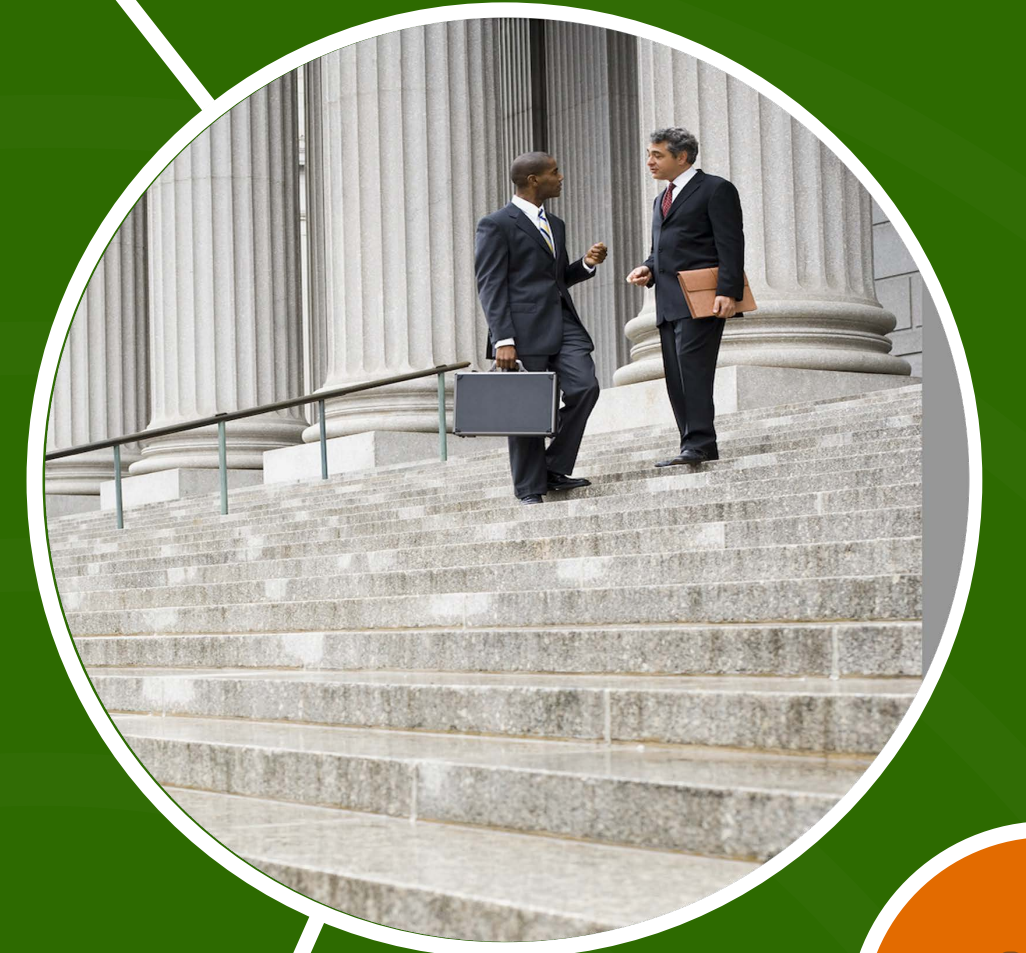# Experience-First Networking for Government

Enable agencies with secure client-to-cloud automation, insight, and AI-driven operations to elevate employee and citizen experience.

Experience-First Networking.

Juniper knows that experience is the first and most important requirement for networking in the cloud era.

This is why we are focused on putting our users – the network architects, builders, and operators – at the center of all that we do, so that their users – the agency employees accessing services, the citizens looking up confidential public records through the agency application, or the guests using the network Wi-Fi on their devices – are as happy with their experience as possible.

This requires a relentless focus on experience, from when customers first engage with us to how they deploy and manage our solutions on a day-to-day basis (including upgrades, troubleshooting, and feature rollouts).

By making applications and data the network's priority, we enable our users to build agile networks, leverage CI/CD and DevOps approaches, and lead the digital transformation that they're all driving.

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Improve Citizen Experience and Reduce Costs with AI-Driven Networking

Government agencies are defining new ways for a seamless digital service delivery to enhance citizen experiences, safeguard privacy and data, boost workforce well-being, and lower the cost of operations. Optimizing IT experiences saves time and money, while enabling IT departments to best align with key organizational objectives. Juniper Networks brings unprecedented simplicity, reliability, and security.

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Heightened Wi-Fi is important and critical for high quality agency workforce, and guests experiences

Enable mission-critical connectivity for government workers, contractors, and citizens.

