

DISTRIBUTED ENTERPRISE SOLUTIONS FOR THE BRANCH

Offering a consistent, secure, high-performance foundation that enables services without boundaries for the high-performance enterprise

Distributed Enterprise

Solution Overview

Enterprises have undergone a substantial change over the last decade. Whereas at one time headquarters were a central point for business, today it has become increasingly common for distributed enterprises to operate where business is conducted.

The traditional “outpost” image that is conjured up with a branch location is the mindset of a bygone era. A branch location is defined as any strategic location that is logically and/or geographically separate from campus or headquarters facilities. Today, branch locations significantly contribute to the bottom line and are central to the organization’s success.

But this paradigm shift can also result in significant challenges. As enterprises embrace the distributed concept, the network can significantly limit the ability to capitalize on opportunities. By adopting a solution-based distributed enterprise approach, the limitations of the business no longer need to be dictated by the network. Instead, the network and its applications can support and accelerate business with a location-agnostic and cost-effective approach. Every organization needs to be able to provide services without boundaries, thus being able to realize its full potential both now and into the future.

Challenges

The challenges associated with a distributed environment that requires “services without boundaries” are not trivial. Furthermore, the existing network and its applications have not been architected from the outset to address the needs of anywhere availability, security, and the manageability of mission-critical applications, while concurrently reducing costs.

Failure to address any one of the following challenges can directly impact the success of the branch strategy of the distributed enterprise as well as worker productivity.

Connectivity

Business-critical applications that are required for daily operations continue to increase with seemingly no slowdown in sight. Many branch locations simply do not have the bandwidth required to handle the increased load that is demanded due to the increase in online and resource intensive applications that are being utilized across wired and wireless branch environments. Compounding the problem is the fact that many applications cannot scale to support remote locations and users. Because these applications and user 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 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 has increasingly become branch and satellite locations, and mobile end users. Because of the high 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.

Visibility and Control

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 from which to provision, manage, and control the solution. This scenario is less than ideal, and deployed technologies may actually be detrimental due to the high probability of missing or mis-configuring something due to the lack of consistency in operating systems or management consoles. As a result, a solution for the distributed enterprise must work together on a single operating system that can provide consistent visibility and control across the distributed enterprise.

High Cost

Many products that are deployed, while solving the immediate requirement, often do not promote efficiencies across the organization. ROI is one metric that is both important and commonly used, but other metrics that could be more impactful are often neglected. This includes total cost of ownership (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 efficacy of a solution.

DID YOU KNOW

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

source: Nemertes 8/08

Trends

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

On the business side, these trends include:

- Being agile enough to provide services where 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, these trends include:

- 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

Typical Branch Categories

Because enterprise design has shifted to a distributed approach, three major types of branches have emerged.

- **The revenue focused branch** is most commonly a retail location for which the branch's key purpose is to generate additional revenue for the company. This is done through the rollout of new and differentiated services. In general, the revenue gateway does not have staff on location to deal with complex technical issues.
- **The services focused branch** is a location that is dedicated to dealing directly with the organization's customers. Common examples of this type of branch location include health clinics and financial services locations. The charter of a service gateway is to enhance the bond of trust between the organization and the customer, thus retaining the customer base while attracting new customers. This is typically accomplished through the rollout of new services, programs, or communication initiatives while ensuring full operational security and compliance standards.
- **The innovation focused branch** purpose is to come up with new ways to ensure that the company gains or continues to maintain leadership in its category or vertical. This is accomplished by attracting and retaining a quality talent pool in which collaboration is fostered with other individuals and work groups. It is essential that operations and employees are highly efficient. The only way of accomplishing this is through efficient collaboration of the ubiquity of services that help personnel effectively carry out their tasks.

Table 1: Common Branch Categories and Challenges They Face

	BRANCH CHARTER	MISSION
The humble storefront	Revenue	Create new source of revenue and operational efficiencies
The mission-critical clinic	Service	Attract and retain valuable clients
The high-powered center of excellence	Innovation	Retain and activate a high quality workforce

The result of the distributed enterprise model is the emergence of three branch "gateways".

