

DISTRIBUTED ENTERPRISE SOLUTIONS

Enabling IT Services Without Boundaries
for the Distributed Enterprise

Distributed Enterprise Solution Overview

The traditional enterprise model based on an all-important central headquarters and second-class satellite branches is over. Today's enterprise footprint extends far beyond the corporate headquarters to globally distributed locations that encompass several branch locations, numerous remote offices, and even include home offices and mobile workers. Furthermore, enterprises are more "fluid" than ever before, where an employee's key to success could depend on working at the main campus one day and from a remote location the next. Along with this paradigm shift, essential online business applications have increased in sheer number as well as in their level of criticality. In this highly competitive and challenging environment, the network should not limit the ability to conduct business or capitalize on opportunities. That's why more and more forward-thinking organizations are searching for a network solution that transcends boundaries and provides consistent business services to anyone, anytime, anywhere.

Juniper Networks® Distributed Enterprise Solutions enable IT services without boundaries by delivering consistent, high-performance connectivity, security, and management services across all workforce centers regardless of size or location. In addition, they maintain a razor sharp focus on reducing the overall total cost of ownership (TCO) of the networks.

Challenges

Because the distributed enterprise has rapidly become a strategic and essential business imperative, the network and its applications may not have been architected from the outset to address the needs of anywhere availability, security, and manageability of mission-critical applications, or to concurrently reduce costs. Failure to address any one of the following challenges can directly impact the distributed enterprise's strategy, productivity, and success.

Connectivity

As enterprises have grown more distributed, the networks have become more complex than ever before. Adding to the complexity is the number of business-critical applications that continue to proliferate with seemingly no slowdown in sight. Many locations simply do not have the bandwidth required to handle the added load due to the increase in online and heavy applications that are being employed. Because these applications and access to critical data are essential, both must be reliable, fully functional, and provide the same level of availability, performance, and user experience regardless of the user location.

Security

Attacks that are targeting enterprises have become more sophisticated. They are launched by a wider set of cyber-criminals and are often targeted at the weakest link in the organization which can be headquarters, branch, satellite locations, or mobile end users. Because of the sophistication of today's attacks, they are often successful because they fall "between the cracks" of traditional point security products. Compounding the security challenge is the wider, more diverse audience (including employees, partners, subcontractors, and offshore facilities) that all require access to critical data. As a result, comprehensive and collaborative security for the network, applications, data, and user is essential.

Manageability

Because organizations must respond quickly to competitive and market changes, the unfortunate result is often a patchwork of deployed technologies and management consoles that neither "talk" to each other nor leverage the benefits of a single place to provision, manage, and control the overall solution. This scenario is less than ideal and the deployed technologies may actually be detrimental because of the high probability of missing or mis-configuring something due to the lack of consistency of operating systems and management consoles. As a result, a solution for the distributed enterprise must work in concert under a single operating system, have single configuration and policy provisioning, and provide consistent visibility and control across the distributed enterprise.

Total Cost of Ownership

Many products that are deployed, while solving the immediate requirement, often do not promote efficiencies across the organization. ROI is one metric that is important and most common, but other efficiencies that are more impactful are often neglected—including TCO, investment protection, and the adoption of a "pay as you grow" model. As a result, it is crucial for organizations to consider the cost savings realized by simplified and flexible designs, integrated and consistent devices tied together by a single OS that allows interoperability with existing infrastructure without vendor lock-in to realize the true efficiency of a solution.

DID YOU KNOW

- 62 percent of companies say they are increasing the amount of their branch offices
- 89 percent of companies say that they support virtual workers
- In these organizations, an average of 30 percent of workers are virtual
- Top applications for distributed workers include telephony, email, and access to business applications

Source: Nemertes 8/08

MULTI-VERSION NETWORK OPERATING SYSTEMS ARE THE SILENT KILLERS OF NETWORK EFFICIENCY

We asked companies to describe the impact of multiple network operating systems on their overall operations.

