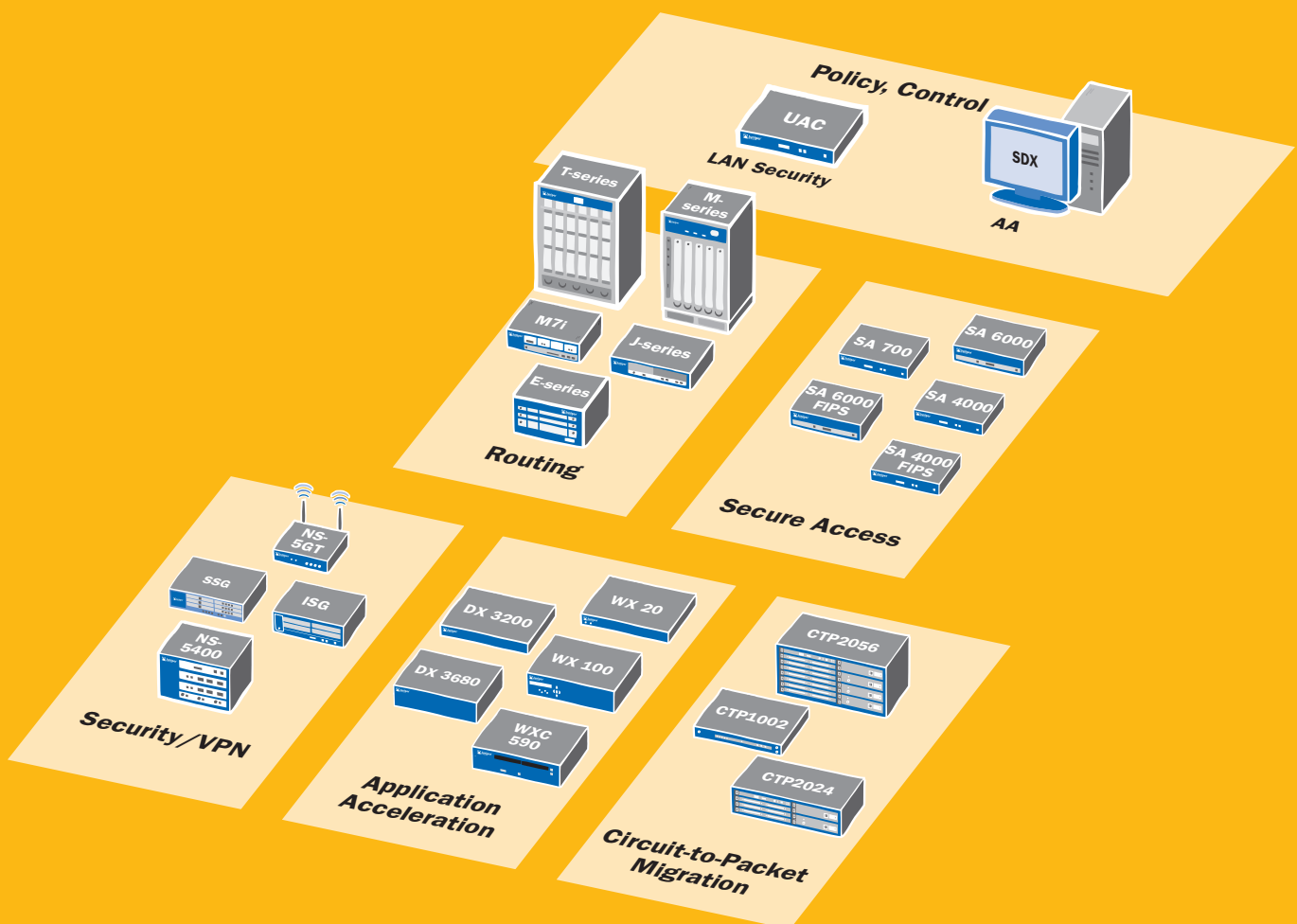


# Juniper Networks Solution Portfolio for Public Sector Organizations

Providing a Highly Available and Secure  
Infrastructure for the Public Sector



## Solution Overview

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A significant part of a country's economy entails providing government services to support its citizens. While the definition can vary from country to country, this portion of the economy is known as the Public Sector. It is generally comprised of three categories:

