

NETWORK SIMPLICITY DELIVERS INDUSTRY-BEST USER EXPERIENCE FOR DIGITAL GOVERNMENT

As a leader in AI, Juniper delivers unprecedented reliability and security to government agencies

Challenges

Government IT organizations are forced to operate conventional networks with constrained budgets while supporting a dynamic distributed workforce and needing an architecture that delivers the best possible experience for both citizens and civil servants.

Solution

A leader in AI for IT, Juniper extends the power of artificial intelligence across wired and wireless networks across any government campus, branch, private data center, or hybrid cloud environment.

Benefits

- Delivers predictable, optimized experiences for all users across any government agency with AI-driven insight and customizable service levels
- Provides real-time wayfinding, proximity notifications, asset tracking, and other location-based services
- Simplifies network operations, increases service reliability, and frees up resources for innovation
- Safeguards against cyber threats, protecting sensitive information

Digital services that improve the user experience remain a top priority for all forms of government. Several networking pillars are foundational for enabling digital services: seamless and secure access; always-available applications; and always-on network connectivity. But is secure connectivity between users and applications good enough? Citizens want digital services to be fast, accurate, simple, and accessible anytime, from anywhere. Simply put, government constituents want a great experience, and in this new era of networking, government agencies want to deliver one.

Civil servants, focused on improving agency productivity, have similar expectations. Government IT organizations face the challenges of operating a conventional network within the constraints of a limited budget, supporting a dynamic distributed workforce and needing an architecture that enables the best possible experience for both citizens and civil servants.

To do this effectively without negatively impacting productivity, IT organizations need networks that are designed and built for agility and operational simplicity. They need modernized solutions that improve time to productivity with granular user assurances, AI-enabled operations, and automated security. This requires networks that deliver optimized network experiences for users and devices, uncompromising reliability, and inherent security, in order to efficiently address unanticipated changes such as a new dynamic hybrid workforce, a new network edge, changes to the security perimeter, organizational changes, and ongoing budget constraints.

Table 1. Digital Government Assets and Outcomes

Asset	Impact	Outcomes
Wireless and Wired Assurance	Capture granular experience data for every user	Better user experience
WAN Assurance	Provide application-based context for each user	Better user experience
Patented vBLE	Engage citizens and users; track assets	New experience use cases
AIOps + Virtual Network Assistant	Enable operational simplicity	Faster time to resolution
Risk Profiling	Provide automated cybersecurity	Speedier risk mitigation

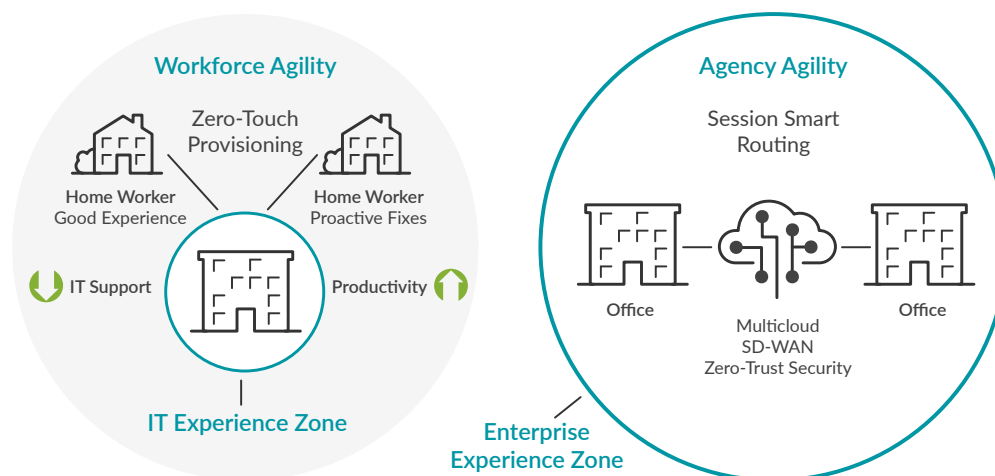


Figure 1: Workforce agility for digital government

The Challenge

For governments accelerating value-based citizen services and digital transformation, their foundational IT infrastructure needs to be resilient, adaptable, efficient, and focused on the user experience. To achieve these goals, government agencies need to:

- Anticipate a fluid remote workforce as a part of the long-term strategy.** COVID-19 has forced all forms of government to work from home, proving that a highly distributed workforce can be productive. While the ability to work remotely enhances worker safety and makes more flexible use of resources, IT operations face the challenges posed by a fluid distributed workforce, increased government productivity, and lower cost of operations that require a secure, reliable connection with important AI-driven experience insights to key applications and data.
 - Leverage private and public cloud resources as needed.** Data analytics, Software as a Service (SaaS) applications, and cloud services are essential elements in the transformation of digital government. Data volumes are growing rapidly, with AI and analytics playing a vital role in government productivity and operational efficiency. A hybrid cloud environment lets governments retain the control of a private data center and the flexibility of public cloud services. But aging enterprise data centers won't keep pace. IT needs a modern data center that can deliver applications and services across both private and public clouds quickly, efficiently, and securely.
 - Protect data at the highest levels.** Data privacy is critical and always top of mind. But today, all governments must be extra vigilant about cybersecurity. Information is extremely valuable, and as government employees
- access applications and data from more places and more devices, the risk of exposure increases. Remote workers are likely using home Internet connections over VPNs and government-issued computers. Even so, this model of highly distributed devices exposes users to new risk vectors. IT needs a network that leverages AI and connected security, automating risk profiling to detect and stop threats before disruptions occur.
- Modernize the enterprise WAN.** The enterprise network connecting all government agencies, departments, and other facilities must become simpler, more flexible, more scalable, and more secure. Traditional WANs lack the rich telemetry insights and inherent security required to adapt to the demands of digital government and the shift to the cloud. Remote work has exponentially increased VPN demands on the WAN. Limited visibility makes WAN outages difficult to troubleshoot, further prolonging negative impacts on productivity. Manual configurations are conventional. AI-driven network operations can improve user experiences for government agencies and departments, automate network operations, enhance security, and lower costs.
 - Empower IT teams to innovate.** Improving government outcomes while lowering operational costs can appear contradictory. To empower government IT leaders to deliver transformation, they need to be liberated from conventional, time-consuming infrastructure operations, freeing up resources for innovation. By automating network operations, IT teams can improve service delivery while reducing costs.

The Juniper Networks AI-Driven Network for Digital Government

Juniper® AI-Driven Enterprise enables all forms of government to deliver on their strategic technology objectives, whether increasing the productivity of a dynamic distributed workforce, simplifying operations, or elevating the user experience.

This includes agencies and departments such as Health and Human Services (HHS), Emergency Management, Workforce Management, legislative centers, public safety, courts and corrections, public utilities, transportation, and many others.

Governments around the world should rely on Juniper to do the following:

- **Deliver optimized and personalized network experiences**

everywhere: With a Juniper network driven by Mist AI™, government IT organizations can deliver exceptional performance, reliability, and scalability across wired and wireless networks. Juniper's microservices cloud architecture, integrated AI engine, and virtual assistant enable governments to deliver predictable, highly intelligent network service experiences for citizens and employees alike.

In addition to delivering the best Wi-Fi range and performance, the Juniper Series of High-Performance Access Points has a dynamic vBLE 16-element antenna array for the industry's most accurate and scalable location services. This allows governments to deliver real-time wayfinding, proximity notifications, and asset tracking directly from the access point rather than overlaying networks and technologies or relying on hundreds of battery powered beacons. Governments can now easily engage with citizens, employees, and critical capital assets to elevate experience and safety in support of streamlined operations and workflows.