Distributed Enterprise Solutions for the Branch

Traditionally, the ability to successfully conduct business 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 a consistent, secure, high-performance foundation at a lower TCO that meets the unique infrastructure challenges of high-value branch locations. This is accomplished via three basic tenants:

Demand More Connectivity—Traditional thinking has been that campus, branch, and remote locations are distinct entities. As a result, solutions generally do not scale across them and this has produced a compartmentalized deployment scenario that is not optimized. With revolutionary technologies like Virtual Chassis made available with Juniper Networks EX Series Ethernet Switches, the solution optimizes network bandwidth and resources, while providing the flexibility and simplicity to adapt to changing trends without an entire redesign of the existing network. Integrated products such as Juniper Networks SRX Series Services Gateways combine routing, switching, wireless LAN controller, security, and flexible WAN and LAN options within a single device to optimize the number of devices needed in smaller locations, thereby achieving huge savings for both capital and operational expenses. Multiple Juniper Networks AX411 Wireless LAN Access Points can be combined with and managed by the SRX Series to deliver integrated management and category-leading security performance. Juniper Networks WXC Series Application Acceleration Platforms are another key component of the overall solution that delivers industry-leading application optimization to deliver a consistent experience for users when they move within the distributed enterprise continuum. Juniper Networks Distributed Enterprise Solutions eliminate connectivity issues and offer an integrated solution that provides a simple, scalable, and cost efficient design across all distributed locations.

Demand More Security—Because security is only as strong as its weakest link, it must be consistently deployed across the entire infrastructure. Juniper Networks Distributed Enterprise Solutions employ enterprise-wide security coordination where all security elements (including third-party technology) collaborate to identify, mitigate, and report on highly sophisticated attacks that evade traditional point security products. With products like the SRX Series Services Gateways with Unified Threat Management (UTM) can consistently and efficiently be deployed even at the smallest branch. The EX Series further enhances branch protection by providing Layer 2 security features and functionality. The Juniper Networks Distributed Enterprise Solution leverages industry-leading technologies such as unified access control, adaptive detection and threat management services, and security zoning policies including DMZs, while ensuring that the organization meets compliance criteria. All security policies are centrally managed and remotely deployed, which is specifically relevant at branch locations where IT staff may not be on location. Juniper Networks is recognized as a leader in enterprise network security, with innovative products and solutions acknowledged as best in their respective categories by analysts from around the world. Furthermore, because they are from Juniper, these products offer something that other products don't—the ability to work together with automatic correlation and configurable response to achieve better security at a lower TCO.

Demand More Manageability—An important component of any product or solution being deployed today is the ability to reduce complexity while controlling costs. Juniper Networks Distributed Enterprise Solutions are controlled by Juniper Networks Junos® operating system, a single network operating system integrating routing, switching, and security services. Junos OS offers the power of one operating system to reduce complexity, achieve operational excellence, and deliver dynamic services with lower TCO. Beyond the obvious benefits of simplicity, a key advantage of having a single operating system throughout the network is the consistency of features across different products and locations across the distributed enterprise. Junos OS provides the same technology, hardened with carrier-class

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Juniper Networks is the leader in performance-enabling services and support, which are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to bring revenue-generating capabilities online faster so you can realize bigger productivity gains and faster rollouts of new business models and ventures. At the same time, Juniper Networks ensures operational excellence by optimizing your network to maintain required levels of performance, reliability, and availability. For more details, please visit www.juniper.net/us/en/products-services/.

reliability and made available everywhere—from the smallest branch location to the largest corporate headquarters. Because of consistency in the design, operation, and architecture, the product choice quite simply becomes a matter of scale of the deployment.

With these solutions, it no longer matters where you are doing business, because business can be conducted and the network and its applications can scale to wherever you are. Benefits include accelerating business productivity, revenue, and growth initiatives, while lowering cost and complexity. Through a truly integrated solutions-based approach, Juniper Networks offers services without boundaries and delivers the following:

- **Business agility**—This is achieved via a fully integrated, dynamic services architecture. With carrier-class availability, all applications are available regardless of location and are agile, which enables the organization to respond to market and IT changes as they occur.
- **Managed risk**—This is done by adapting to emerging threats including new threat vectors, more sophisticated attacks, and a growing audience committing nefarious activity. Through advanced correlation and full forensics, the enterprise can manage the increased risk that it faces as well as demonstrate compliance to regulatory agencies.
- **Global efficiencies**—These are achieved via streamlined operations that include a single operating system, which reduces operational expenses and lowers power costs due to highly efficient power consumption. Additionally, it is possible to reduce the physical footprint due to a collapsed architecture resulting from reduced box requirements as part of the solution.

