

# ACCELERATE APPLICATION DELIVERY FOR YOUR CUSTOMERS

## Improve Productivity and Reduce WAN Link Latency by Deploying Juniper’s WAN Optimization Platforms

### Challenge

Lack of differentiation between service provider offerings has caused telecom services to be viewed as a mere commodity.

### Solution

Juniper Networks WXC Series Application Acceleration Platforms provide a service provider-grade solution for managed application acceleration services over the wide area.

### Benefits

- Increased revenue, decreased customer churn, and increased competitive differentiation
- Closer customer engagement through more valued application-level services for the end user
- Enabling centralization, simplifying regulatory compliance
- Providing near-LAN application performance, mitigating delay and bandwidth limitations of the WAN

The Basel II framework of standards regulating how financial institutions must manage their capital reserves in relation to their level of risk is to be widely adopted in 2008. One of the key implications of Basel II is that financial institutions can reduce their capital reserve requirements by reducing their risks, making this capital available for profit generating activities. Organizations must consider and implement multiple strategies to mitigate different kinds of risk while controlling compliance costs without negatively impacting profitability and competitiveness. Mitigating operational risk will be particularly challenging for many organizations, and will require input and leadership from IT management.

Juniper Networks® can help IT managers address operational risks with solutions designed to maximize uptime, enhance security and improve network and application performance. Already widely adopted in financial institutions globally because of superior operational stability and advanced functionality, Juniper solutions deliver the high-performance network infrastructure needed by high-performance businesses to enable the development and deployment of products and services that result in sustained competitive advantage. This document outlines how Juniper can help FSIs improve their operational risk, and thereby influence capital reserve.

### The Challenge

Lack of differentiation between service providers in their ability to offer unique customer solutions has caused telecom services to be viewed as a commodity rather than a specialized, value-added market. It is now extremely easy to switch providers, and the value of a service is increasingly measured on no other basis than its cost. Against this backdrop, service providers are continually looking to develop service propositions that elevate the provider beyond that of a commodity broker, towards a trusted customer advisor and business partner offering services that improve the business performance of the enterprise.

The challenge for the provider is to identify and deliver application-centric services that can be measured by the enterprise in terms of their application impact and for which enterprise customers pay a premium. Services that can deliver application performance improvements are in the forefront of such campaigns.

### The Juniper Networks Application Acceleration Service Solution

Juniper Networks WXC Series Application Acceleration Platforms deliver on all areas that affect application performance with a central management capability ideal for service provider deployments. The WXC Series platforms provide a comprehensive and direct solution to application acceleration requirements—offering a single point-of-service deployment and control for issues such as bandwidth, contention, application visibility, and latency.

Juniper Networks is uniquely able to deliver on all four of these areas in a single platform, based on the WXC Series, which meets the stringent requirements of service providers.

## The Business Case for Accelerated Application Delivery

The ultimate goal of any enterprise network infrastructure is to deliver applications effectively to users. Continuous performance improvements in PCs and LAN infrastructure have made it easy to enable effective application delivery within a building or campus. But maintaining an acceptable level of application performance across the WAN still proves a consistent challenge for many organizations, and it's one that they are loath to address by themselves.

Service providers have a clear opportunity to help, and many companies are already looking to them for assistance. But while there is a clear demand to be fulfilled, this is not a challenge bandwidth alone can solve. Service providers need to identify the most advantageous products to deliver true application acceleration services.

Smart telcos are already recognizing the application-based benefits Juniper Networks is uniquely qualified to offer in a single platform that can provide a complete suite of services to address application acceleration. Backed by our heritage in carrier products and support, we are the first-choice partner for tackling all of the WAN-based factors that contribute to your customers' poor application performance.

## The Network-Application Divide

Within enterprise IT, there has classically been a divide between those concerned with the running of the WAN and those developing and procuring applications for business use. As a result, applications are not typically optimized for the WAN and, equally, the network is relatively inflexible to the demands of enterprise software.

In the past, this was not a concern. It simply didn't pay to overcome the lack of IT cohesion. But over time, computing demands have become ever more complex, fueled by the knowledge economy. As organizations have added more demanding functionality and applications to drive their operations, they have also responded with new inter-site network connectivity to tie employees and processes into the business—no matter how far their location may be. The result is that the network-application divide has widened significantly, while at the same time, the business reliance on application and network cooperation has reached an all-time high.