Deliver predictable, resilient, and assured network experiences for all users, devices, and applications, from client to cloud.

• Use AI-driven insight and customizable service levels to optimize network experiences for personnel, contractors, administrators, and citizens based on their constantly changing needs and locations.

• Increase reliability and reduce time to remediation with automation of Day 2 operations.

• Maximize end-user satisfaction by optimizing network performance based on apps, devices, and bandwidth.

• Extend your mission-critical network to any location, seamlessly supporting facilities across multiple locations.

• Support connected on premise and remote worker requirements.

• Connect mobile and temporary sites rapidly, simply, and securely.

• Effectively support public-facing online services, IoT-enabled facilities, and infrastructure systems.

Real experiences and results

For The City of Fairlawn, Ohio, a $10 million investment over ten years in municipal broadband is paying off handsomely, giving residents better internet for less money. The city is already attracting more businesses, growing tax revenues, and increasing home values - home sales increased by 8.7% in the first year of operation. Fairlawn is now on a path to becoming a smart city.

Citizen Experience Places of Government	Agency Staff Hybrid Workforce	Centralizing IT Agency Portals	Cloud First Distributed Applications

AI-Driven - Operationalizing data from connection to cloud

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None of this can happen in a vacuum. For automation, insight, and AI-driven actions to deliver maximum results from the client all the way through the cloud (or several clouds), they must be coordinated. More specifically, correlation is required across the WLAN, LAN, WAN, Data Center, and security domains to deliver cohesive operations and experiences.

**Let us put this into perspective with an example you can relate to.**

Yesterday, the city council, Ms. Levin's call with the city mayor dropped. Why? Was it her Wi-Fi? A bad ethernet cable on her router? The application server in the cloud/data center? A new security policy? Malware on her computer? Or her internet/ WAN connection?

With end-to-end service levels, event correlation, anomaly detection, and self-driving functionality, you can easily discover the issue and fix it before Ms. Levin even knows there is a problem. Juniper picks up where other solutions stop. We know that even though the network is up, Ms. Levin's experience is not good. And we know these things proactively, often before a user complains or a ticket is opened.

That's experience-first networking.

What was wrong with this council's video call yesterday?

Wi-Fi

Wired Network

Server/Cloud

WAN

Ms. Levin

Mayor
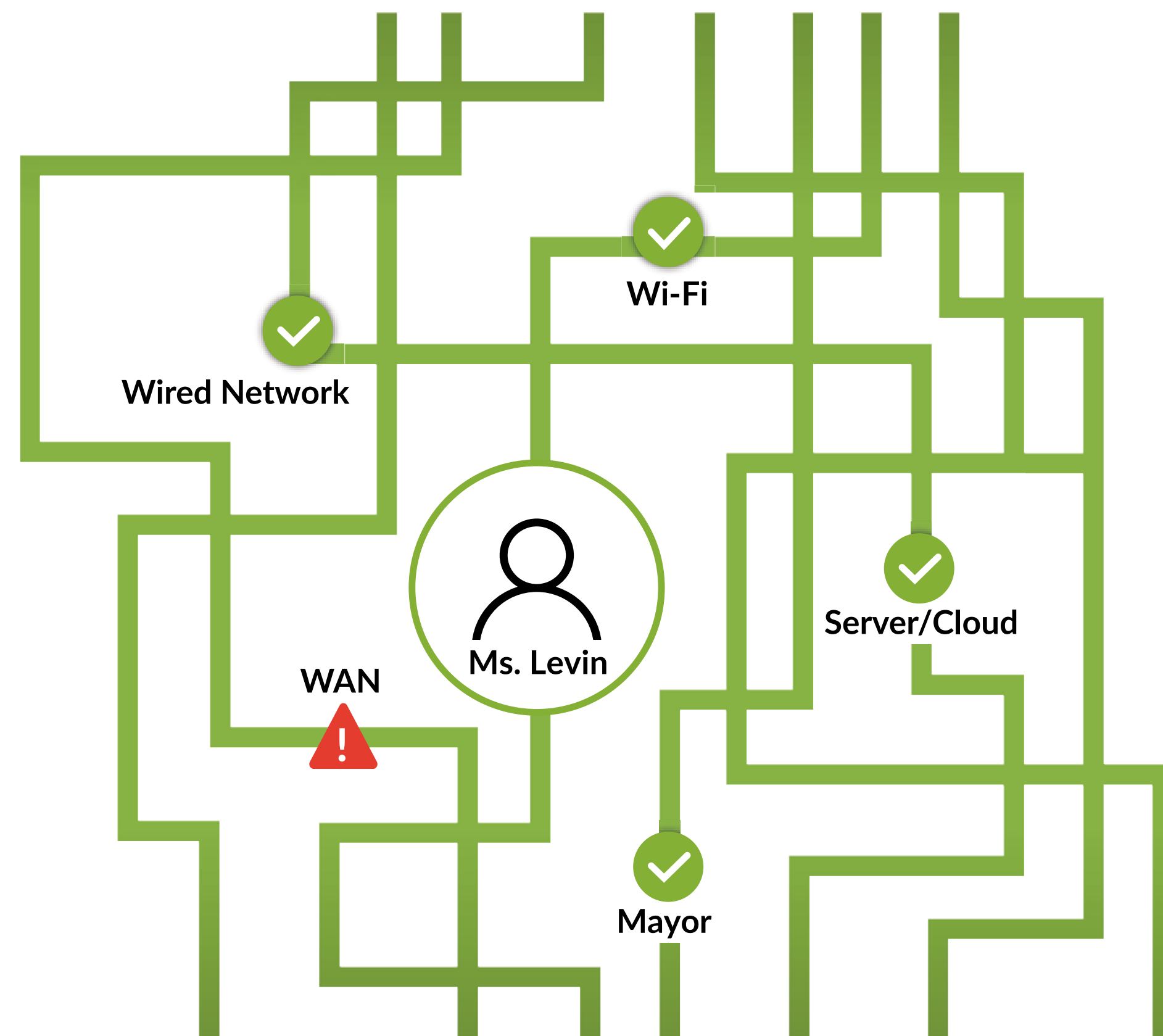
Location-Based Services elevate workforce and citizen experiences and optimize operations with asset tracking

