

JUNIPER NETWORKS HIGH-PERFORMANCE NETWORKING FOR BRANCH OFFICES OF FINANCIAL SERVICES INSTITUTIONS

Building the FSI “Thin Branch”

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Executive Summary

In the late 1990s, the branch office was considered by some to be all but obsolete. Closures were widespread and the only thing required to transform retail banking into a largely online affair, it seemed, was greater availability of high-bandwidth connectivity for users.

Today, we know that this prediction of the future simply wasn't correct. The branch office remains as important and viable a channel to market as ever. And while online banking has certainly gone from strength to strength, the pressure today for cost-efficiency, greater regulatory compliance and better customer service is equally placed on modernizing the branch office environment.

The requirement now is for a centralized, consolidated IT architecture that connects business processes across branches to support new ways of working and greater customer focus. This means an end to the costly proliferation of discrete equipment and devices within the individual branch and the introduction of new applications based around ubiquitous Internet technologies.

This is Juniper Networks® vision of the "thin" branch: where individual offices cease to be outlying nodes and become flexible, intelligent parts of the network backed by the resources of the whole enterprise.

However, it's a vision with a catch. As the IDC recently commented, traditional converged branch network equipment has its own issues to address before it can claim to be the solution that branch offices have been looking for. This paper looks at overcoming the equipment gap: making the thin branch environment not just an opportunity but something tangible that can be secured through high-performance networking technology from Juniper Networks.

The Trouble with the Traditional Branch

The problem with branch offices today is that they have become independent islands of IT. This is the culmination of many years of incremental addition, beginning at a time when the operational overhead of IT and communications at the branch level simply couldn't have been predicted.

The Evolution of Branch IT

The traditional model of the branch was developed long ago. In order to better serve a distributed clientele, financial services institutions (FSIs) adopted a strategy of using branch offices to distribute their operations. Each branch was a dedicated, permanent facility with all of the attendant operational concerns and costs of an independent entity. The variety of services offered in each branch depended on the services offered by the individual FSI but, generally speaking, remote branches followed the same basic architecture.

As technology advanced to include software applications, each branch would house the infrastructure it required to operate. These applications included financial applications as well as business productivity applications such as ERP, email and file servers. In effect, each branch became its own independent "island" of IT within the banking infrastructure, resulting in significant replication and proliferation across the FSI at large.

But the complexity of the branch office infrastructure hasn't stopped there. Under the traditional model, discrete infrastructures for voice communications have also been required at each location. This often entails each branch maintaining its own PBX, or the FSI purchasing a service from a telephone company. Whatever the case, each branch requires a separate, dedicated telephone network that typically predates any additional data network.

Finally, with the advent of new service offerings like Automatic Teller Machines (ATMs), many branches installed another network to handle the traffic and transactions these machines generated.

The result is that branch office IT has become massively inefficient and a difficult challenge to manage, particularly in terms of regulatory compliance. Even more worrisome, the complexity has in many cases prevented the evolution of new and better ways of working. This poses a serious risk to the competitive advantage of any FSI today.

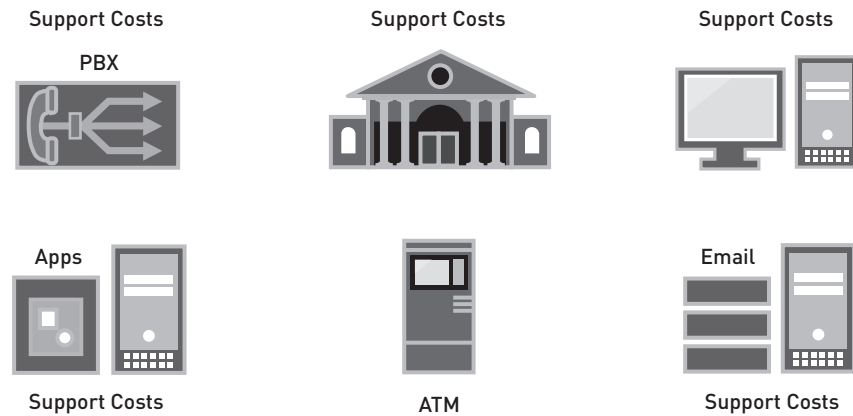


Figure 1: The traditional branch

The Challenge for Today

The thin branch model is an important opportunity for FSIs to take back control of their distributed operations. It reduces costs and eases compliance by reducing the amount of applications, devices and equipment that each branch requires. At the same time, it increases the ability of a branch office to be flexible and responsive to change.