- **Government** – Government can be divided into two sub-categories: central governments and local governments. Central governments are the national governments, usually with headquarters in a capital city and offices throughout the country. Local governments are structures at the state, province, county, city, or town level. Responsibilities between levels of government vary widely depending on the country. Typical services in the government category could include public administration, police, military, justice, transportation, and utilities.
- **Research and Education** – This category is composed of major research facilities that fall under some department within the government of a country. Research can be solely scientific, or focused on a particular application such as defense. Education usually comprises elementary and high schools, as well as higher education institutions such as community colleges, technical colleges, and universities.
- **Healthcare** – Many countries provide healthcare services to their citizens using public funds. Depending on the country, publicly funded healthcare providers could include hospitals, medical centers, doctor's offices, medical laboratories, long-term care facilities, and perhaps dentistry and alternative health practitioners.

## Challenges

Governmental organizations worldwide are facing several challenges as administrative, executive, judicial, and military bodies continue to evolve into an electronic work environment. Fueled by the rapid adoption of electronic communication by taxpayers and citizens, paperwork-reduction mandates, and requirements to handle increased workloads with fewer personnel governments continue to explore new approaches to electronic information management.

Any discussion of the challenges governments face today must begin with demographics. Citizens are aging in most developed countries, shrinking the tax base as more people retire. These same citizens have increasing expectations, and put more of a strain on certain public sector categories such as healthcare. In developing countries, where infrastructure is weaker or may not extend to all citizens, improving Public Sector services is a means to improve citizen satisfaction. As a result, these countries may be more receptive to innovative, technology-driven solutions.

Healthcare organizations are stressed by having to do more with less. And, in many countries, they are facing increasing regulatory requirements. Both developing and developed countries suffer from a shortage of qualified healthcare staff. Technology is a way to use resources more efficiently. Healthcare institutions are seeking new technologies to help expand the capabilities of applications that support critical functions such as secure remote access, on-line administration, electronic medical records, remote diagnosis, and distance learning.

Government departments are struggling to improve citizen services while controlling costs. At the same time, government agencies need to fulfill political and public policy programs, such as continuity of operations during disasters, e-government/e-citizen initiatives, and public-private partnerships.

In the developed world, many education systems face declining enrollments due to aging populations. Post-secondary institutions in developed countries are trying to attract new students by expanding into new geographies via distance learning or outreach centers outside of their campus locations. Attracting and keeping faculty is an issue, as research grants become harder to get.

In developing countries, much of the population is young, resulting in more students than facilities. Inexpensive information technology (IT) solutions are being used to improve curriculum access, teacher training, and administrative functions.

These challenges place increasing demands on Public Sector IT infrastructure to be:

- Highly reliable, available, and secure
- Optimized for application performance, regardless of user location
- Efficiently controlled and managed

## Trends

Public Sector IT spending is growing in both developed and developing nations. Worldwide IT spending in the healthcare industry is forecast to grow faster than any other industry, by 7.4 percent annually to 2009, according to IDC<sup>1</sup>. IDC predicts that IT spending worldwide by governments will grow by 6.8 percent a year through 2009, compared to an average of 5.7 percent from all industries, while research and education will grow more slowly at 4.1 percent a year. Much of this IT spending is going into supporting:

- Planning for business continuity
- Ensuring network and data security
- Balancing business collaboration and user access with the need for security
- Optimizing existing infrastructure
- Supporting secure remote access
- Enabling e-government/e-citizen initiatives
- Maintaining the privacy of citizen information

### Isle of Wight College, England

#### Situation:

While working off-campus at outreach centers, teachers required flexible yet secure remote access to email, library resources, timetabling tools, student information, and posted student assignments.

#### Solution:

Juniper Networks SSL VPN solutions.

#### Results:

Clientless solution improved productivity for teachers working remotely and is easy for them to use. The cost-effective solution is also compliant with the Data Protection Act.