This creates an important opportunity for service providers to bridge the gap. In addition to the revenue generated, it enables them to become increasingly visible strategic partners for customers, and engender greater dependency and loyalty.

## Bridging the Divide with Application Acceleration

Today's enterprise needs advanced traffic-processing techniques designed to bridge the network-application divide and provide optimal performance.

The redesign of applications to make them less sensitive to the limitations in the WAN environment is often impractical. Simply improving one factor of the network, such as the available bandwidth, does not result in notable improvement for users.

Instead, what is required is true application acceleration. This addresses the four areas of the WAN that have slowed application performance for decades:

1. Application performance visibility
2. Latency
3. Application contention
4. Bandwidth limitations

## Seizing the Opportunity

Poor application performance costs organizations millions of dollars a year in employee productivity leading to measurable and serious effects on organizations. Most companies lack the resources needed to solve application performance problems. This presents a key opportunity for service providers that can work strategically with these organizations to help them overcome their application performance issues.

The service provider, as bandwidth provider, is ideally suited to offer these services because the application of the technology is intimately related to the bandwidth service. For instance, many service providers offer VPNs in addition to their core services, and any WAN optimization must take into account such services. A carrier that bundles application acceleration services into the bandwidth offering provides an elegant and effective solution for organizations looking for outsourced optimization services—something Juniper Networks has learned from direct end-customer feedback.

As a result, there is nobody better qualified to consult and provide services to resolve these issues than the suppliers of WANs themselves.

## WAN Optimization is a Market Waiting to be Fulfilled

CIOs of major organizations have recognized the need to improve WAN communications to speed applications. They now cite WAN optimization as their fourth highest priority project, behind only security and storage initiatives.

Table 1: CIO Project Prioritization on a Scale of 1 to 5 (Merrill Lynch Study)

NETWORK SPENDING PLANS	AVERAGE SCORE (OUT OF 5)
Application security	3.37
Storage	3.33
Perimeter security	3.23
<b>WAN optimization</b>	<b>2.99</b>
L2 Ethernet switches	2.94
L3 Ethernet switches	2.92
VoIP	2.91
Enterprise edge routers	2.90
L4-7 Ethernet switches	2.82
Legacy voice	2.55

## Become a Strategic Player

Due to available resources, many organizations will look externally to buy optimization services rather than try to optimize their network themselves. This could range from buying application acceleration as something that is bundled into transport service offerings, to working closely with a service provider for fully managed application acceleration services.

### BENEFITS TO THE PROVIDER

- Incremental and recurring revenue opportunity with professional services and managed services
- Closer customer engagement through more valued application-level services
- Increased competitive differentiation
- Increased revenue per customer
- Reduced customer churn
- Reduced price and margin pressure on bandwidth services
- Better pipe utilization and, thereby, greater bandwidth demand

## Accelerating Application Delivery

Many companies offer products that can be used in the context of application acceleration over the WAN. However, most of these products are aimed at overcoming the issue of capacity, that is, the significant drop in bandwidth as traffic moves from the LAN to the WAN environment. This is something service providers choose to remedy in a much simpler way—by selling more bandwidth. The reality is that while making better use of bandwidth can improve WAN performance, there are actually four solution areas that must be covered to truly optimize application delivery over the WAN.

These are:

1. Reducing the impact of latency to accelerate payloads
2. Enhancing traffic management and application control, including quality of service (QoS) and routing
3. Gaining visibility of traffic profiles
4. Utilizing compression and caching of traffic

Juniper Networks is uniquely able to deliver on all four of these areas in a single platform based on its WX Series Framework. Our products offer a single point-of-service deployment and control, making them perfect for the requirements of a service provider.

Latency often slows application performance even when there is plenty of bandwidth available. Gartner refers to it as “the silent killer of application performance” in a report of the same name. Moreover, latency is a barrier to service providers selling more bandwidth because it prevents customers from advancing their use of the pipe. Consequently, it is in the interest of both service providers and their customers alike to overcome the latency issue and enable true application acceleration.

## Drivers for Application Acceleration

Delivering on all areas that affect application performance, Juniper Networks is the vendor best positioned to provide the technology to truly optimize application delivery.

Juniper Networks WXC Series Application Acceleration Platforms provide the most comprehensive and direct solution to the requirements of application acceleration today—tackling the issues of bandwidth, contention, application visibility, and latency head-on with a single point-of-service deployment and control.