Support worker wellbeing and deliver engaging and relevant experiences using indoor location.

Juniper's unique virtualized Bluetooth (vBLE) location-based services are built right into the network.

- Enhance worker and contractor wellbeing and increase citizen engagement using Juniper Indoor Location Services.

- Provide localized services, such as turn-by-turn wayfinding, reminders, and service information.

- Use the accuracy of virtual beacons (under 1m) to deliver on-the-spot information, such as the latest wait times, digital coupons, or hazard alerts.

- Accurately manage asset location, security, and geo-fencing.

- Safely manage occupancy limits to meet social distancing, safety, and quarantine requirements.

- Leverage data analytics to efficiently manage equipment allocation, based on personnel location and building occupancy.

Real experiences and results

A premier IT provider, ThunderCat Technology helped a government healthcare organization provide exceptional digital experiences to patients, and their families, visitors, and caregivers with AI-driven networking from Juniper.

Nurses can use a convenient app to pinpoint the location of missing equipment like wheelchairs, giving them more time to spend on patient care and less time hunting for lost equipment.

Experience Places of Government	Centralizing IT Agency Portals	Cloud First Distributed Applications

AI-Driven - Operationalizing data from connection to cloud

JUNIPER NETWORKS | Driven by Experience

Enhance agency application delivery experience and lower network operation cost with AI

Leverage AI to enhance government operational efficiency while reducing operational costs.

Simplify network operations, increase network service reliability, and reduce helpdesk workload to free up skilled team members.

- Simplify network planning, design, and operation through network automation.

- Improve efficiency by automating and optimizing processes.

- Leverage AI to automate and accelerate deployment.

- Scale up and out efficiently with a single operating system.

- Use automated and intent-based networking to streamline everyday data center operations.

- Leverage automated troubleshooting to dramatically reduce the number of network tickets.

- AI predicts network problems and performance issues before they happen, undertaking proactive remediation to continually optimize each user experience.

- Benefit from visibility into the network user experience and understanding root causes of issues.

Real experiences and results

The Office of Management and Enterprise Services (OMES), the technology arm of the State of Oklahoma, acted swiftly to ensure that the IT systems needed to operate state and local agencies, the schools, and emergency response worked smoothly.

Within weeks of the pivot to remote work, 30,000 state employees could access their applications and digital resources from home. A more powerful core network meant more responsive applications so employees could stay focused on helping constituents without lags or slow downloads.

The Juniper MX Series 5G Universal Routing Platforms provide the core of Oklahoma's digital infrastructure, connecting 500 state and local government offices as well as schools, libraries, and other community institutions in 77 counties.

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The delivery of experience extends beyond what is going on for the government user. This assured user experience depends on the experience and means of the operations team. Better automation, insights, and AI in operational toolsets helps them to deliver new agency apps and services, assure the user experience and agency security, and make repairs and changes when needed more quickly and efficiently.

