

OFFERING MANAGED SERVICES WITH JUNIPER NETWORKS SRX SERIES SERVICES GATEWAYS FOR THE BRANCH

Helping Service Providers Evaluate CPE Vendors to Justify, Develop, and Launch Differentiated, CPE-Based Managed Services for Branch Locations

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Executive Summary

In the early to mid-1990s, most managed services discussions focused on the value of offering managed services—ways to generate more revenue, differentiate the service, improve loyalty, reduce churn, improve margins, and more. Although these are all very important topics, the focus has shifted dramatically from whether to offer managed services to how to offer differentiated managed services and how to do it better, faster, and more cost-effectively than everyone else. These considerations include:

- Expanding the service offering to penetrate a broader market
- Offering more and better features to address key market gaps and customer pain points
- Turning up services faster
- Ensuring that services do not fail
- Making sure that services run at optimal performance all of the time
- Making services easy to provision, install, maintain, and manage
- Giving enterprise customers reports, monitoring capabilities, and service-level agreements (SLAs)
- And last but not least, pricing services at a level that offers the best value for customers while achieving the highest possible margins for service providers

These business requirements are not foreign to product managers, developers, and marketers. The fact that it's almost an impossible task to do all of these things makes the job interesting and challenging at the same time.

Introduction

The good news is that service providers can now truly deliver customer premises equipment (CPE)-based managed services better, faster, and more cost-effectively than traditional, standalone point solutions by using Juniper Networks® SRX Series Services Gateways for the branch. The SRX Series products for the branch, including the SRX100, SRX210, SRX240 and SRX650, are integrated, all-in-one secure router solutions offering the best of Juniper's connectivity, security, and application delivery capabilities for branch locations. SRX Series for the branch leverages the power of Juniper Networks Junos® operating system, Juniper's industry-leading operating system with a proven track record of providing a highly available and secure software environment. It also enables stable and predictable delivery of new functionality. Juniper Networks specifically designed SRX Series for the branch with the service provider's managed services business requirements in mind.

This document focuses on helping service providers develop and launch differentiated, CPE-based managed services for branch locations. After reading this document, service providers will have a better understanding of the following topics:

- Ideas for managed services, both features and packages that the branch SRX Series uniquely enables
- Key considerations in evaluating CPE platforms and vendors, and the ways that Juniper and its SRX Series Services Gateways for the branch address these criteria
- Economic analysis comparing traditional, standalone point solutions for individual services and the branch SRX Series platform

No Signs of a Slowdown for Managed Services

Managed services include the delivery, maintenance, and overall management of a combination of service components, features, and value-added services. Over the years, enterprises have demanded more feature-rich and intelligent managed services. The managed services market has evolved from managed connectivity to managed security, and it is moving towards an application delivery model. Similarly, end users have been willing to outsource more parts of their networks including the WAN, LAN, and metropolitan area network (MAN).

Managed services show no signs of a slowdown. The overall market for managed services is expected to grow to \$113 billion worldwide by 2012 with a CAGR of 10 percent as shown in Figure 1.

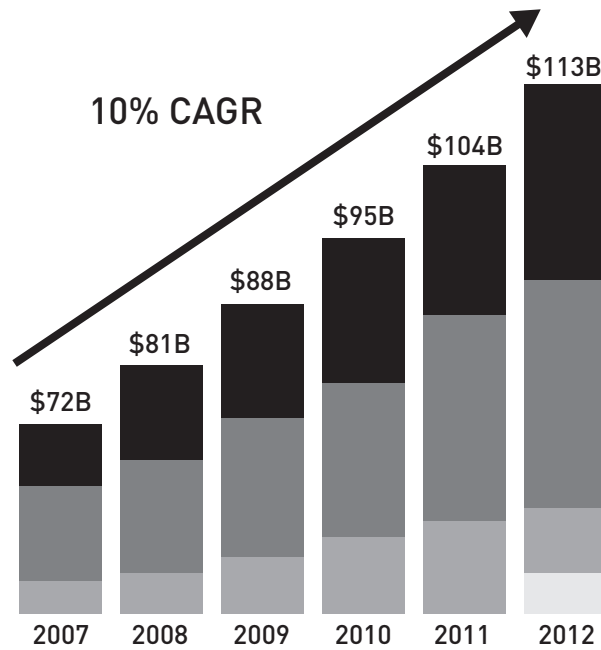


Figure 1: Worldwide managed services market growth, Gartner Group, 2008

Overall, there's an increased reliance on the IT infrastructure to enable sales, improve customer satisfaction, support critical business functions, and ensure business survivability. Today's communications, networking, and application requirements have created unique pressures on IT managers in managing complex implementations and technology migrations. It's not surprising that IT managers have embraced managed services and have extended their staff using expertise and resources from service providers. Other major drivers for increased deployment of managed services, particularly at remote, branch, and regional sites, are as follows:

- Increasingly distributed enterprises with more branches, remote locations, teleworkers, and mobile user applications
- Consolidation of data centers
- Need to ensure the same application performance for employees at branch locations as those at headquarters locations
- Emergence of new applications, need to support approved and rouge applications, and the constantly changing mix of applications
- Convergence of work and consumer applications such as social networks, Google maps, and so on
- Round-the-clock, always-on operations and globalization
- More sources and potential for security threats and breaches
- Compliance with regulatory requirements such as Health Insurance Portability and Accountability Act (HIPAA), Payment Card Industry Data Security Standard (PCI DSS), Sarbanes-Oxley Act (SOX), to name a few
- Limited IT resources, expertise, and budget

Creating Differentiated Services with the Branch SRX Series Products

Service providers have a tremendous opportunity to capitalize on these major drivers by offering differentiated and highly needed managed services offerings. This section provides some ideas for potential CPE-based managed services. These ideas are designed to spark initial thinking around a service that best aligns with the individual service provider's strategy, target segments, customer needs, competitive position, and core competencies. Each service provider's offering will be a variant or a combination of the service features and packages described below.

Although a number of CPE vendors can potentially support the features and packages discussed in this section, their implementations may not work well in service provider environments long term. These large-scale service provider implementations have posed major challenges to many technology vendors. CPE platforms have: failed more

often; experienced performance degradation; required forklift upgrades or additional devices or both; become more complex to provision, maintain and manage; and cost a lot more as the number of users, applications, bandwidth, connections, features, or services increased.

Juniper Networks sees these challenges as opportunities. Juniper has developed the branch SRX Series specifically to fill these gaps while enabling the features and capabilities that enterprises want from a managed service.

Service Features

Some ideas for CPE-based managed services features are as follows:

- **Connectivity:** The service connects key locations within a company, or connects multiple locations outside a company with its partners, suppliers, and customers. Routing and switching capabilities at the premises are inherent parts of the service. The service typically includes a wide range of LAN/WAN interfaces (xDSL, voice, T1/E1, Ethernet, PoE, 802.11n WLAN, 3G, and Gigabit Ethernet) as well as WAN technologies (Ethernet, Layer 2 VPN, IP VPN, Internet access, other). The service may include quality of service (QoS), redundancy, and protection options.
- **Remote Access:** For smaller locations such as branch or remote locations that cannot justify dedicated leased lines, the service provider can offer remote access using IPsec tunnels over the public Internet. This serves the purpose of using the Internet for connectivity to internal network resources without making the internal resources accessible to everyone on the public Internet.
- **Security:** Managed firewall in combination with IPsec VPN provides flexible connectivity with security. The next level of security is Unified Threat Management (UTM) which screens the traffic permitted by the firewall. This protects the network from threats such as worms, trojans, spam and spyware. Additionally, it controls the Web pages that users can access. UTM includes intrusion prevention/detection, antivirus, antispam, antiphishing, and Web filtering.
- **LAN with Unified Access Control:** Service providers can offer LAN switching, LAN interfaces, and unified access control (UAC). UAC dynamically controls access to the network and delivers QoS based on the user identity, device, and location. As an example, with UAC, only authorized users can use the corporate network and will get the appropriate QoS and network resources to support a VoIP application effectively.
- **Application Acceleration:** Enterprises can optimize bandwidth with application acceleration technologies to improve application response and deliver predictable performance for business critical traffic between remote branch and corporate headquarter locations. Application acceleration uses a combination of techniques such as compression and caching to increase capacity over WAN links, and Quality of Services (QoS) to assign priority to make sure that the most critical and delay-sensitive applications always have enough bandwidth, and other application-layer techniques.
- **SIP Trunking:** Managed SIP Trunking allows enterprises to reduce the number of PSTN phone lines, and significantly lower local and long distances charges between remote/branch offices and corporate HQ by routing voice calls over the Internet instead of the PSTN network.