Transformation to the Thin Branch

In recent years, a confluence of events combined to drive FSIs to revisit their approach to branch office infrastructure. Competition for acquiring and maintaining customers has led to the development of new services combined with the need to increase service responsiveness. Customers have become used to accessing information and services from a variety of channels: telephone, Internet, ATMs and in person. At the same time, FSIs have had to increase their own flexibility for meeting customer demands.

“Banks today are reinvigorating their business by making the branch a value center that offers a broad range of customer services. It is important to consider the impact these new services may have on IT infrastructure.”

– Don Free, Financial Industry Analyst, Gartner Group

This has led to fundamental changes in remote branches. Where branches were typically dedicated facilities, they now appear within the confines of other businesses such as hospitals and supermarkets. ATM functionality includes support for broader services and they too appear in locations further afield, like airport kiosks and even mobile branches.

In addition, FSI IT managers find themselves faced with additional business drivers that continue to impact strategic decisions. These include increasing regulatory compliance and meeting cost-control expectations.

For all of these issues, successful strategies increasingly mean resource centralization and consolidation.

Securing and managing data for compliance purposes, for example, is greatly simplified by removing resources from branches and placing them in the data center. Equally, the consolidation of servers, storage and other elements of the IT infrastructure to the data center reduces the capital expenditure associated with new branch development. And managing these resources centrally releases a significant portion of operating costs.

Coinciding with this trend has been a wave of technological innovations that have made such “slimming down” possible. The development and adoption of IP telephony, for instance, enables organizations to consolidate voice and data networks into one network that is easier to manage and cheaper to own. Indeed, the flexibility to initiate, move and close branch offices while controlling costs and increasing productivity has made IP telephony an attractive solution for FSIs.

This combination of maturing technology and immediate business demand has generated momentum for large-scale branch renewal projects—with applications and data being centralized, and the infrastructure supporting them being consolidated. Under these schemes, existing applications are being replaced or redesigned (so as to leverage IP protocols and enable central management at the data center). Application, email and database servers

are migrating from the branch to the data center. Voice applications like PBXs are similarly in the process of being relocated. And voice and data networks are consolidating to simplify network deployment and management, as well as to enhance disaster recovery and business continuity efforts.

The culmination of these efforts will be what Juniper Networks is calling the thin branch environment. It is a vision of a new era of significantly fewer applications and network resources in the branch, and with it comes an attendant increase in flexibility, strategic agility and cost-effectiveness.