- 62 percent of respondents agree that multiple operating systems impact efficiency.
- Yet 52 percent also admit that they have multiple versions of that OS.

Source: A commissioned study conducted by Forrester Consulting on behalf of Juniper Networks

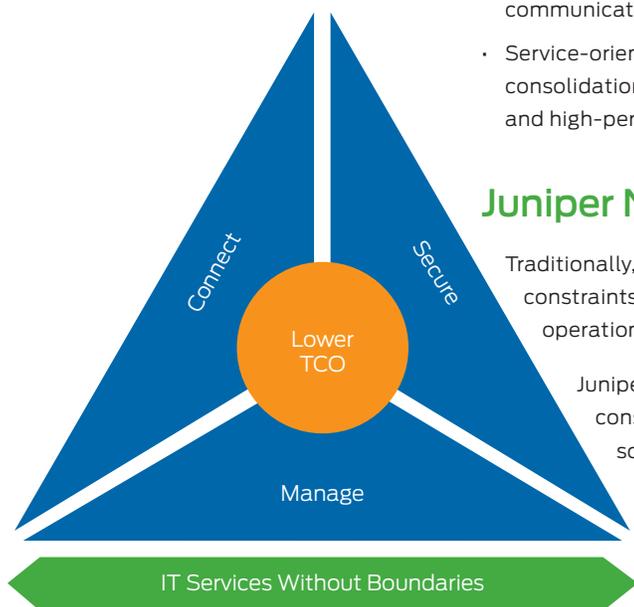


Figure 1: Juniper delivers IT services without boundaries at lower TCO by delivering network-wide and consistent connectivity, security, and management

Trends

With the emergence of the distributed enterprise, there are both key business and IT trends that the enterprise must recognize and address in order to be successful.

On the business side, this includes:

- Being agile enough to do business wherever the user is located in order to secure customer loyalty and accelerate growth.
- Delivering all relevant applications to the user and providing a consistent experience irrespective of location.
- Maintaining the highest level of security and compliance without slowing down the business.

On the technology side, this includes:

- Optimizing highly skilled staff despite static or shrinking headcount and other budgetary constraints.
- Managing threats that are compounded with the advent of more threat vectors and a higher sophistication of attacks.
- Converging network applications across the distributed enterprise, including unified communications and connectivity that includes both wired and wireless access points.
- Service-oriented architecture (SOA), Software as a Service (SaaS), server and data consolidation, and other changing application delivery paradigms that require a reliable and high-performance network to deliver their full potential.

Juniper Networks Distributed Enterprise Solutions

Traditionally, the ability to successfully conduct business has had certain immutable constraints. However, with today's distributed enterprise, the limits of business operations should not be dictated by the limits of the network.

Juniper Networks Distributed Enterprise Solutions eliminate these traditional constraints by offering comprehensive, high-performance networking solutions—at lower TCO—that include switching, routing, security, network management, and WAN optimization.

This is accomplished by providing consistent IT networking services for connectivity, security, and manageability for anyone, anytime, anywhere in the distributed enterprise.

Connect

Juniper Networks Distributed Enterprise Solutions deliver consistent connectivity across routing, switching, and security at all scales. This means that the service enablement features to connect, segment, differentiate, accelerate, and control network policy are consistent across the network independent of the size of a location. This is accomplished with a rich product portfolio that supports the smallest branch facility up to the largest workforce center without compromising capabilities.

Simplifying Design

The new SRX Series Services Gateways are ideal for enterprises whose remote locations generate revenues, provide customer services, or deliver new innovations. The SRX Series integrates leading security, connectivity, and application delivery capabilities into a single box for a safe, affordable, and consistent communications foundation.

