Experience-First Networking for Healthcare

Maximize patient, staff, guest, and IT team experiences with secure client-to-cloud automation, insight, and AI-driven actions.

Experience-First Networking

Juniper Networks knows that it takes a reliable and secure network to deliver the best experiences for patients, staff, and guests.

We provide your network team with the solutions you need so your end users—the patient accessing telehealth services, the nurse locating a portable IV pump, and the guest navigating a complex medical campus—have a positive experience.

Juniper's relentless focus on experience extends from our first engagement with your organization through your deployment and day-to-day management of our solutions (including upgrades, troubleshooting, and feature rollouts).

We enable you to accelerate your digital transformation with a range of flexible solutions, including predictable and secure Wi-Fi and scalable indoor location services, to deliver a truly digital healthcare experience.

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Improve Patient Outcomes and Reduce Costs with AI-Driven Networking

Healthcare organizations are continually seeking new ways to implement digital care delivery to improve patient outcomes, enhance the patient experience, boost workforce well-being, and lower the cost of care. Optimizing your organization's network saves time and money while supporting key business objectives.

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Enhance Wi-Fi connectivity for clinicians, patients, administrators, and guests

Deliver predictable, reliable, and optimized 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 clinicians, staff, patients, and guests, based on ever-changing needs and locations.

- Extend your healthcare-level network to any location.

- Confidently support traditional hospital and clinic-based care alongside telemedicine, virtualized, and mobile services.

- Implement rapid, simple, and secure connectivity for pop-up testing centers, mobile clinics, and temporary care units.

- Enable seamless collaborative conferencing and research across multiple locations.

- Support connected health, telehealth, and IoT-enabled facilities.

Explore real experiences and results

✓ **Sentara Healthcare** with Juniper's Wireless Access solution, driven by Mist AI, provides reliable Wi-Fi performance to deliver new services such as wayfinding, medical device tracking, and digital patient check-in that are all part of providing the best patient care, which also led to **savings estimated 20% to 30% in OpEx and 20% reduction in CapEx**.

✓ **Queen Elisabeth Institute (KEI)** for specialized therapy. Since deploying a Juniper Mist AI-driven wireless network, KEI has seen a **100x improvement in Wi-Fi performance.** Clinicians, therapists, and administrative staff have resilient access to medical and administrative applications; smart medical equipment is always connected; and patients and guests can easily connect to the network.

✓ At **Island Hospital**, in Washington State, clinical staff were frustrated by the quality of their legacy Wi-Fi service. Now, the Juniper Mist Wireless LAN platform ensures they have fast, reliable access when entering patients' vitals, ordering tests, or reading diagnostic images. In addition, Juniper's AI-driven virtual network assistant, Marvis has reduced their trouble tickets by 90 percent. **Marvis has reduced their trouble tickets by 90 percent.**

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None of this can happen in a vacuum

To optimize user experiences and network operations from client to cloud, you need to have end-to-end visibility and insights.

This example illustrates the value of an end-to-end solution.

Yesterday, Dr. Smith's telehealth call with his patient dropped. Why? Was it his Wi-Fi? A bad Ethernet cable to his router? The application server in the cloud/data center? A new security policy? Malware on his computer? Or his internet/WAN connection?

Although the network is up, Dr. Smith is not having a good experience. With Juniper's end-to-end service levels, event correlation, anomaly detection, and self-driving functionality, you can proactively identify the source of the issue and fix it before Dr. Smith ever encounters a problem.

That's experience-first networking.