### DRIVERS FOR APPLICATION ACCELERATION

- Increased server centralization
- Timely database backup
- Increasing prevalence of packaged software
- New performance demands
- New distributed applications for the WAN
- Improved user experience

As a result, Juniper Networks is ideally placed to help enhance customer networks, complement services, and assist in advancing customer relationships. In other words, Juniper Networks can help you make application acceleration a strategic service differentiator and a commercial success.

## Features and Benefits of WXC Series Solutions

### JUNIPER NETWORKS: THE RIGHT PLATFORM

Juniper Networks offers the best platform for application acceleration because it is:

- **Complete**—Competing platforms tend to focus on only a piece of the WAN problem, but Juniper Networks provides a holistic answer covering everything from chatty protocols and QoS to traffic visibility and latency.
- **Integrated**—Because of Juniper's holistic approach, individual WXC Series products adjust to each other's behavior and that of other devices on the network.
- **Fully mature**—Juniper Networks has been pioneering application acceleration for a long time. This area is too critical to leave to a vendor's v1.0 release.
- **Easy to use**—Juniper Networks WXC Series platforms provide essential transparency with existing network equipment and client and server devices.

- **Flexible**—Because an organization uses multiple WAN technologies, all running at different speeds, Juniper Networks WXC Series platforms allow initial rollout to only a few key sites as well as wide-scale deployment.
- **Manageable**—Juniper Networks WX Central Management System software provides a single point-of-service deployment that scales to thousands of WXC Series platforms. Juniper Networks can also virtualize the management platform to provide multi-tenant solutions, where customers can receive a virtual view and reporting for their network.
- **Automated**—The WX CMS software enables large, pervasive deployments of WXC Series platforms by automating management tasks. Tasks can be scheduled for an entire community, service level, or device group.

## Solution Components

Juniper Networks WXC Series Application Acceleration Platforms, members of a larger family of WAN optimization solutions from Juniper Networks, provide distributed enterprises with a cost-effective solution for accelerating mission-critical business applications—as well as voice, video and terminal services—over WANs, maximizing WAN investments and improving application response times for branch-office users.

The WXC Series improves application performance over the WAN by recognizing and eliminating redundant transmissions, accelerating TCP- and application-specific protocols, prioritizing and allocating access to bandwidth, and ensuring high-application availability at sites with multiple WAN links. Onboard hard drives that provide the foundation for the Network Sequence Caching feature enable the WXC Series to store particularly large data patterns over long periods of time—allowing the devices to identify and remove repetitive traffic separated by gigabytes of data or last seen days or even weeks earlier, producing up to a 100-fold increase in effective WAN capacity.

The TCP-, application-, and protocol-specific acceleration features help overcome the impacts of latency, dramatically improving response times for remote and branch-office users accessing centralized applications over the WAN. Quality-of-service (QoS) and bandwidth management tools allow IT to prioritize application traffic, ensuring mission-critical transactions always have sufficient bandwidth while preventing less important applications from consuming an inordinate amount of valuable WAN resources.

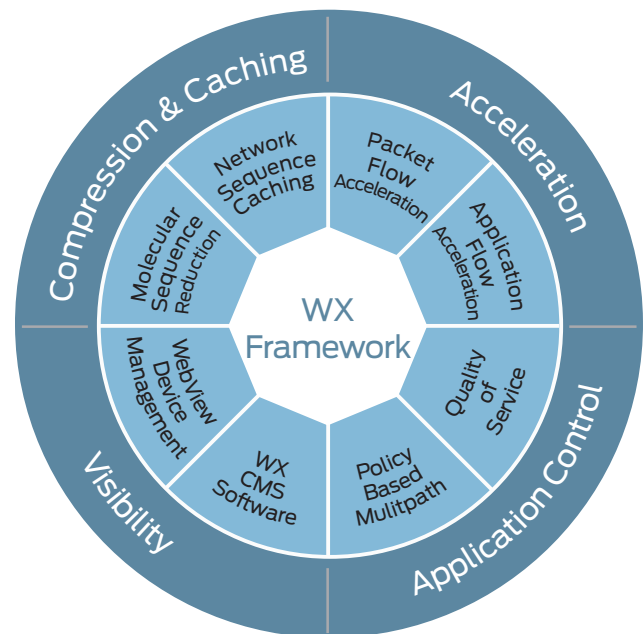


Figure 1: Juniper Networks WX Series Framework provides a complete solution to application performance troubles over the WAN

The Juniper Networks WX Client is the newest member of Juniper's WAN optimization product family. WX Client is a Windows-based (Windows 2000 and Windows XP) software for mobile end users that improves application response times by providing LAN-like performance for applications no matter where end users are located. Installed on the end user's desktop PC or laptop, the WX Client works transparently to improve application response times by applying disk-based caching, compression, and protocol acceleration techniques to WAN data traffic. End users are not required to make any changes to their Windows environment or processes, and can continue working as before, while enjoying much faster access to applications.