Using Virtual Chassis technology, up to 10 Juniper Networks EX4200 Ethernet Switches can be interconnected to create a single “Virtual Chassis” configuration that operates as a single device, thus reducing the total number of devices to be managed. With Virtual Chassis technology, a comprehensive feature set, and line-rate performance, the EX4200 can be configured to take on the dual role of an access/aggregation or an aggregation/core device. As a result, it can be used to create a compressed, two-tier design instead of the traditional three-tier LAN architecture, especially for medium-sized networks. Eliminating an entire layer simplifies the network and reduces the total number of devices and interconnections needed.

High Availability (HA)

Juniper Networks Junos® operating system delivers complete Layer 3 functionality for devices in the distributed enterprise at no additional cost or license premium. Layer 3 technologies enhance the availability of the network because of reduced failure domains and faster convergence times compared to traditional Layer 2 technologies like Spanning Tree Protocol (STP). Because it is a single operating system that runs across routing, switching, and security devices, Junos OS reduces the time and effort to plan, deploy, certify, and operate network infrastructure. Junos OS also provides support for Juniper Redundancy Protocol so that firewalls and VPNs can be synchronized between high availability pairs to provide subsecond failover to a backup device.

Consistent User Experience

Juniper Networks WXC Series Application Acceleration Platforms deliver fast and consistent application response across the WAN to help ensure uncompromised access to mission-critical applications and services. These platforms enable IT managers to make the most efficient use of existing resources, while radically simplifying the architecture by streamlining applications and delivering unprecedented visibility into network performance. A consistent and comprehensive set of quality of service (QoS) features on routers, switches, and security devices ensure a consistent user experience regardless of location.

Secure

Because security is only as strong as its weakest link, it must be deployed across the entire infrastructure. Juniper Networks Distributed Enterprise Solutions leverage Juniper Networks Adaptive Threat Management Solutions—best-in-class security products that cooperate with each other proactively and prevent attacks that evade security point products. These solutions enable the network to dynamically adapt to risks in the environment, and always with a full audit trail. The integrated security capabilities ultimately result in a more secure network with consistent and easy-to-manage policy that dynamically adapts to the threat conditions on your network. Learn more at www.juniper.net/adapt.

DID YOU KNOW

EX Series Ethernet Switches with Virtual Chassis technology reduce the number of managed devices by a factor of 10.

Contact Juniper Rep for more details.

OPERATIONAL EFFICIENCY WITH A SINGLE OS

...the study reports a **savings of network operations costs** based on dollar savings across specific task categories including:

- 27 percent reduction in network downtime (based on reduction in frequency and duration of unplanned network events)
- 41 percent increase in network stability/reliability (the sum of planned and unplanned events)
- 40 percent decrease in time to resolution (the time needed to resolve unplanned network events)

Source: A commissioned study conducted by Forrester Consulting on behalf of Juniper Networks.

DID YOU KNOW

Enabling Layer 3 technologies at the LAN access improves high availability while reducing up to 40 percent from the TCO.

Source: Internal competitive TCO tool developed by Juniper networks switching team. Contact Juniper Rep for more details.

DID YOU KNOW

The new SRX Series Services Gateways provide:

- Routing, switching, firewall, IPS, VPN, UTM, QoS, UAC and PoE in a single box
- 5X security performance at 1/2 the cost
- 20X IPS performance • Full IPS license at 1/3 the cost
- PoE with half the power supplies
- 16X more Gbps Ethernet ports at no additional cost

Because everything runs on a single operating system, Junos OS, the branch routers now have the same capabilities as the high-end security equipment located at the data center, but at a branch appropriate scale. In addition, network access control enforcement can occur at every access point of the network. This enables “follow-me policies,” assuring that all users receive consistent access policies no matter how they access the network—remotely, from different branch offices, or from any major campus facility.

A more secure network leads to reduced operations costs, higher availability, and lower costs for circuits and equipment resulting in lower overall TCO.