Network operations are simplified with Mist AI. Juniper Mist Wi-Fi Assurance and Juniper Mist Wired Assurance replace manual troubleshooting with automated operations. And the Marvis Virtual Network Assistant provides AI-assisted troubleshooting and network performance analysis through an intuitive conversational interface, empowering IT teams to speed problem resolution.

Juniper Networks® EX Series Ethernet Switches deliver the highest level of performance and reliability for government campus and branch networks, whether for the core, aggregation, or access layer. Juniper's building-block approach to switching enables easy scalability to meet growing digital demands and protect investments.

As IT continues to support all levels of government staff working remotely, each can be assured of a better, more

secure work experience with Juniper Mist Edge. Mist Edge automates risk profiling to securely extend the corporate network, empowering governments to work from home while protecting against at-home security risks.

Governments can improve digital outcomes and reduce costs with AI-Driven Networking:

- **Deliver applications and workloads from cloud-ready data centers:**

With Juniper as the foundation of the data center network, IT can deliver applications and services where and when needed. Whether for citizen engagement services, employee and citizen records, sensitive government data, or legislative or administrative functions, applications are predictable and responsive.

With data center switches, IT can create a single IP network fabric that seamlessly connects and secures workloads across both enterprise data centers and public cloud instances. Juniper Networks QFX Series Switches provide a building block approach for the data center fabric, minimizing complexity and cost while maximizing flexibility. Using QFX Series switches as the underlay network and Ethernet VPN–Virtual Extensible LAN (EVPN-VXLAN) for the overlay network creates a single IP fabric with efficient Layer 2/Layer 3 connectivity, segmentation, simplicity, and agility.

With Juniper's intent-based networking system, driven by Apstra, data centers become more cloud like with a fabric management overlay that's designed to reduce complexity and enable automation throughout the entire lifecycle, from design to deployment to operation (Day 0 to Day 2). With closed-loop automation and assurance, government IT organizations can reliably accelerate service availability to improve the user experience. Data center architects can use blueprints to design fabrics quickly with understandable terms that define intent, while data center operations staff can deploy fabrics with meaningful analytics that provide consistent, accurate insights by comparing operational state to design intent—the single source of truth. The Apstra intent-based networking system understands the state of the network, making it a powerful operational tool for visualizing, troubleshooting, optimizing, and automating the framework for change as the network evolves and adapts to support new services.

- **Build a connected, threat-aware network to detect and stop threats faster:**

Juniper Connected Security uniquely safeguards all forms of government, unifying all network elements into a threat-aware network. Juniper's built-in defenses automatically protect users, devices, applications, and data across government agencies and departments. Security policies are dynamically enforced at every network connection point.