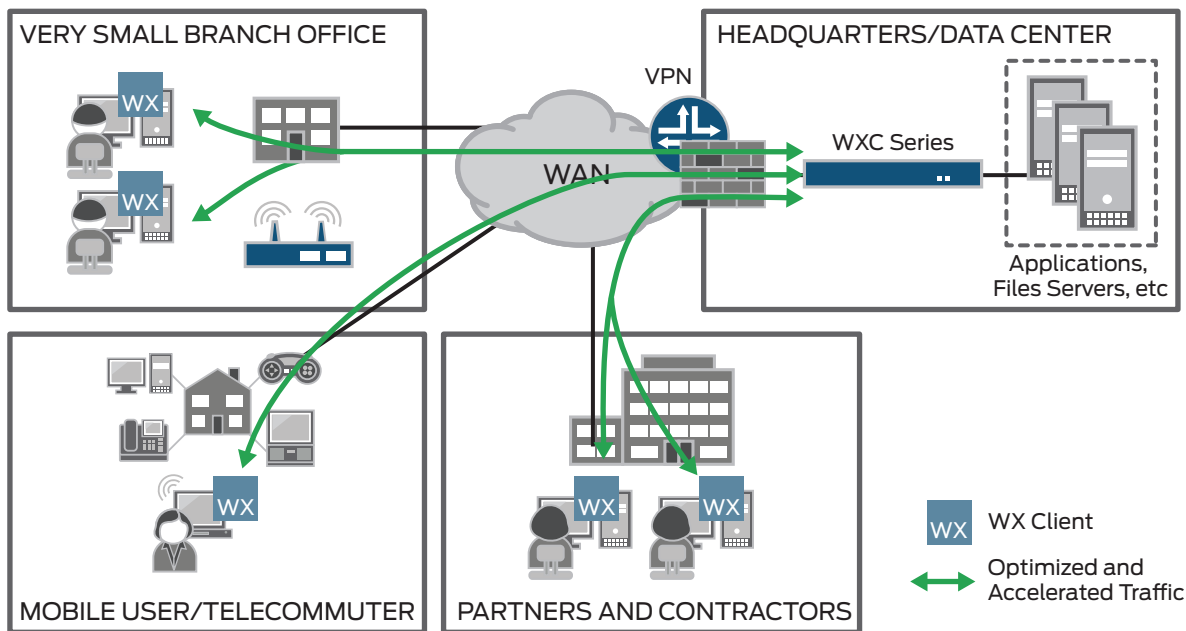


Figure 1: WX Client deployment scenarios

## Engage Your Customers By Accelerating Mission-Critical Applications

A partner for leading application acceleration services, Juniper Networks is a complete solutions partner—able to assist any service provider looking to implement WAN optimization services.

Juniper Networks seeks to solve the whole problem of application performance over the WAN, not just discrete elements of it. This has created a unique and complete approach to WAN optimization that solves the full scope of performance issues.

As a partner, we have a rich history of working with service providers, providing platforms with the carrier-grade stability and performance demanded. In fact, we are highly acclaimed as a credible and dependable vendor in terms of both partnership support and strategic collaboration.

Our WAN optimization platforms are easy to use and simple to integrate with your existing infrastructure—as well as that of your customers—requiring no changes to clients, servers, or routers. This is supported by automated deployment and operation of service features within our WXC Series product families.

Lastly, our application acceleration proposition is also flexible, enabling multiple service levels and definitions as well as incremental revenue and pricing structures, meaning it provides the ideal building blocks for creating services tailored to both your requirements and those of your customers.

## Next Steps

For a flexible application acceleration solution from a complete solution partner, contact your local Juniper Networks representative at 1-866-298-6428.

## 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](http://www.juniper.net).

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3510210-003-EN April 2010

Printed on recycled paper