Integrated Router Security with SRX Series

Integrated security in the SRX Series protects Web traffic, email, and Web mail from file-based viruses, worms, backdoors, trojans, and other types of malware through a complete set of Unified Threat Management (UTM) security features. UTM includes antivirus (instant message scanning, anti-spyware, anti-adware, and anti-phishing), anti-spam, and Web filtering. The SRX Series also includes attack protection at the network and application level through integrated firewall and IPS capabilities. For the first time it is practical to have IPS everywhere, enabling your network to capture sophisticated network attacks in a cost-effective manner.

Consistent IPsec VPN capabilities are available across the entire SRX Series family of products to securely connect every location, from one branch to the largest corporate headquarters and data centers. Sites are securely connected to each other using strong encryption and authentication so that data is protected from interception or man-in-the-middle attacks.

Finally, tight integration with UAC enables granular and dynamic policy control of user access permissions depending on job-role and device.

Integrated Switch Security with EX Series

EX Series Ethernet Switches deliver network access control (NAC) enforcement capabilities with 802.1X support, and they integrate with Juniper Networks Unified Access Control. This enables administrators to enforce access policy and security down to the individual port, depending on a user’s job-role and device.

The EX Series switch can dynamically assign users to a specific VLAN based on authorization policy, apply security and QoS policies, or it can mirror user traffic to a central location for logging, monitoring, or threat detection by intrusion prevention systems.

A full complement of integrated port security and Layer 2 security features defend against internal and external spoofing, man-in-the-middle, and denial-of-service (DoS) attacks on the LAN.

Manage

An important component of any solution being deployed today is the ability to control up-front and ongoing management costs. Using a single operating system and a single pane for network management for the entire enterprise Juniper simplifies configuration, troubleshooting and management. This brings significant business benefits to the enterprise by improving management efficiency, lowering operating costs, enhancing information security, and better aligning IT within the business.

Consistency with Junos OS

Junos OS integrates routing, switching, and security services. It offers the power of one operating system to reduce complexity, achieve operational excellence, and deliver dynamic services with lower TCO. The consistent operating environment of Junos OS streamlines network operations and improves the availability, performance, and security of business applications. It also provides stable delivery of new functionality in a steady, time-tested cadence, and provides highly available and scalable software that keeps up with changing needs.

Unified Configuration and Policy Provisioning

Network and Security Manager provides a single management tool set for the entire network routing, switching, and security device infrastructure. NSM provides centralized, end-to-end, device life cycle management, granular policy configuration, and comprehensive monitoring, reporting, and investigative tools to improve IT management and cost efficiencies and to maximize the security of the network.

Centralized Security Monitoring

The STRM Series collects events and alerts from different Juniper and third-party products and aggregates them in order to deliver an enterprise-wide threat management view. The data collection, normalization, and correlation helps customers detect threats they would otherwise miss, respond to the right threats at the right time, and implement appropriate compliance and policy controls. It also includes reports for network reporting, trend analysis, and compliance that are easy to customize.