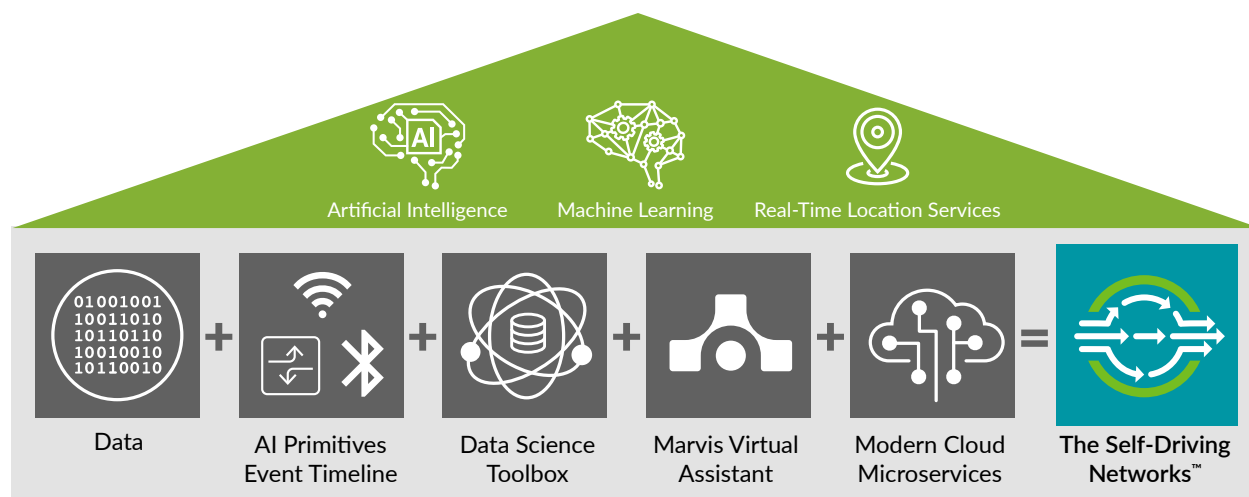


Figure 2: Elements that fuel workforce agility for digital government

Comprehensive protection begins with Juniper Networks SRX Series Services Gateways, high-performance, next-generation firewalls delivered on the industry's most scalable and resilient platform. Critical applications operate safely, while advanced threats are detected and blocked. With clear visibility into threats and centralized, automated control over access and enforcement policies, governments are protected from end-to-end and top-to-bottom.

- Adapt the enterprise WAN for the demands of digital government:** Proven at the largest service providers and many government environments, Juniper routing technology is ideal for the critical business of government agencies. Juniper Networks MX Series Universal Routing Platforms enable high-performance, reliable, and scalable connections across agencies and departments, offices, data centers, and cloud instances with built-in security. Mist AI simplifies network operations while the MX Series routers deliver industry-leading system capacity, density, security, telemetry, and performance. Municipal governments can leverage a single architecture to securely extend broadband to citizens while also connecting government agencies and departments with very efficient operations. Governments seeking a “workforce agility” solution can leverage Juniper Networks Session Smart™ routing technology powered by 128T to build a service-centric fabric that enables a “work from anywhere” architecture that is uniquely able to deliver a quality user experience. Government IT organizations can dynamically adapt to application performance needs and route traffic accordingly to improve user experience. This tunnel-free approach reduces application latency while increasing available bandwidth for video and other network-intensive applications. Native session optimization can

be used to improve application speed and reliability, as well as quality, security, and compliance. This highly distributed “work from anywhere” world challenges the legacy perimeter-based security approach, demanding security be baked into networks. Governments can deliver a zero-trust fabric that provides unparalleled control over access to critical resources and data needed for a resilient client-to-cloud infrastructure to optimize productivity with a distributed workforce.

AI-driven operations let IT measure and drive user experiences across the enterprise WAN, all the way to workers in remote agency locations and offices. The Juniper SD-WAN solution for connecting branch offices, combined with AI-driven operations, can further improve user experiences, automate operations, and lower costs.

- Harness network automation to increase IT efficiency:** IT is habitually called upon to do more with less. Juniper allows government IT teams to leverage automation to deploy, change, and manage networks. With Juniper's network automation tools, IT can drive intent-based operations across the network and services life cycle, reducing the time it takes to perform common operating tasks and minimizing process-related errors. Network automation empowers the IT team to do more with its available resources, while elevating collaboration between NetOps, DevOps, and SecOps in more satisfying work.

Solution Components

For years, governments have trusted and deployed Juniper solutions as major building blocks of their networks. Here's how they can improve digital government outcomes and reduce costs with Juniper AI-driven networking.