Here's an example from the operator's point of view.

It's a refrain we've heard before — the application isn't functioning correctly, so it *must* be the network. The ability to quickly diagnose where the problem lies is key to getting the network fixed, or as is often the case, shortening the mean time to innocence.

Could the issue be caused by an external routing issue? Something internal to the network fabric? Security policy? Bandwidth or cabling? It can be a major headache to sort through all the possible areas of failure to find the root of the problem.

Having a single source of truth for your network allows network operators to specify exactly how they expect their network to operate and ensure that the network's function is continuously validated against that intent — if there is deviation, the system generates an anomaly. Further, the approach enables observability across teams, proactive discovery of potential issues and eases change management.

That's putting experience for the operations team first.

Streamline Operator Experiences

BGP routing

Cabling

EVPN Fabric

Optics

Link Utilization

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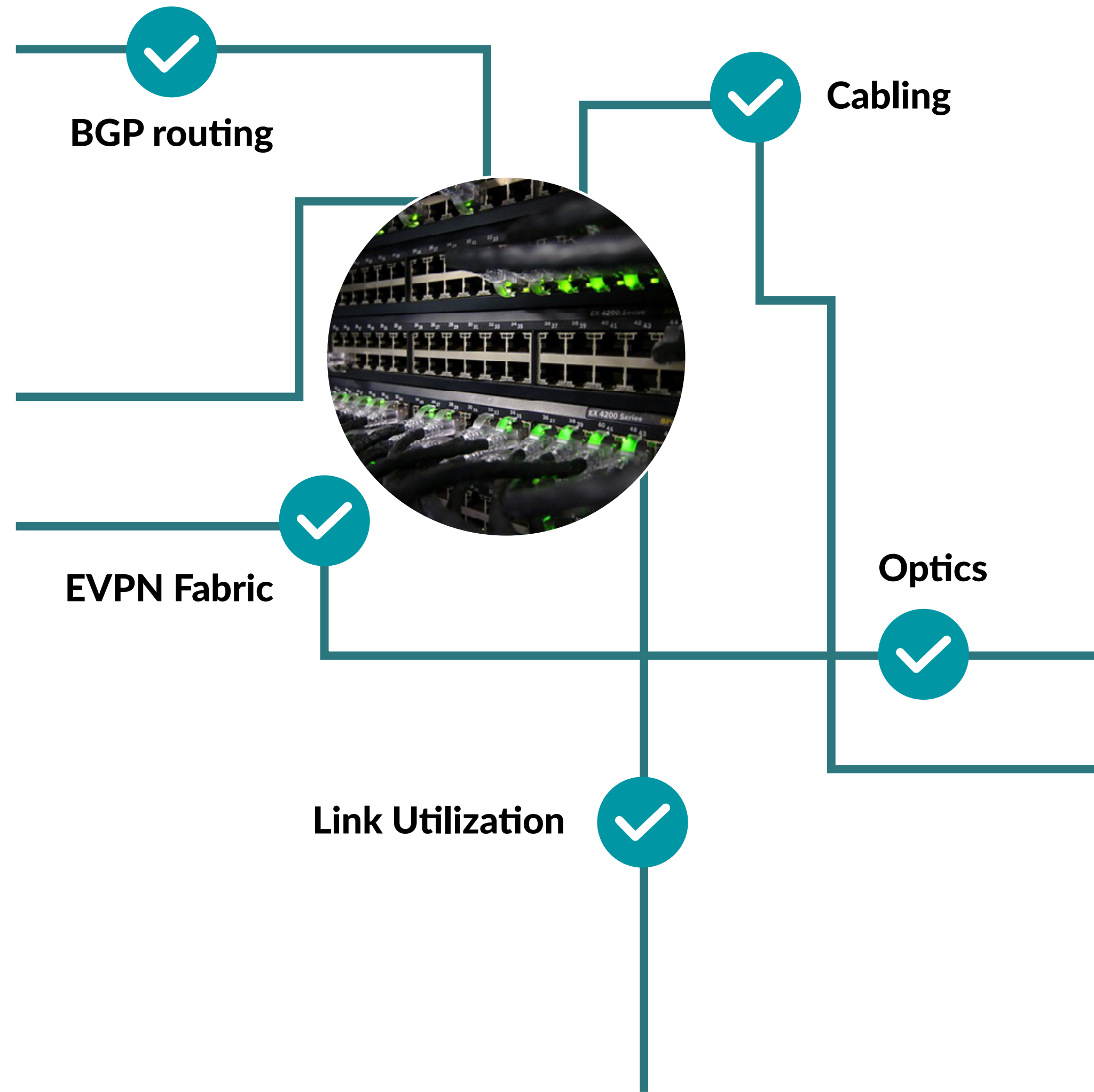
Comprehensive threat-aware security for agency connected devices, public records, and staff data and privacy

Protect organizational, worker, and citizen data and privacy while safeguarding against rising cyber threats.