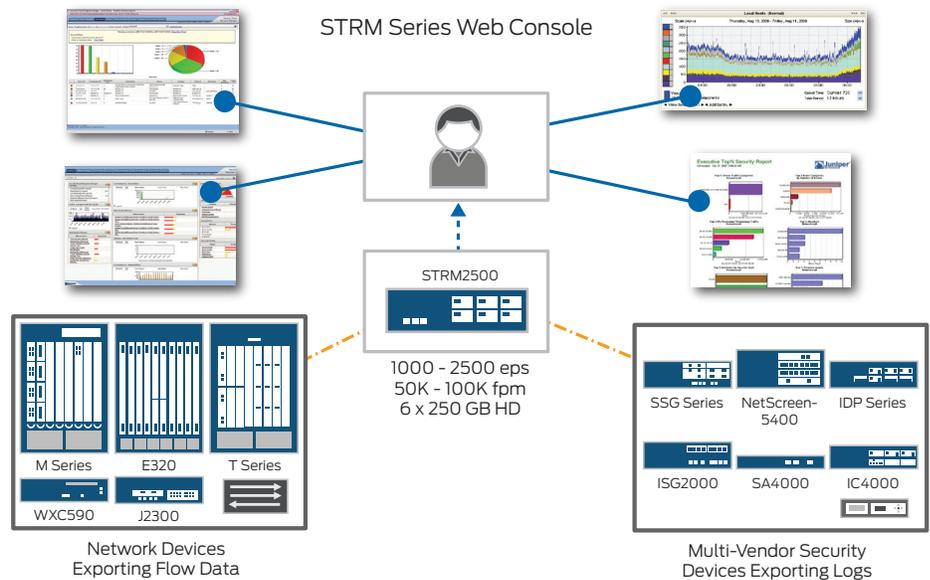
Minimize Downtime

AIS (Advanced Insight Solutions) is a service that is available with J-Care Services. It automatically detects problem conditions on Junos OS devices, and then proactively collects the troubleshooting information needed to diagnose and fix the issue. AIS allows your operational personnel to open a technical support case with JTAC, including this troubleshooting information, with a single "click." Using AIS, information about your network is matched to known issues, and vulnerabilities are identified before they can affect customers or users. This significantly reduces mean time to resolution (MTTR), prevents network outages, and helps reduce operational complexity.

THE TOTAL ECONOMIC IMPACT™ OF JUNIPER NETWORKS JUNOS OS

...the study reports a 41% reduction in overall network operations costs based on dollar savings across specific task categories: planned events, reduction in frequency and duration of unplanned network events, the sum of planned and unplanned events, the time needed to resolve unplanned network events and the "adding infrastructure" task.

Source: A commissioned study conducted by Forrester Consulting on behalf of Juniper Networks.



THE STRM SERIES CAN REDUCE LOGS ON AVERAGE BY 80%.

In a 24 hour period, STRM Series reduced 1.2 million logged events down to a mere 129 offenses by correlation of data sources.

Source: Internal testing by Juniper networks network management team. Contact Juniper Rep for more details.