Other service feature ideas for consideration include: more stringent SLAs; network monitoring, management, and reporting capabilities; end user portals for ordering, trouble ticketing, and service management; customer care, billing, and payment; design services; security posture assessments; network health assessments; and other professional services.

SRX Services Gateways for the branch can support one, some, or all of these features. The service provider can begin offering a subset of these services and easily upgrade to support more services remotely from their network operations center (NOC) as end user needs change.

Service Packages

Packaging not only refers to the combination of features offered, but it also refers to the service branding/naming and the key messages used to explain the service, its applications, the problems it solves, its benefits, and how it differs from other services. Packaging allows service providers to offer the service in a way that's most relevant, understandable, and attractive to their target segments.

SRX Series for the branch makes it easier and more cost-effective for service providers to mix-and-match service features, allowing the ability to offer multiple packages, provide service upgrade options, and even customize services. The following list shows some service packaging options:

- **Service Feature-based:** This type of packaging is ideal for enterprise customers who are looking for specific features to solve a problem or address a need. For example, a Managed Secure Connectivity Service offers connectivity, firewall, and UTM capabilities. Another example is a Managed Application Optimization Service that packages connectivity with application acceleration features.
- **Business Application-based:** Business application-based services are designed to support specific business-oriented applications such as business continuity/disaster recovery, supply chain extranet, and distance learning. The service can address a horizontal business application or an application specific to a vertical industry like financial services, healthcare, and education.

A Managed Business Continuity Service, as an example, may include redundant CPE and WAN connections, more stringent SLAs for availability and Mean Time to Repair (MTTR), quality network health and design assessments, periodic disaster recovery plan testing, and a dedicated technical support team.

- **Location Type-based:** A service provider can offer services for different types of locations: remote teleworker, branch, and headquarters. In addition to deploying CPE built to support the number of users and traffic volume, the service is tailored based on the IT expertise, security requirements, access needs, and types of applications supported at each site. Table 1 shows a sample service offering designed for companies that require more support at the smaller sites than at the larger locations. And at the headquarters, the primary requirement is robust connectivity because the in-house IT staff at that location can support all other needs.

Table 1: Sample Location-Based Managed Services Packaging

Location Type	Features/Capabilities
Remote teleworker	Internet access + IPsec VPN + firewall
Branch	Connectivity + firewall + UTM + LAN + UAC
Headquarters	Connectivity with protection, redundancy, diversity, and dual-homing options

- **Level of Service-based:** When customers have varying in-house IT capabilities at different locations, the service provider can offer multiple service levels as shown in the table below (standard, enhanced, premium). The standard service, as an example, would be ideal for locations that have access to in-house IT resources. The premium service, on the other hand, would be best suited for locations that have little to no IT resources or require higher levels of security or both.

Table 2: Sample Service Level-Based Managed Services Packaging

Tier	Services	Description	Reporting	Professional Services
Standard service	Managed Internet	Provides router, basic configuration, and support.	Reports availability, traffic volume, top users, latency, link utilization, and congestion points	Professional Services and consulting available for each service level
Enhanced service	Managed Internet + firewall + VPN	Provides router, configuration of Firewall, and support.	Standard service + firewall logs on network-based attacks and on-demand access to security reports	
Premium service	Managed Internet + UTM	Provides router, configuration of UTM, and support.	Enhanced service + security logs on network-based reports, content-based attacks, and compliance regulation reports	

What to Look For in CPE Platforms and Vendors

CPE platform features and vendor capabilities have significant influence on the service provider's service offering; ability to deliver, maintain and manage the service; and overall success with the service. Table 3 offers some evaluation criteria for CPE/vendor features and capabilities to support key business requirements in offering managed services.