Solution Planning, Implementation, and Deployment

The revenue focused branch's main function is to efficiently service the customer to generate additional revenue. The Revenue Gateway, often a retail location, may accomplish this by adding online and secure services such as an enterprise resource planning (ERP) feature directly from the cash register. Since space is at a premium, a single device such as the SRX Series gateway may be deployed to provide the integrated services necessary, while also being scalable enough to enable additional revenue-generating service at a later date.

The services focused branch directly faces the customer and often has access to mission-critical applications and confidential data that are centrally managed and stored at headquarters or a data center. Not only is availability of these services critical, but also security and the ability to comply with the multitude of compliance regulations. In a financial institution, maintaining "Chinese walls" is essential, while at a health care clinic, Health Insurance Portability and Accessibility Act (HIPAA) compliance is of particular importance. At any time, tens of thousands of transactions may be taking place. The SRX Series and WXC Series appliances provide reliable and secure connectivity, high availability (HA) of applications, identity-based access control, application optimization, and detailed reporting capabilities. Security of applications, users, and data is achieved without taking a performance hit for full scalability at all services branch facilities.

The innovation focused branch generally has more extensive and stringent requirements. Typically, this type of location requires heterogeneous audience support of converged applications in addition to support for collaborative tools, VoIP, and varied access points. In some cases, Web-based traffic is backhauled to headquarters, while in other cases it is not. The EX Series with its Virtual Chassis technology helps simplify design and optimize application performance. The SRX Series provides the headroom required to scale up, as applications become more complex yet still need to be secure without having to suffer from the typical security performance trade-offs. Because of the increased complexity of the innovation focused branch, Junos OS, in conjunction with Juniper Networks Network and Security Manager, provides the management and operations consistency of operations while reducing TCO. The result is reliable wired and wireless connectivity, HA, high performance, traffic segmentation, security, load sharing, identity-based access control, quality of service (QoS), security, and WAN optimization—while at the same time significantly lowering costs.

Solution Matrix Elements

The aforementioned gateways are examples of some of the more common branch scenarios, but they are not the only ones. Juniper Networks Distributed Enterprise Solutions offer you the flexibility and open platform to deploy parts of the solution and add on as needs change. With the ability of the solution elements to complement each other and support a multi-vendor environment, Juniper Networks delivers a true solutions-based approach without the typical vendor lock-in found in other “solutions.” The solution elements that make up Juniper Networks Distributed Enterprise Solutions are the following:

	SRX SERIES	AX SERIES	EX2200, EX3200, EX4200	SSG SERIES	J SERIES	CX SERIES	M SERIES
Connect							
Switching	✓		✓	✓	✓		
Routing	✓		✓	✓	✓		✓
Wireless LAN	✓	✓		✓			
Wireless WAN	✓					✓	
Secure							
Internal threats	✓		✓	✓	✓		✓
External threats	✓			✓	✓		
Manage							
NSM/ STRM Series	✓	✓	✓	✓	✓		
Junos OS	✓	✓	✓		✓		✓

Summary – Demand More From Your Network

The opportunities presented as a result of the distributed enterprise model are substantial, but it is not without risk. Juniper’s solutions provide a consistent, high-performance foundation to meet the unique infrastructure challenges of high-value distributed enterprises. Your business should not be dictated by the limitations of your network. Juniper Networks Distributed Enterprise Solutions lowers cost and complexity by delivering consistent high-performance connectivity, security, and management services across all workforce centers regardless of size or location. Businesses experience the full productivity of their distributed high-value workforce by speeding innovation by improving employee relationships and productivity, enhancing client satisfaction and trust with high-quality access to essential data and applications and by attracting and retaining customers with trusted and available network-enabled services.

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

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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