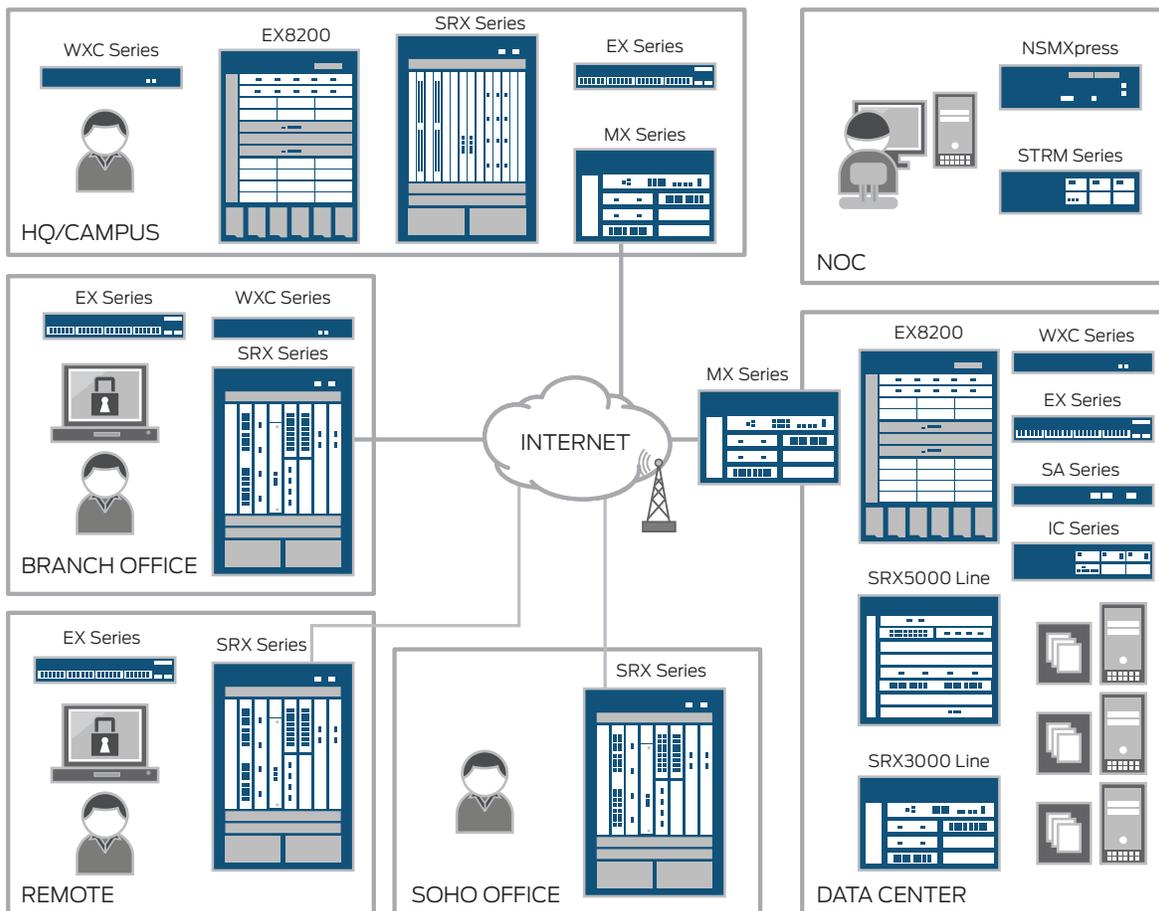


Figure 2: Juniper Networks product portfolio for the distributed enterprise

Lowering the Cost of Ownership

While new solutions are coming online to address enterprise challenges, only Juniper Networks Distributed Enterprise Solutions deliver a truly integrated solution designed for cost containment.

Juniper Networks Juniper Networks Distributed Enterprise Solutions lower operational costs in two ways.

- **CapEx savings**—With an open system architecture that leverages standards, businesses that take advantage of Juniper Networks Distributed Enterprise Solutions can leverage previously deployed technologies to reduce the CapEx costs involved in extending network capabilities. At the same time, the enterprise maintains more choice and flexibility to deploy a best-in-class solution on its own timeline because there is no vendor lock-in. With innovative design alternatives and integrated products, Juniper’s solution reduces the number of devices needed in the distributed enterprise network.
- **OpEx savings**—Operation expenses can be lowered via streamlined operations that include a single operating system and a single network management application. This reduces the expense of having to learn and manage multiple ways of operating and controlling the network. In addition, reducing the sheer number of devices and simplifying the network infrastructure produce direct savings associated with maintenance and service costs.

Solution Benefits

Through a truly integrated solutions-based approach, Juniper Networks enables the enterprise to offer IT services without boundaries, delivering the following benefits:

- By enabling seamless and secured collaboration capabilities between various audiences such as employees, partners, subcontractors, and outsourcers, each can share ideas and information in a highly efficient and cost-effective manner. This in turn fosters an innovative, collaborative, and efficient environment that spans to any and all locations regardless of the geographic distances that may be involved.
- By providing high quality and secure access to data and applications, the heterogeneous, highly distributed, and constantly mobile enterprise audience can continue to enjoy a positive user experience, achieving goals and contributing directly to the overall mission.
- With trusted and highly available network services that scale to all locations, organizations can increase their agility in responding to new opportunities. Even in challenging times, enterprises are in a position to provide for the requirements of their existing customer base and at the same time remain poised to attract new customers.
- In the current economic climate, nothing is as important as reducing TCO and delivering rapid ROI. The services (connect, secure, and manage) being delivered as part of Juniper Networks Distributed Enterprise Solutions not only provide the consistency, reliability, security, and efficiency needed for a high-performance network but also directly impact the bottom line—reducing both capital and operational costs.

Solution Planning, Implementation, and Deployment

Juniper Networks is revolutionizing the economics of today's global information exchange with purpose-built, high-performance services and support that enable customers to support a broad range of services and applications. For more information, please visit www.juniper.net/products/services.