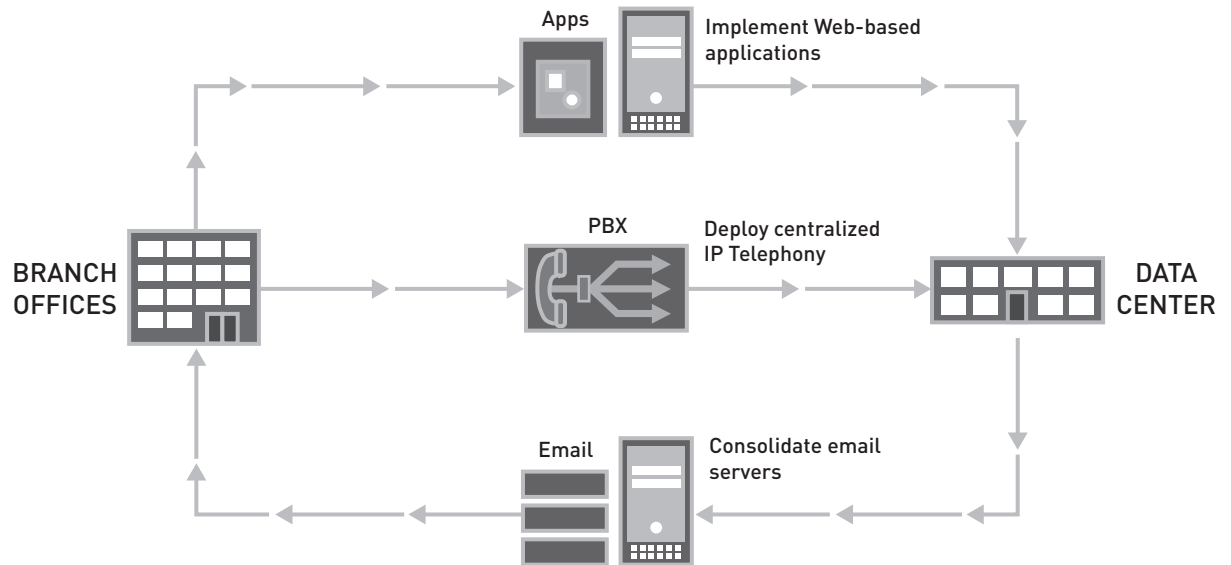


Figure 2: The thin branch

Overcoming the Barriers

Seizing the opportunity of the thin branch means overcoming a series of challenges. The greatest of these surrounds the branch network, which must now provide greater performance, security and availability in light of centralized and increasingly latency-sensitive applications.

“The Juniper firewall is solid as a rock,”

– Mark Price, Information Security Consultant, Commerce Bank

Deploying the Thin Branch Today

While societal, economic, regulatory and technological factors have led FSIs to renew branch offices, implementing changes to the network infrastructure is no trivial task. The centralization and consolidation of applications and resources requires highly available and high-performance network infrastructures. Any network downtime or degradation of service can result in lost productivity, lost revenue generation and a poor customer experience.

Some examples of the performance and availability challenges introduced by centralization include:

- HTTP Web traffic generating 10 times the traffic of existing applications
- Email and server centralization creating latency issues
- IP telephony producing extra traffic
- High quality voice demanding low latency

Additionally, along with the widespread adoption of new technologies, there has been an increase in security threats to information and resources. These threats can incapacitate businesses, violate regulatory requirements, and significantly damage a brand in the eyes of customers.

Some examples of security challenges include:

- Intrusion attempts that target branches because they are perceived as weak points in the network
- Attacks originating from within and from outside the network
- The proliferation of viruses and worms that enter via email, disks or on computers that have been migrated out of the branch environment

Finally, the move towards centralization has had a significant effect on data center technologies and infrastructures. In order to enable access to existing applications over the WAN, applications are moving to Web-based technologies. This has resulted in a proliferation of devices—both the devices “front ending” the server farm as well as Web, application and database servers.

Some examples of these data center challenges include:

- Users requiring access to all tiers of infrastructure in the data center to ensure transaction completion
- Web and application servers becoming more vulnerable to attack
- Page download times needing to be acceptable for both local users—co-located with the data center—and remote users in branch offices
- Managing the infrastructure across the organization as a whole

Solutions for Thin Branches

Juniper Networks offers an array of solutions to help FSIs make the thin branch a reality in their operation. Using the solutions described below, FSIs can increase the flexibility and productivity of their branches, while reducing total cost of ownership and simplifying regulatory compliance processes.

Application Performance: LAN-Like Performance Over the WAN

When it comes to ensuring the performance of business applications at the thin branch, Juniper Networks believes in delivering LAN-like performance over the WAN. This means that branch users should obtain the same experience they would enjoy if the newly centralized applications were still locally hosted.