#### Customer quote:

"The Juniper Networks solution is exactly what the Isle of Wright needs, at the right price. It is flexible and easily scales, allowing us to provide remote access to more staff members without incurring significant capital or management overhead costs."

**Rosie Quelch, Isle of Wright College, Networks Manager**

### Internet2, United States

#### Situation:

Internet2 is a nationwide research and education consortium of over 225 universities and research facilities. The consortium needed a highly available solution to support its high-speed backbone routing needs now and in the future.

#### Solution:

Juniper Networks T-series Routing Nodes.

#### Results:

The Juniper Networks solution supported the consortium's need for real-time measurement services with IP multicast, wire-rate performance, and improved reliability.

#### Customer quote:

"Deploying just one version of an operating system across all routers in our network is a great advantage for Abilene. This simplicity enables engineering and operations to focus on scaling and maintaining the network. It ensures that all features are available on all platforms and simplifies network management, thus lowering our cost of operations."

Chris Heermann, Senior Network Engineer, Internet2 Engineering Group

## Juniper Networks Solution Portfolio for Public Sector

Juniper Networks is revolutionizing the economics of global information exchange for the Public Sector. Our purpose-built, high-performance IP platforms enable you to support many different services and applications, either locally or distributed over a wide area. National and local governments, research and education institutions, and healthcare providers worldwide rely on Juniper to deliver products for building networks that are tailored to the needs of their users, services, and applications. Juniper Networks innovations and highly scalable, reliable networking and security platforms deliver the best user experience with the lowest total cost of operations. With this history, Juniper provides a solution portfolio that helps you implement your networking environments with the confidence that you can solve the challenges you are experiencing.

The Juniper Networks solution portfolio for Public Sector organizations include:

- **Networking** solutions that provide the foundation for a highly available, reliable, high-performance network
- **Security** solutions that protect Public Sector organizations from threats, privacy or security breaches, and extend secure access to remote locations
- **Application acceleration** solutions that improve the performance of applications both locally and over the wide area network, while maintaining availability and security

### Networking Solutions for Data Centers, Headquarters, and Branch/Remote Office Locations

Public Sector organizations are upgrading, replacing, or installing new network infrastructure to support online government services, new remote offices, or new applications. Powered by an innovative, programmable ASIC-based architecture, and leveraging the production-hardened Juniper Networks JUNOS routing software, these networking solutions enable Public Sector agencies to operate and scale their networks economically while maintaining business continuity. Integrated routing solutions by Juniper Networks deliver high performance and reliable networking infrastructure support for many mission-critical Public Sector operations, ranging from war-time environments to state-of-the-art healthcare facilities.

**Juniper Networks T-series Core Routers** are core multi-service platforms that seamlessly transition voice, video, and data into a common network infrastructure. They scale to 10-Gbps Ethernet and 40 Gbps OC768c/STM 256 SONET SDH.

**Juniper Networks E-series Broadband Service Routing Platform** is designed for carrier-class routing, broadband subscriber management services, and IP-based edge services.

**Juniper Networks M-series Multiservice Edge Routing Platform** combines best-in-class IP/MPLS capabilities with unmatched reliability, scalability, security, and service richness. Enterprises can support new applications and services while managing costs and improving employee responsiveness.

**Juniper Networks J-series Services Routers** are extensible, flexible, voice-ready platforms that connect branch and regional offices to enterprise resources. They provide all the security and routing features branch offices need in a single, easy-to-use package.

**Circuit-to-Packet (CTP) Products** transport legacy circuit-based applications easily and reliably across IP networks, enabling organizations to reap the advantages of converged, multi-service networks.

## Security Solutions

Public Sector IT departments are tasked with protecting the confidentiality, privacy, and integrity of electronic information, preventing unauthorized access, and defending the network against attack. Widespread use of remote access and the increasingly sophisticated security attacks make this job increasingly difficult. Juniper Networks' line of industry-leading, purpose-built security solutions provide layers of defense – from the network perimeter all the way to the application level – to help secure Public Sector agencies against increasingly-malicious application-level attacks. Juniper Networks security solutions also enable citizens and employees to access Public Sector network services from a variety of locations while maintaining privacy and data security.