Financing

The Juniper Financing Advantage, provided by IBM Global Financing, provides qualified customers with flexible financing at competitive rates, enabling lower TCO, higher risk mitigation, and the ability to affordably acquire the total solution—including Juniper hardware, software, and services—through a single contract.

To take advantage of special offers and learn more, visit www.juniper.net/us/en/how-to-buy/financing-advantage/.

Solution Matrix Elements

Juniper Networks Distributed Enterprise Solutions offer you the flexibility and open platform to deploy parts of the solution today and add on as your needs change. With the ability of solution elements to complement each other and support a multivendor environment, Juniper delivers a true solutions-based approach without the typical vendor lock-in found in other “solutions.” Elements of Juniper Networks Distributed Enterprise Solutions include:

| | SRX SERIES | SSG SERIES | EX2200, EX3200, EX4200 | EX8200 LINE | IC SERIES | MX SERIES | M SERIES | J SERIES |
|----------------------------------|------------|------------|------------------------------|-------------|-----------|-----------|----------|----------|
| Connect | | | | | | | | |
| Switching | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | |
| Routing | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ |
| Secure | | | | | | | | |
| Firewall/ VPN & IPS ¹ | ✓ | ✓ | | | | ✓ | ✓ | ✓ |
| UTM ² | ✓ | ✓ | | | | | | ✓ |
| UAC ³ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ |
| Manage | | | | | | | | |
| NSM/STRM Series | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Junos OS | ✓ | | ✓ | ✓ | | ✓ | ✓ | ✓ |

¹ IPS: Intrusion prevention systems

² UTM: Unified Threat Management (Antivirus, Web filtering, anti-spam)

³ UAC: Unified Access Control

Summary—Accelerating Your Business Without Limitations

The opportunities presented as a result of the distributed enterprise model are substantial, but they are not without risk. Juniper’s solutions provide a consistent, high-performance foundation to meet the unique infrastructure challenges of high-value distributed enterprises. We ensure that your business strategies are not dictated by the limitations of your network. Juniper Networks Distributed Enterprise Solutions provide IT services without boundaries by delivering comprehensive high-performance networking solutions that encompass switching, routing, security, and WAN optimization at lower TCO. The result is a fully aligned, consistent, and highly efficient organization that is poised to take advantage of business opportunities without the worry of IT limiting success.

For more information, contact your local Juniper representative or visit www.juniper.net/solutions.