Table 3: Evaluation Criteria for CPE Platforms and CPE Vendors

Service Provider Business Requirements	Desired CPE Platform/Vendor Features and Capabilities
Offer differentiated flexible service offerings	<ul style="list-style-type: none"> • Fully Integrated, All-in-One CPE with Comprehensive Features: CPE that provides connectivity, security, and application delivery, as discussed in the Service Features section, gives service providers the flexibility to create services uniquely tailored for different target customers and their needs without investing in multiple, standalone service-specific devices. Using service-specific devices, the service provider may need to deploy separate devices for each service/feature the customer needs or do a major forklift upgrade. An integrated CPE-based solution such as the branch SRX Series gives the service provider, and hence end users, the ability to add new services and features more easily and quickly on a single platform. • Scalable Family of Products: Consider CPE platforms that offer a product family that can support different types of locations (remote site, branch, regional, and so on), service requirements, and platform configurations based on number of users, traffic volumes, and types of applications. This ensures that for any given location, the CPE is right-sized for its needs—not too small, has room for growth, and not so big as to be cost prohibitive. The branch SRX Series includes a number of configurations ranging from Juniper Networks SRX210 Services Gateways for small branch sites to Juniper Networks SRX650 Services Gateways for the larger regional locations. • Enables Today's and Future Services: Managed services will continue to evolve and support emerging technologies like cloud security, high-definition video conferencing, unified communications, and Software as a Service (SaaS). Given these trends, service providers need to evaluate CPE platforms and vendors that can not only support today's implementations but also provide seamless support for future deployments with minimal to no upgrade requirements. The branch SRX Series product portfolio is built to work seamlessly with these emerging applications.
Deliver top-notch service performance and SLAs	<ul style="list-style-type: none"> • Stability and High Availability: Evaluate the device's stability, availability, and failure record. How often does the device "crash"? How often does the operating system fail? How often does it require complete reboots, complete device replacement, or both? Juniper Networks has an excellent reputation and proven track record in this area. Juniper can provide service providers with references as well as test and production environment availability data on its platforms. Service providers should also consider obtaining reports and references from other CPE vendors. • Maintain High Level of Performance and Throughput: One of the potential challenges with all-in-one devices is degradation of throughput and performance when adding new features. Most CPE vendors can provide high performance when supporting one feature only. However, it is important to ensure, for example, that the device can maintain the same level of throughput with firewall, UTM, and other features running concurrently as it does with only firewall enabled. The branch SRX Series is designed to deliver features concurrently at a rated performance/throughput. This performance/throughput for each service does not change regardless of the number of features enabled on the device. • Integrated and Comprehensive Functions: An all-in-one device reduces the number of points of failure in the solution. However, if the integrated services device has a high failure rate, the service provider runs the risk of taking down all services for that particular location. As a result, it's even more important for all-in-one devices to demonstrate a high reliability track record. It is also important to ensure the availability of redundant configurations for backup and load balancing purposes. • Rapid Troubleshooting and Restoration: The next entry in this table discusses capabilities that enable more efficient service management. The ability to proactively prevent a potential performance-impacting event combined with efficient and effective problem detection, isolation, and resolution results in better overall service performance.

Table 3: Evaluation Criteria for CPE Platforms and CPE Vendors (continued)

Service Provider Business Requirements	Desired CPE Platform/Vendor Features and Capabilities
<p>Ensure fast and efficient service delivery, maintenance, and management</p>	<ul style="list-style-type: none"> • Single Provisioning and Management System: Consider CPE solutions that use a single system for provisioning and management for all services in the network. Evaluate systems that provide centralized, end-to-end device lifecycle management, granular policy configuration, global policy enforcement, comprehensive monitoring, reporting and investigative tools. This greatly simplifies and speeds up the provisioning, maintenance, and ongoing management process. Juniper’s Network and Security Manager facilitates all network, security, and operations functions for the SRX Series. Using different management systems is typical with multi-device implementations for different services, particularly with different vendor devices. However, keep in mind that not every all-in-one device operates with a single provisioning and management system. • Zero-Touch Configuration: Zero-touch configuration saves time and simplifies the pre-staging and device configuration process. As an example, with zero-touch configuration on the branch SRX Series, the service provider remotely creates and emails the device configuration in a startup configuration file. The end user simply uploads the file to the device, eliminating the need for technical expertise at the end user location. • Remote Moves, Adds, and Change in Services: Having the capability to remotely add, change, upgrade, or disable services without impacting existing services speeds up the overall provisioning process. • Remote Management and Maintenance: The service provider can perform software upgrades, testing, monitoring, and configuration changes remotely. This eliminates the need for a truck roll to the customer premises. • Mass Provisioning: Mass provisioning allows a service provider to configure and provision services to multiple devices simultaneously. Mass provisioning is ideal for service provider implementations and large multi-site, multi-service networks. • Integration with Third-Party Systems: A CPE management system that can easily and seamlessly integrate with existing operations support systems/base station subsystem (OSS/BSS), IT Service Management, and other systems can enable a more efficient operations process. Evaluate the availability and track record of APIs and Software Development Kits (SDKs).