**Juniper Networks firewall/IPSec Virtual Private Network (VPN)** solutions protect large, distributed networks with integrated features, including stateful firewall, intrusion prevention, content filtering, antivirus, and robust enterprise routing. They are manageable by a policy-based, central management system and can scale for small to large enterprises and service providers. Juniper Networks firewall/IPSec VPN solutions offer a complete set of Unified Threat Management (UTM) security features, including stateful firewall, Intrusion Prevention System, antivirus, anti-spam and Web filtering, as well as the ability to stop spyware, trojans, malware, and other emerging attacks.

**Juniper Networks Intrusion Detection and Prevention (IDP)** solutions provide network visibility, granular control and comprehensive inline protection to stop network- and application-level attacks before they can proliferate. Juniper Network's IDP products offer unmatched insight into network protocol/application usage, day-zero security coverage, advanced reporting capabilities, and tightly integrated management features – for a complete close-loop investigation.

**Juniper Networks SSL (Secure Sockets Layer) VPN** solutions extend simple yet secure access to traveling workers, remote contractors, business partners, and clients, using only a standard Web browser. The Juniper Networks SSL VPN solution works with today's leading business applications and network elements to verify that users and their devices meet required security, privacy, and accounting policies. Using a single username and password, remote users can access email, applications, and network services. Depending on who and where they are, or what device they are using, users can be assigned certain access privileges. Using robust encryption technologies, Juniper Networks SSL VPN solutions secure user information and communications traveling between different businesses or across untrusted networks.

**Juniper Networks Unified Access Control (UAC)** solutions allow users on the Local Area Network (LAN) to easily access enterprise information without using multiple passwords, exposing the network to threats, or replacing existing infrastructure.

### Jiangxi Province, China

#### Situation:

An e-government initiative required secure and fault-tolerant connections between over a hundred government departments, while supporting the future provisioning of online services to 41 million residents.

#### Solution:

Juniper Networks M-series multiservice edge routers.

#### Results:

The redundant switching fabric, Routing Engine, and modular JUNOS operating system in Juniper Networks M-series routers provided the necessary performance, reliability, and scalability for interconnecting many government departments. Its support for a wide variety of interfaces meant that the M-series met the interconnection needs of all departments, reducing operating costs.

#### Customer quote:

“Security was naturally a significant concern for us. Before this deployment of Juniper Networks solutions, security required a lot of management. Now, the MPLS-based VPN has taken over much of that administration, removing a major burden and enabling us to concentrate on other matters.”

**Xu Yieng, Deputy Director of the Jiangxi Provincial Government Information Centre**

### State of New Mexico Taxation and Revenue

#### Situation:

Seventy geographically dispersed Department of Motor Vehicle (DMV) offices needed secure access to a statewide Internet application.

#### Solution:

Juniper Networks Application Acceleration solutions.

#### Results:

After the easiest installation ever, remote workers immediately saw a 60 percent improvement in application performance, considerably increasing their productivity considerably. Server capacity increased by 280 percent, providing immediate payback in the data center.

#### Customer quote:

“While improving performance in our data center – we’re getting performance on our 56Kbps lines equal to what we once needed T1 circuits to provide – the Juniper Networks solution also has substantially reduced application complexity and cost.”

**Ed Romero, Deputy Secretary and Chief Information Officer**

## Application Acceleration Solutions

Many Public Sector departments are consolidating their data centers and converting their client-server applications to Web applications to provide universal access to employees and reduce operational costs. However, these applications and Web services place additional strain on existing data center servers or WAN link resources, resulting in degraded application performance and poor end user response times.

To help Public Sector organizations with their server centralization and Web-enablement activities, Juniper Networks offers the industry’s most complete application acceleration solution – the data center acceleration (DX) and wide area accelerator (WX) platforms. By simultaneously targeting the data center and the WAN, Juniper delivers LAN-like application performance throughout Public Sector organizations. Juniper Networks achieves this with the DX and WX products discussed below. Juniper Networks Application Acceleration solutions optimize WAN links and server resources, allowing organizations to delay purchasing new resources even as they add new users or applications to their network.