Table 2. Solution Components for Digital Government

Solution Domain	Summary	Description
Juniper cloud services driven by Mist AI	Pioneers AI for IT with the only AI-driven platform for wired and wireless networks.	Juniper cloud services driven by Mist AI are built on a modern microservices cloud which enables elastic scale, 100% API-based programmability, and operational simplicity. Juniper Mist delivers advanced wired and wireless user experiences unavailable with legacy network solutions.
Juniper Series of High-Performance Access Points	Provides enterprise-grade Wi-Fi, Bluetooth LE, and IoT connectivity.	Juniper Access Points work in conjunction with Juniper cloud services to collect and analyze metadata in near real time from all wireless clients. This enables rapid problem detection and root cause identification with predictive recommendations and proactive correction. Organizations can choose from a growing portfolio of access points for indoor and outdoor use.
Juniper Mist Wi-Fi Assurance	Replaces manual troubleshooting tasks with automated wireless operations.	Juniper Mist Wi-Fi Assurance makes Wi-Fi predictable, reliable, and measurable with unique visibility into user service levels. Dynamic packet capture and proactive root cause identification speed troubleshooting even for IT generalists.
Juniper Mist Wired Assurance	Enables simpler operations, streamlined troubleshooting, and better visibility into the user experience for connected devices.	Juniper Mist Wired Assurance onboards, provisions, manages, and troubleshoots EX Series Ethernet Switches, leveraging rich Junos® operating system telemetry to deliver AI-powered automation and service levels. IT gains clear visibility into wired service levels and speeds troubleshooting with proactive root cause identification and automated actions.
Marvis Virtual Network Assistant	Simplifies everyday troubleshooting with self-driving actions and network performance analysis and real-time answers.	The AI-powered Marvis Virtual Network Assistant automatically fixes problems before users know they even exist. IT can understand issues faster and get more done with its conversational interface driven by Mist AI. IT can turn insights into actions with automatic fixes or recommended actions for simplified troubleshooting.
EX Series Ethernet Switches	Provides carrier-grade switches for campus core, aggregation, and access layers.	The EX9200 line of Ethernet switches is ideal for high-density campus core environments, while the EX4600 line of Ethernet Switches delivers 100GbE aggregation for campus deployments. A broad portfolio of EX Series access switches is available, including the EX4300 Ethernet Switch, which is ideal for connecting IP phones, wireless access points, and surveillance cameras.
Remote Workers		
Secure remote workforce	Extends the AI-driven enterprise to the home.	Juniper's secure remote workforce solution, Connected Security, is composed of Juniper Mist Wi-Fi Assurance, Juniper Mist Edge, and SRX Series branch firewalls. It empowers governments, administrators, and other staff to work remotely more effectively, while giving IT visibility into the at-home network user experiences.
Data Center		
QFX Series Switches	Secures and automates the data center network.	QFX Series Switches provide a strong foundation for flexible, high-performance network fabrics that improve network reliability and agility. QFX Series Switches provide a building block approach for a spine-and-leaf IP fabric architecture with flexible deployment as spine-and-core aggregation, end-of-row, and top-of-rack switches.
Apstra Automated Data Center	Realizes the full advantage of cloud-like data centers with a single, unified solution that delivers a consistent experience.	Apstra Automated Data Center unifies architecture and operations into a single source of truth: an intent-based networking system. IT can leverage closed-loop automation and assurance throughout the entire data center life cycle to accelerate services, elevate experiences, and increase productivity.
Connected Security		
SRX Series Services Gateways	Provides comprehensive threat protection and advanced defenses against known and unknown threats.	SRX Series firewalls are built for maximum scale, availability, and performance. IT can choose from a broad range of physical and virtual SRX Series devices, from all-in-one firewalls for the campus and branch office to highly scalable enterprise and data center firewalls.
Juniper Advanced Threat Prevention	Finds and blocks both known and unknown cyber threats.	Juniper Advanced Threat Prevention improves security team response times by automatically discovering threats. Using SecIntel, Juniper's security intelligence feed, along with dynamic malware analysis and machine learning, Juniper Advanced Threat Prevention discovers zero-day threats and enforces protection mechanisms at all connection points.
Junos Space® Security Director with Policy Enforcer	Delivers scalable, responsive, and automated security management.	Junos Space Security Director gives IT teams insight into threats, compromised devices, and risky applications through an intuitive centralized interface. A user-intent policy framework allows policies to dynamically adapt to changing threat conditions. Policies are enforced everywhere, with any physical or virtual machine acting as an enforcement point, including Juniper switches, firewalls, and routers, as well as third-party infrastructure and cloud platforms.