This is exactly what is provided with Juniper Networks WAN application acceleration platforms. Significantly increasing the performance of financial applications, email, document imaging transfers, file sharing and other business activities, Juniper Networks WXC Series Application Acceleration Platforms deliver a combination of capabilities that increase the effective throughput of existing WAN links several-fold while overcoming network latency and contention.

These include:

- Advanced compression
- Sequence caching
- Packet acceleration
- Bandwidth management and traffic shaping
- Path optimization
- Common Internet File System (CIFS) acceleration

The result is the ability to effectively deploy new technologies—like IP Telephony—and remove resources from the branch like Exchange and file servers to increase effectiveness and reduce capital and operational expenditures. Regulatory requirements like Check 21 are also more easily met thanks to higher performing and more intelligent network infrastructures.

“With the opportunity for new deployments, so come challenges. While branch offices are undergoing a transformation in terms of network usage, IT/network managers are faced with several new challenges.”

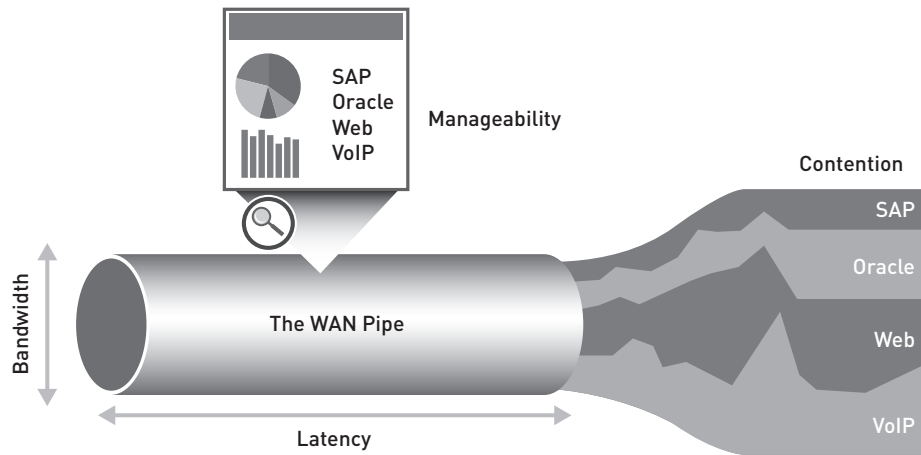


Figure 3: WAN acceleration solutions

Through deploying Juniper Networks firewall/IPsec VPN solutions at the data center and at branches, FSIs can enhance security, performance and regulatory compliance while decreasing costs across the entire organization.

Securing critical assets, ensuring data integrity and protecting customer privacy are obviously critical activities for FSIs. Failure to adequately secure stored and transmitted data can lead to significant loss of revenue, brand damage, exposure to serious regulatory non-compliance penalties and worse. Accordingly, as the sophistication and frequency of network threats have increased, so have the number of solutions aimed at mitigating attacks. For organizations interested in reducing the number of devices deployed and managed at branches, the proliferation of security devices represents an operational challenge. For this reason, Juniper Networks offers a broad range of security solutions that combine intelligence and performance, enabling FSIs to increase security while consolidating devices.

For smaller branch offices and branch alternatives like ATMs, Juniper Networks offers the SSG5 or SSG20 Secure Services Gateway integrated security solutions. With these, FSIs can deploy firewall, IPsec VPN, antivirus, intrusion detection and prevention, denial of service mitigation and Web filtering functionality all in a single device. Juniper Networks SSG Series Secure Services Gateways also support a variety of routing protocols and optional wireless capabilities. Despite the small size of the device, the SSG Series provides enterprise-class security solutions supporting:

- Full redundancy
- Sub-second firewall
- VPN tunnel failover
- Anti-spyware
- Anti-phishing