Secure all confidential data with a zero trust, threat-aware network.

- Secure network, devices, software, and data, with comprehensive security efficacy against exploits, malware, and ransomware.

- Juniper Advanced Threat Prevention Cloud can find and stop botnet and ransomware threats without decryption, ensuring both privacy and security.

- Extend enterprise-level security to your remote and mobile network users.

- Utilize any point of the network for policy and security enforcement; manage security policy across the entire network, including third-party devices.

- Unify and rate intelligence from multiple sources.

- Leverage intent-based security policies that are easy to write, understand, and apply.

- Analyze and respond to risk with one-touch mitigation that can easily scale.

- Third party validation by CyberRatings, ICSA Labs, NSS Labs, and certified by NetSecOpen.

Real experiences and results

The City of Philadelphia, an innovator in delivering technology to enable city operations and digital services actively protects the city against cyberthreats.

Employees in police, fire, public health, tax, streets, and other departments access critical data and applications over an all-Juniper threat-aware network that helps the city's Office of Innovation and Technology (OIT) protect the city's network and endpoints.

OIT consolidated and simplified its security ecosystem with Juniper Networks SRX Series Services Gateways for advanced firewalling, Juniper Advanced Threat Prevention for threat intelligence, and Policy Enforcer, component of Junos Space® Security Director, to automatically take action.

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The Juniper Enterprise Portfolio: When Experience Matters

Juniper provides a complete client-to-cloud enterprise solution for government entities that encompasses three components to deliver the best IT and user experiences.

The Juniper experience-first solution has the following networking components, each equipped with security built in to make them threat-aware:

AI-Driven Enterprise

which includes wired and wireless access and SD-WAN 3.0, all driven by Mist AI to Connect agency devices, processes, applications, staff, and citizens.

Automated WAN Solutions

for linking different offices and data center facilities with enhanced and reliable connected services.

Cloud-Ready Data Center

for simplified underlay/overlay management with intent-based automation and assurance.

AI-Driven Enterprise: Wired/Wireless Access

Wireless is more critical than ever in the government ecosystem, but traditional WLAN solutions are over a decade old and lack the agility and elasticity to support the rapid growth in mobile devices, IoT, and applications.

Juniper changed the WLAN game with a revolutionary modern cloud-native platform that leverages Mist AI to:

Lower IT costs to place focus on other government areas

with AIOps, self-driving network functions and a conversational Virtual Network Assistant™: Marvis.

Assure better public workforce, and citizen experiences

with wireless service levels, proactive remediation, personalized location services, and security.

Bring agility to the network

through a microservices architecture that enables weekly updates to adapt to new devices and applications being deployed in your facility's networks that support connected services

By leveraging the years of learning that Marvis has performed in the wireless domain, Juniper has brought unprecedented insight and automation to wired access by bringing all these attributes to the EX switching platform.

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We believe, some of the factors that helped gain this recognition are:

Dynamic packet capture (without human interaction)
for easy and accurate data collection without truck rolls.

Automated event correlation
across the wired, wireless, WAN, and security domains for fast
root cause identification and remediation for a seamless telehealth
and smart IoT enabled facilities.

Programmable workflows
for 100% API-driven network operations, improving operational
and clinical efficiency.

Virtual Bluetooth LE and integrated IoT
which bring the benefits of indoor location without extra hardware
(e.g., no battery beacons) and software. Easily locate critical medical assets
(IoT enabled wheelchairs, infusion pumps, nursing carts).

Risk profiling for wired/wireless
Juniper wired/wireless customers can receive alerts of threats
detected by Juniper SRX Series firewalls and ATP Cloud. This allows
administrators to quickly assess security risks when users and devices
connect to access networks, and take appropriate action if required, such
as quarantining or enforcing policy.

2021 Gartner® Magic Quadrant™ for Enterprise Wired and Wireless LAN Infrastructure
(A Leader, Furthest in Execution & Completeness of Vision)

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A new era of Experience-First Networking is upon us, led by Juniper.

Is your network ready?

Juniper | **NETWORKS®** | Driven by **Experience™**

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