Problems Solved with Juniper Networks Distributed Enterprise Solutions

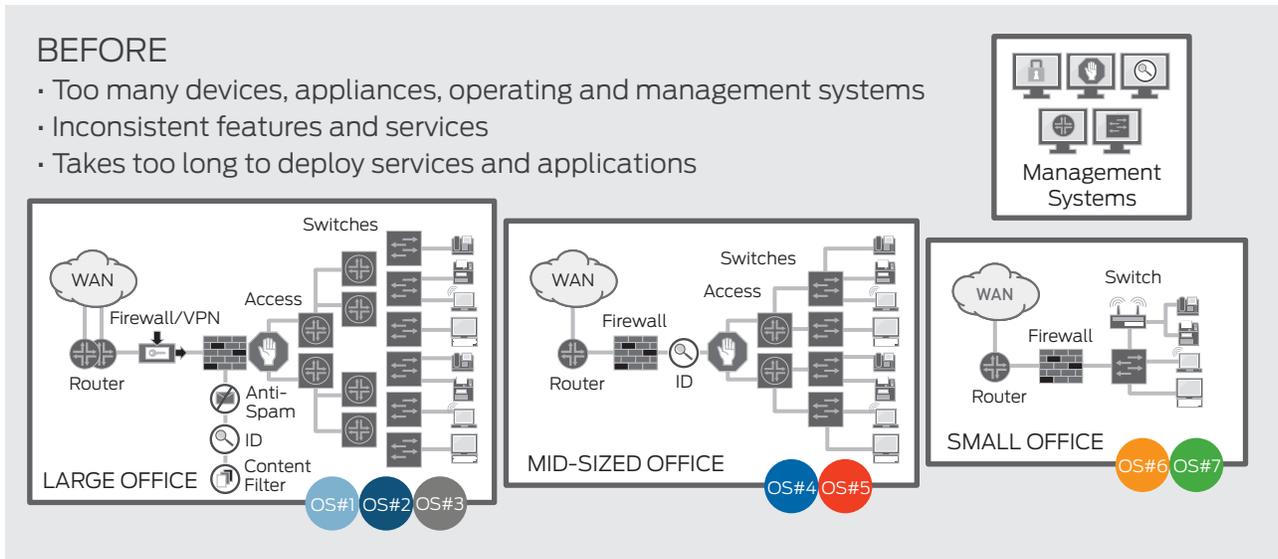


Figure 3: Challenges with legacy solutions for distributed enterprise networks

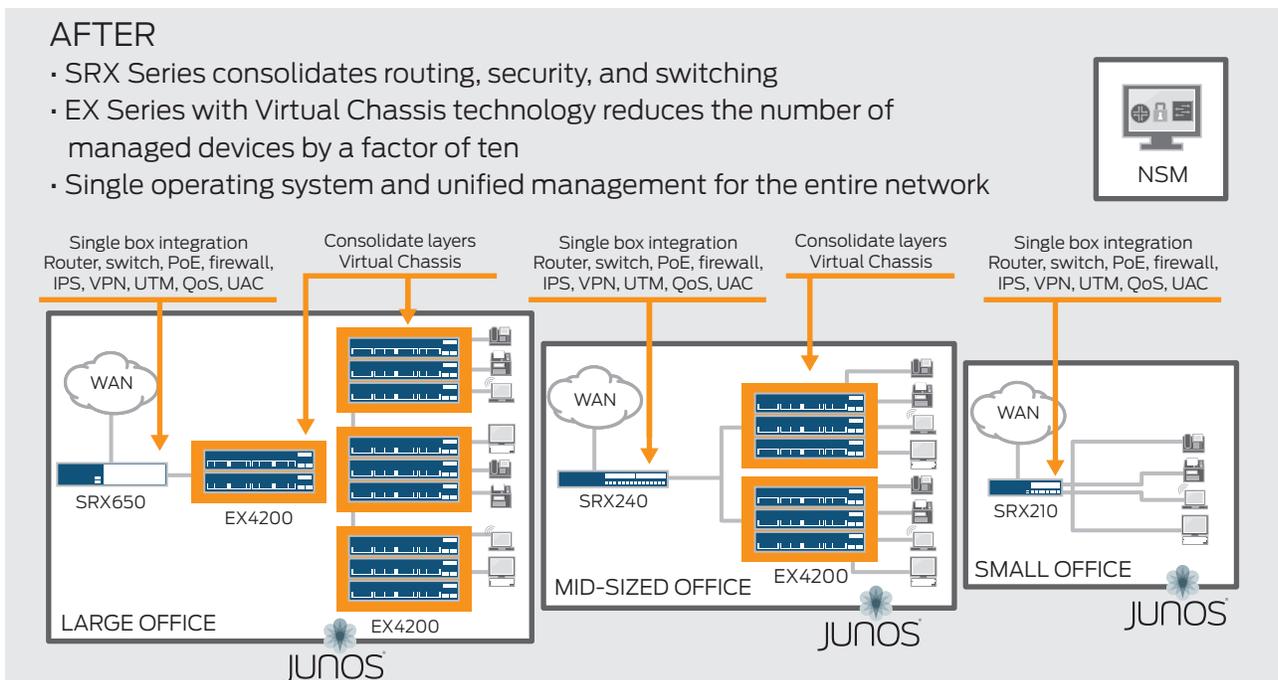


Figure 4: Juniper Networks Distributed Enterprise Solutions

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.

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