensive solution is designed to accommodate the emerging IT environment, providing access to corporate resources anywhere, anytime.

By partnering with best-in-class wireless LAN, unified communications, network access control, and security vendors through its Open Converged Framework (OCF), Juniper ensures

that financial services organizations have easy access to business resources from any device, in any environment, by offering a consistent user experience and a network that is easy to deploy, operate, and manage—without locking customers into proprietary solutions when converging or upgrading their enterprise network.

For wireless access, Juniper's OCF includes leading WLAN vendors such as Aruba Networks, Ruckus Wireless, and Aerohive Networks, allowing customers to choose 802.11n or move to more advanced technologies such as 802.11ac and a variety of other management and integration options.

Also, by integrating with collaboration tools such as Microsoft Lync, Juniper enables financial services providers to work together in real time, sharing and collaborating anywhere, anytime, over a reliable network infrastructure.

Features and Benefits

Manageability: Broad support for unified device, network, and security management tools helps lower TCO.

Single, consistent Junos OS across the product line: Unlike other vendors, Juniper Networks EX Series Ethernet Switches and SRX Series Services Gateways run the same Juniper Networks Junos operating system, ensuring easy management and consistent operations.

Seamless connectivity: EX Series switches allow always-on access for any application. Various interface types are supported, including 1GbE and 10GbE copper and fiber. Converged networks are supported for data, voice, and video, along with anytime/anywhere access through integration with Juniper's Open Converged Framework.

Advanced, open, and scalable network security: Security Director, combined with the Juniper Networks Sky Advanced Threat Prevention solution and SRX Series gateways, offers a comprehensive enterprise security solution, including a full range of firewall protection for everything from the smallest branch to the largest service provider. Advanced protection such as UTM, NGFW, and threat intelligence services work to keep both data and network safe. The ability to accept open feeds from Juniper as well as outside sources allows users to fine-tune their security for the most efficient network protection available. Both physical and virtual firewalls can be centrally managed, ensuring that policies are consistent throughout the network.

Broad range of switches for every need: The EX Series switches support everything from access to aggregation to core deployments.

Architectural advantages: Junos Fusion offers a simple, reliable, and flexible solution for building corporate networks, supported by the EX9200, EX4600, and EX4300 Ethernet Switches.

Solution Components

Juniper Networks Unite for the cloud-enabled enterprise is built on:

- Reliable, high-performance, and automation-ready EX Series switches and SRX Series gateways
- Modern user interfaces focused on the user experience, delivering single pane-of-glass management with Junos Space Network Director and Security Director, which integrate with Secure Analytics to enable dynamic workflow execution
- An Open Converged Framework with published APIs, allowing financial services customers to choose best-in-class technologies that address all technology needs for their campus and branches from unified communications, WLAN access technology, and third-party security feeds

Enterprise Infrastructure

Juniper Unite for the cloud-enabled enterprise begins with the high-performance EX Series switches, featuring the Juniper Networks EX4300 Ethernet Switch for access, the EX4600 Ethernet Switch for high-speed access or distribution, and the EX9200 Ethernet Switch for programmable core switching.

The EX Series switches offer a number of unique features, including Virtual Chassis technology, multichassis link aggregation (MC-LAG), Junos Space Service Insight technology, and unified in-service software upgrade (unified ISSU) in both modular and fixed platforms.

The EX Series has also assumed a new level of manageability and scalability with Junos Fusion Enterprise by enabling users to manage the entire enterprise campus—including hundreds of switches and thousands of ports—as a single, logical device.

Financial services customers can use the Junos Fusion Enterprise technology to collapse multiple networks into one, creating a large virtual system for the entire campus network that behaves and operates as a single switch. Organizations can deploy multiple Junos Fusion clusters throughout the enterprise network, each capable of scaling to support thousands of user ports across hundreds of satellite devices. Junos Fusion Enterprise also leverages the open 802.1IBR standard to create an enterprise campus network fabric composed of EX Series Ethernet Switches.

In a Junos Fusion Enterprise deployment, EX9200 switches serve as aggregation devices to provide the core service, while EX4300 switches serve as satellite access devices. Juniper Networks QFX5100 Switches are also supported in a leaf topology, offering the unique ability to manage both the campus and data center from a single, logical management plane, creating virtual network segmentation.

The EX Series switches support a number of network automation and plug-and-play operational features, including zero touch provisioning (ZTP), operations and event scripts, automatic rollback, and Python scripting. Juniper also supports integration with Chef and Puppet.

Finally, Network Director is an intelligent, automated network management tool that enables network administrators to see, analyze, and control their entire enterprise network—physical and virtual; wired and wireless; data center, campus, and branch—through a single pane of glass. Using Network Director, administrators can manage and synchronize both physical and virtual environments in the data center, making sure that network policies follow workloads as they move from server to server or from virtual machine to virtual machine. In the campus, Network Director automates routine and repetitive management tasks such as network provisioning and troubleshooting, dramatically improving operational efficiency and reliability.

Enterprise Security

Juniper Unite offers a comprehensive solution for building secure networks that protect the cloud-enabled financial services enterprise. Junos Space Security Director provides global application-level visibility and policy management across a portfolio of scalable SRX Series gateways. The SRX Series platforms provide a foundation for implementing a wide array of protections, including high-performance UTM services, NGFW services, and dynamic threat defense and intelligence. SRX Series gateways also offer multiple deployment options, including appliance, chassis-based, and virtual models, all offering the same full-feature capability. These building blocks, when combined with Juniper's threat defense and intelligence portfolio, provide a foundational platform for open policy enforcement:

- Security Director provides security policy management through an intuitive, centralized, web-based interface that offers enforcement across emerging and traditional risk vectors. Security Director offers extensive security scale, granular policy control, and policy breadth across the network.
- Spotlight Secure advanced threat intelligence aggregates threat feeds from multiple sources to deliver open, consolidated, actionable intelligence to SRX Series firewalls across the organization. These sources include Juniper and third-party threat feeds, as well as threat detection technologies that the customer can deploy. Administrators can define enforcement policies from all feeds via Security Director, which provides a single, centralized management point. These components, combined with the SRX Series firewalls, provide the foundation for the Spotlight Secure platform for open policy enforcement.
- Sky Advanced Threat Prevention is a cloud-based service that quarantines potentially malicious traffic or redirects it to be sanitized, preventing the proliferation of malware.

Summary—Simplify and Secure Enterprise Networks in Financial Services

As more financial services organizations find that their applications are moving to the cloud, they have a critical need for solutions that can help them bridge the gap between their existing environment and their vision of a more agile and flexible network.

Enter Juniper Unite for the cloud-enabled enterprise—a common, unified network that supports a diverse set of devices, applications, people, and things to provide reliable, scalable, secure, and highly available access to resources, whether they reside in the cloud, the data center, or the WAN.

Juniper Networks delivers a broad portfolio of reliable, simple, and smart switching, security, and management solutions that deliver the cloud-enabled enterprise network that financial services demands, seamlessly connecting people, devices, machines, and things in distributed enterprise environments. With Juniper Unite, the financial services organization's campus networks are more scalable, flexible, and secure.

Next Steps

To learn more about transforming your financial services organization with Juniper Unite for the cloud-enabled enterprise, please contact your Juniper representative, or go to <http://www.juniper.net/us/en/solutions/cloud-enabled-enterprise/>.

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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