Other CPE platform features and vendor capabilities that address all of the key business requirements outlined in the table above are as follows:

- **Application Customization:** Application customization refers to the vendor solution’s capability to allow service providers to develop their own specialized applications using an SDK with open and secure interfaces to the platform’s operating system. Service providers can build customized applications to integrate into legacy OSS/BSS, implement enhanced monitoring tools for specific services or types of customers, or develop additional encryption, intrusion detection, or other deep packet inspection functionality.

Customized applications will only run as well as the underlying operating system and platform supporting them. Service providers should assess the capabilities of the underlying operating system and the impact of application customization on the operating system and inherent platform features. Juniper Networks offers the Partner Solution Development Platform (PSDP) to allow customers and partners to develop their own specialized applications on Junos OS.

Consider an OS such as Junos OS that is simple, predictable, and reliable. As an example, with PSDP, one way of protecting both OS functions and customized applications is to ensure that the customized applications are completely separated and self-contained, running on top of, instead of being deeply embedded into Junos OS. Also, having a single Junos OS source code with new versions predictably released along a single software train gives service providers the confidence that customized applications will readily work with new releases of the code.

Therefore, depending on the customized applications, this capability can help service providers deliver new and differentiated services, offer top-notch service performance and SLAs, and provide fast and efficient service delivery and management.

- Service Provider Partner Program:** Evaluate the CPE vendor’s ability and track record to provide support and professional services, in addition to simply selling the CPE. Juniper Networks J-Partner Managed Services Program is designed to help service providers justify, create, launch, and market managed services, as well as design, implement, and manage those services. Some of the tools available with the J-Partner Managed Services Program are shown in Figure 2 below.

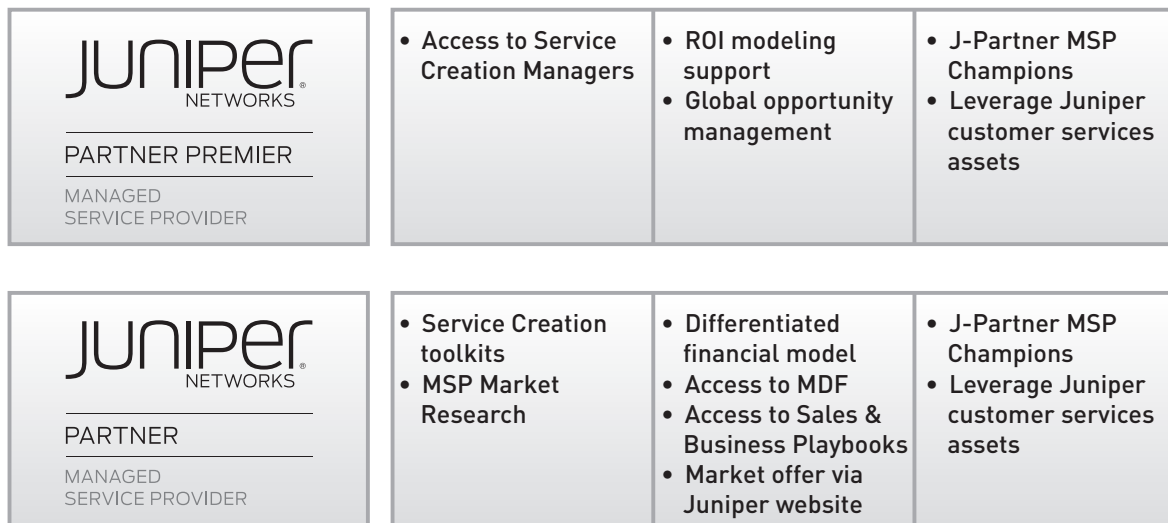


Figure 2: J-Partner Managed Services enablement tools

In addition to the branch SRX Series addressing key business requirements and delivering the features discussed in this section, SRX Series for the branch provides a compelling economic model for differentiated CPE-based managed services.

Backed by Solid SRX Series Economics

Differentiated managed services need to become an ongoing and growing source of revenue. At the same time, service providers need to look for the most cost-effective solution today and into the future to maintain the best possible margins.

The table below compares the CPE costs between a fully integrated, all-in-one solution using Juniper’s SRX Series and a tradition Cisco solution.