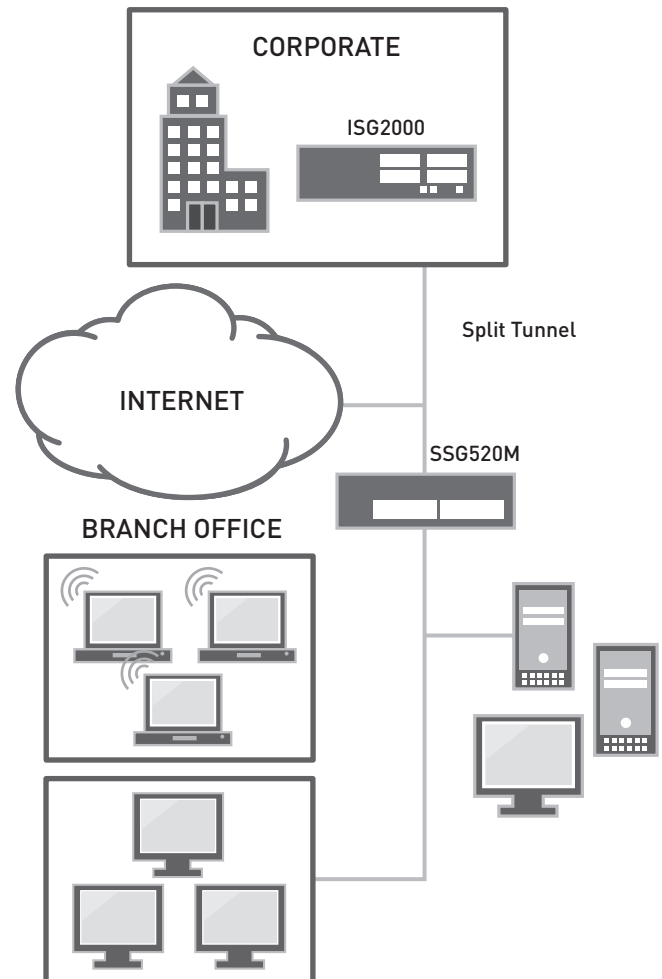


Figure 4: Corporate and branch office locations served by Juniper Networks security solutions

For larger branches, Juniper Networks SSG300 line or SSG500 line provides the same advanced features as the SSG5 or SSG20 but with increased throughput and scalability. All SSG Series devices support advanced virtual routing features that enable FSIs to consolidate security resources by increasing interface density without additional hardware expenditures. The result is lower policy creation costs, better containment of unauthorized users and attacks, and simplified VPN management.

All Juniper Networks integrated security solutions deploy the same intelligent, resilient operating system running on purpose-built network security devices. Juniper also offers the Juniper Networks Network and Security Manager (NSM) to simplify the deployment and management of security devices across the organization—from one central point—further facilitating resource centralization and consolidation efforts.

How Thin is Thin?

The thin branch is categorized as having limited IT infrastructure at the branch location. Because the size of branch locations can vary, thin branch specifications vary accordingly. Thin branches range from having no local applications to branches where some applications still reside at the branch, but data is centralized. Some branches consist of dozens or hundreds of people, while others may be nothing more than an ATM machine or kiosk. Whatever the size of the branch, Juniper Networks offers an array of solutions that help FSIs reduce the IT footprint of each location relative to other similarly-sized locations.

Conclusion

For many IT managers, tackling proliferation in the branch isn't just about overall cost-savings, compliance and business agility. Growing usage of multimedia communications and other maturing applications has made branch office networks increasingly complex and challenging to manage on a day-to-day basis.

Networking equipment must, therefore, not only meet all the requirements for thin branch networking but, at the same time, be simple for easy administration and management. Equally, there should be reliability and scalability enough to support the further adoption and evolution of applications that are latency-sensitive and place high demands on network resources.

Many of the products currently on the market for branch office networks fall short of meeting these needs. However, products exist within the Juniper Networks portfolio that satisfy these criteria, making Juniper the vendor of choice. These branch office solutions represent an important opportunity that any manager of a branch office network should know about when undergoing renewal plans and network upgrades. The Juniper Networks portfolio delivers highly available, secure and predictable performance along with the operational stability and ease of use that businesses need to be agile and respond to changing market environments.

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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