Juniper Networks DX Application Acceleration platforms deliver a complete data center acceleration solution for Web-enabled and IP-based business applications. The DX platform greatly improves the end-user experience and solves IT budget, high-availability, and security requirements.

Juniper Networks WX Application Acceleration platforms accelerate all IP-based applications over the WAN by optimizing these WAN links and resulting in a more LAN-like experience for the remote office.

## Management Solutions

Juniper Networks offers a spectrum of management options to help Public Sector IT organizations with access to all day-to-day tasks required to maintain their network as well as a complete set of investigative tools to help provide visibility into these networks.

- **JUNOS** software offers a CLI, a J-Web management interface, and an API. The CLI is the primary method of monitoring and troubleshooting the software, routing protocols, network connectivity, and router hardware. The J-Web is a Web-based graphical user interface that provides users with simple to use tools to administer and manage J-series routers. For customers who prefer to use existing scripts and management systems, the included JUNOScript XML-based API facilitates application and script development easily and quickly.
- **Juniper Networks NetScreen-Security Manager** takes a new approach to network and security management by providing Public Sector IT departments with an easy-to-use solution that controls all aspects of the Juniper Networks firewall/VPN and IDP devices including device configuration, network settings, and security policy. Using NetScreen-Security Manager, device technicians, network administrators, and security administrators can work together to improve management efficiency and security, reduce overhead, and lower operating costs.
- **Juniper Networks WX Central Management System (WX CMS)** software is a powerful visibility and reporting tool that provides easy-to-use and extensive central configuration and monitoring capabilities for WX and WXC application acceleration platforms. The WX CMS software dramatically simplifies the configuration and management of multiple platforms deployed in geographically dispersed networks from a single location.

### Juniper Networks Solution Portfolio Summary

Juniper Networks solutions combine predictable throughput and consistent performance to help Public Sector IT organizations reduce operational costs, while enhancing reliability and ease of configuration. Public Service IT departments can now meet infrastructure, security, and performance challenges by implementing Juniper Networks products that are resilient and require minimal effort to install and maintain. From market leading SSL VPN solutions to best-in-class IP/MPLS routing capabilities, Juniper Networks solutions empower Public Sector departments with the ability to provide optimum services for their trends, from continuing business operations during emergency situations to enabling e-government initiatives and more.

## Juniper Customer Support Services

Juniper Networks provides a comprehensive and flexible portfolio of industry leading technical support, professional services, and education programs to help customers and partners realize maximum value from their network and security investments.

- Support Services provide the support that large networks demand, and let customers select from a variety of options to augment their in-house technical expertise. There are 15 Juniper Networks Global Technical Assistance Centers (JTAC) located around the world that manage customer cases 24x7x365.
- Professional Services provide customized consulting services to assist customers in planning and designing networks with maximum efficiency.
- Educational Services deliver expert education and technical certification programs to help customers build their IP network expertise through standard technical programs, Web-based courses, customized workshops, and hands on lab sessions.

## Optimizing the Public Sector Infrastructure

Public Sector organizations around the globe are working to give their customers superior services. Various government mandates and electronic initiatives are pushing Public Sector managers to embrace new technologies and business practices. A critical component of these efforts is the implementation of a networking infrastructure that is reliable, secure, and cost effective. Juniper Networks provides Public Sector customers with the capability of secure and assured communications over their IP networks. Through deployment of Juniper Networks proven solutions, Public Sector departments and agencies can now enable the highest levels of performance, availability, and security for their mission-critical business functions.

## 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).

### California State University Monterey Bay

#### Situation:

A lack of security solutions meant that University IT staff spent hours cleaning servers after network attacks.

#### Solution:

Juniper Networks firewall/VPN solutions.

#### Results:

Reduced attacks infiltrating the network by 85-90%; Cost-effective solution is easy to set up and maintain, optimizing IT resources.

#### Customer quote:

“Juniper Networks has exceeded CSU Monterey Bay’s expectations. The ease of management is just fantastic. We have already seen more benefits from the Juniper Networks implementation than anything else we have ever purchased.”

**Ron Smith, Associate Director of Information Systems & Network Services**

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