Table 4: Economic Comparison: Traditional Cisco Solution vs. Juniper Networks SRX Series

Cisco		Juniper Networks
\$2,495	BASE PLATFORM	\$2,999 (16 GigE included)
\$2,295 16-port FE module		
\$4,790		
\$2,400	ENTERPRISE LICENSE	FREE
<i>*ISR Advanced Enterprise License</i>		<i>*Routing/Firewall/VPN</i>
\$3,000	IPS	\$700
<i>*AIM module</i>		<i>High-memory version with Content Security Accelerator</i>
NO Antivirus NO Antispam	UTM	Antivirus Antispam Web filtering
\$10,190	TOTAL	\$3,699 = 74% Savings

Juniper Networks SRX Series offers up to 74 percent cost savings depending on the size of the implementation for a service providing WAN and UTM features.

Other hardware- and software-related cost savings with the branch SRX Series come in areas like space, power, and upgrades (no forklift upgrades required).

Service providers can also save money by using the branch SRX Series in the design, configuration, service delivery, maintenance, and management process to achieve:

- Solution design process and resources savings
- Reduced technician time and expert resource requirements
- Truck roll savings
- SLA non-compliance payout savings

The amount of cost savings may vary greatly between service provider implementations depending on the service offerings, SLAs, number of customers, existing operations systems, processes and organization, current/existing CPE platform, and similar variables.

Service providers can expect to generate more revenues with branch SRX Series-based managed services because the SRX Series enables service providers to:

- Develop and launch more differentiated and targeted services
- Provision new and incremental services more quickly
- Scale services to support the growing needs of customers
- Address the needs of different types of applications, network configurations, and locations
- Improve customer loyalty and retention
- Support future services

Conclusion

The ever-increasing desire of enterprise users to outsource their networking functions, coupled with Juniper Networks SRX Series Services Gateways for the branch, present a winning combination for service providers.

Enterprise user demand hasn't been the challenge for service providers in building a sustainable, growing, and high margin business. In fact, the overall market for managed services is expected to grow to \$113 billion worldwide by 2012 with a CAGR of 10 percent. This growth is a direct result of the increased complexity of enterprise networking environments, and the significant challenges that enterprises face in managing these networks. However, service providers have been hindered by technology where traditional, standalone, single-service CPE solutions for branches were not built to meet the large-scale, multi-featured, high volume demands required of stable, cost-effective, highly available, simple and fast network operations needed by service providers.

Juniper Networks has addressed these requirements with its SRX Series for the branch. Service providers can now truly deliver CPE-based managed services better, faster, and cheaper. The branch SRX Series is an integrated, all-in-one solution offering the best of Juniper's connectivity, security, and application delivery capabilities for branch locations. The platform leverages the power of Juniper's industry-leading operating system, Junos OS. Junos OS has a proven track record of providing a highly available and secure software environment, and also enables stable and predictable delivery of new functionality.

SRX Series Services Gateways for the branch help service providers achieve the following:

- Offer differentiated and flexible service offerings that integrate any combination or level of connectivity, security, and application performance features
- Deliver top-notch service performance and SLAs, even as customers add new features, applications, and users
- Ensure fast and efficient service delivery, maintenance, and management with a single management system, mass provisioning, and remote operations capabilities that eliminate the need for truck rolls and onsite technical expertise
- Additionally, Juniper Networks' commitment to partnering with service providers is evident in its Partner Solution Development Platform (PSDP) and its J-Partner Managed Services Program. PSDP allows service providers to develop their own specialized applications on Junos OS. The J-Partner Managed Services Program provides tools and support services throughout the entire life cycle of the service from development, launch, and marketing through ongoing service support.

The economics of the SRX Series for the branch works well for service providers. As an example, service providers can achieve up to 74 percent cost savings in platform costs alone compared to a traditional Cisco solution, depending on the size of the implementation for a service providing WAN and UTM features. On top of that, service providers can save money on space, power, and upgrades. On the operations side, there are significant cost savings with a simpler and more efficient design process, less technician time and expert resource requirement, fewer truck rolls, and fewer SLA non-compliance payouts.

Lastly, managed services based on the branch SRX Series can contribute significantly to the service providers' top line revenues. SRX Series for the branch improves service providers' revenue position by enabling them to develop new differentiated services, provision services more quickly, improve loyalty and retention, and support future services.

Service providers no longer have to make compromises when offering managed services. No longer do they need to pick just one or two between better, faster, and more cost-effective options. Juniper Networks and its SRX Series for the branch enable service providers to achieve a significant competitive advantage, solving the enterprise users' most critical connectivity, security, and application delivery requirements not only today but into the future.

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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