Solution Domain	Summary	Description
Enterprise WAN and SD-WAN		
MX Series Universal Routing Platforms	Unifies operations across the WAN.	MX Series routers simplify and integrate network operations across private data center and public cloud resources. MX Series routers provide flexible, simplified connectivity for site-to-site, data center interconnect, and cloud services deployments. MX Series routers also reduce WAN latency, improving cloud application performance for end users.
128T Session Smart Routers	Delivers a zero-trust service-centric WAN fabric.	128T routers simplify how governments support remote employees by providing centralized management, granular control, individualized flows, and integrated functions, all with infused security and dynamic traffic management. Together, the intelligent features built into the network help all types of government deliver unsurpassed quality, reliability, and scale to applications and services, improving productivity and experience, even under heavy usage from remote workers.
Juniper SD-WAN driven by Mist AI	Simplifies and secures branch offices.	The Juniper SD-WAN driven by Mist AI solution delivers smart, automated routing to connect branches with application performance that aligns with business policies. User experiences are enriched across the WAN with AI-driven insight, automation, and action. Intelligent traffic handling increases application performance at a lower cost.
Juniper Mist WAN Assurance	Enables simpler operations, provides better visibility into end-user experiences, and lowers mean time to repair (MTTR).	Juniper Mist WAN Assurance provides visibility into the WAN user experience with application-based context. AI-driven insight, automation, and self-driving actions can be applied across campus and branch networks and the enterprise WAN.

Table 3. Improving Digital Government Outcomes and Reducing Costs with AI-Driven Networking

Solution Domain	Summary	Description
Automation and Network Management		
Juniper Sky™ Enterprise	Enables simple and intuitive cloud-based network management.	Ideal for small and midsize government agencies, IT staff can use Juniper Sky Enterprise to centrally manage and orchestrate network devices and services through a single pane of glass.
Junos Space Network Management Platform	Simplifies and automates switching, routing, and security management.	Ideal for larger government deployments, Junos Space enables IT staff to scale operations, reduce complexity, and deliver new applications and services quickly. Applications include Security Director and Network Director.
Automation	Builds simplicity into the network for speed, agility, and resilience.	The Junos OS automation framework accelerates service delivery and reduces manual configuration work. IT gains clear visibility into application and network performance, with service-level agreements (SLAs) for different departments with minimal effort.
Services		
Professional Services	Offers global services designed to meet business goals.	Juniper Professional Services lets you leverage advisory services, network optimization, and implementation services to speed time to value.
Maintenance Services	Provides mission-critical support services that reduce OpEx and keep the network running smoothly.	A range of maintenance services keep the network running reliably, reduce network risk, decrease operational costs, and protect your network investment.

Summary—With Juniper, Your Network Works for You

Juniper is a networking partner for government with a vision that's focused on engineering simplicity and user experience—one that challenges conventional wisdom and delivers on a better network experience. Since its inception, Juniper has consistently developed and delivered market-leading, innovative networking solutions. With our industry-leading AI-Driven Enterprise architecture, we've reimagined how the network should operate, with a primary focus on optimizing experience and realizing the vision of a self-driving network.

COVID-19 presents an opportunity to accelerate much needed changes and build a network architecture that enables digital government for the next decade. While technology has never

been more critical to delivering digital services, IT has also never been more complex. The growing number of users, applications, mobile and IoT devices, and locations relying on digital systems will quickly become unsustainable if governments continue down the same network path.

That's why Juniper is leading the way with AI-driven networking, using AI-driven insight, automation, and actions so governments can deliver unique engagement and optimized experiences that elevate use for citizens and civil servants alike.

The IT landscape is changing forever, and Juniper is leading the way. We can help you set the standard for how citizens, governments, and businesses collaborate and innovate with one architecture that delivers a wealth of positive outcomes.

Learn More

Explore the possibilities of Juniper AI-driven networking. Attend a live Wired and Wireless Wednesday or Transformation Thursday webinar and experience the Power of AI Ops. [Register now.](#)

About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

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