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

Wi-Fi

Wired Network

Server/Cloud

WAN

Dr. Smith
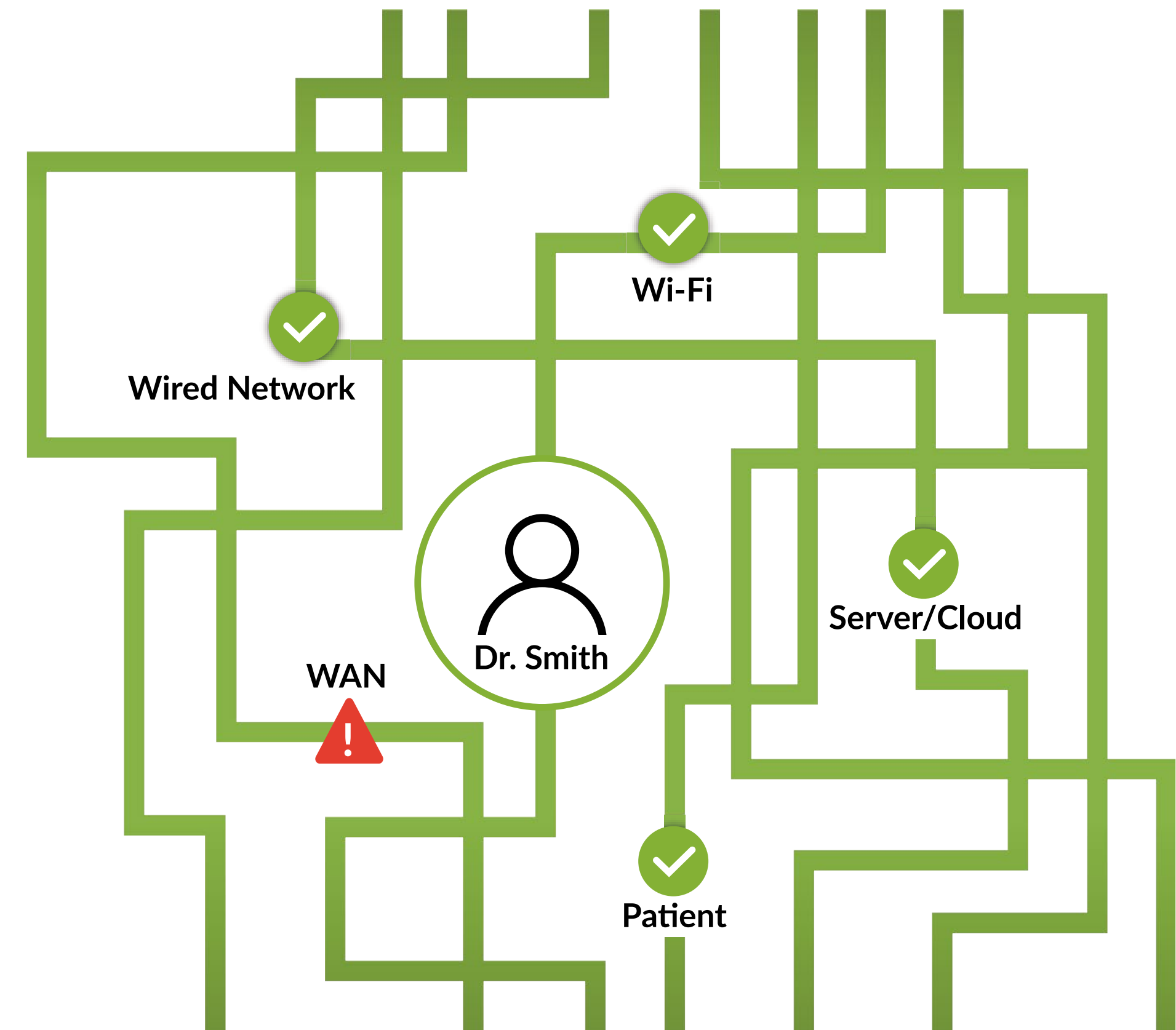
Patient

Drive higher patient engagement and track critical medical assets with highly accurate and scalable indoor location services

Juniper's patented virtualized Bluetooth low-energy (vBLE) technology is built right into the network.

- Enhance patient, staff, and guest experiences, and increase engagement using Juniper Indoor Location Services.

- Provide localized services, such as turn-by-turn wayfinding, appointment reminders, and hospital 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.

- Easily locate critical medical assets (such as patient monitors, pumps, ultrasounds, and workstations on wheels).

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

- Leverage data analytics to efficiently manage medical equipment allocation based on hospital floor occupancy.

- Track staff and prevent potential violence and harassment across all facilities.

Explore real experiences and results

By combining Wi-Fi, vBLE, and IoT, the Juniper wireless solution, driven by Mist AI, has enabled the **Orlando VA Medical Center** to track assets, deliver a better network experience for veterans, and prevent dementia patients from leaving facilities unattended.

Jan Yperman Hospital in Flanders, Belgium, migrated to Juniper wireless, driven by Mist AI. Now, clinicians, staff, patients, and guests can count on a more reliable network experience whether they are in the hospital or walking across campus. Medical devices stay connected, the location of high-value assets can be tracked, and patients who are most likely to wander are monitored for safety.

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Boost application delivery and increase network service reliability with AI

Reduce OpEx and helpdesk workload by simplifying network operations.

- Maximize end-user satisfaction by improving operational, clinical, and administrative efficiency.

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

- Reduce costs and improve outcomes for patients, providers, and payers by leveraging AI to automate and accelerate deployment throughout the facility.

- Scale out primary and specialty services efficiently with a single operating system.

- Dramatically reduce the number of network tickets through automated troubleshooting.

- Continually optimize user experiences with AI that predicts network problems and performance issues before they happen and undertakes proactive remediation.

Explore real experiences and results

- A national healthcare system **reduced OpEx by 30%** after switching from MPLS to a centrally managed Juniper SD-WAN.

- AI-driven insight and automation freed up the IT team at **El Centro Regional Medical Center** to deliver strategic technology leadership. When Covid-19 swept through the rural community, were able to focus exclusively on technology to support triage tents and new wards. The Wi-Fi just worked.

- **Northeast Georgia Healthcare System** hospital's transition to an AI-driven network was transparent to hospital staff and swift for the IT team with 50% less work to install. The AI-driven network has measurable operational and user experience benefits. Staff can access clinical and administrative applications over their laptops and tablets from anywhere. Infusion pumps, EKG carts, and telemedicine kiosks are always connected. Physician's BYOD experience has been vastly improved, and Wi-Fi calling is flawless even in the farthest corners of the hospital.

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To deliver the best experiences for patients, staff, and guests, network teams need to have great operational experiences as well. Enhanced automation, insights, and AI help networkers deliver new medical applications and services reliably; assure user and facility security; and make repairs and changes quickly and efficiently.

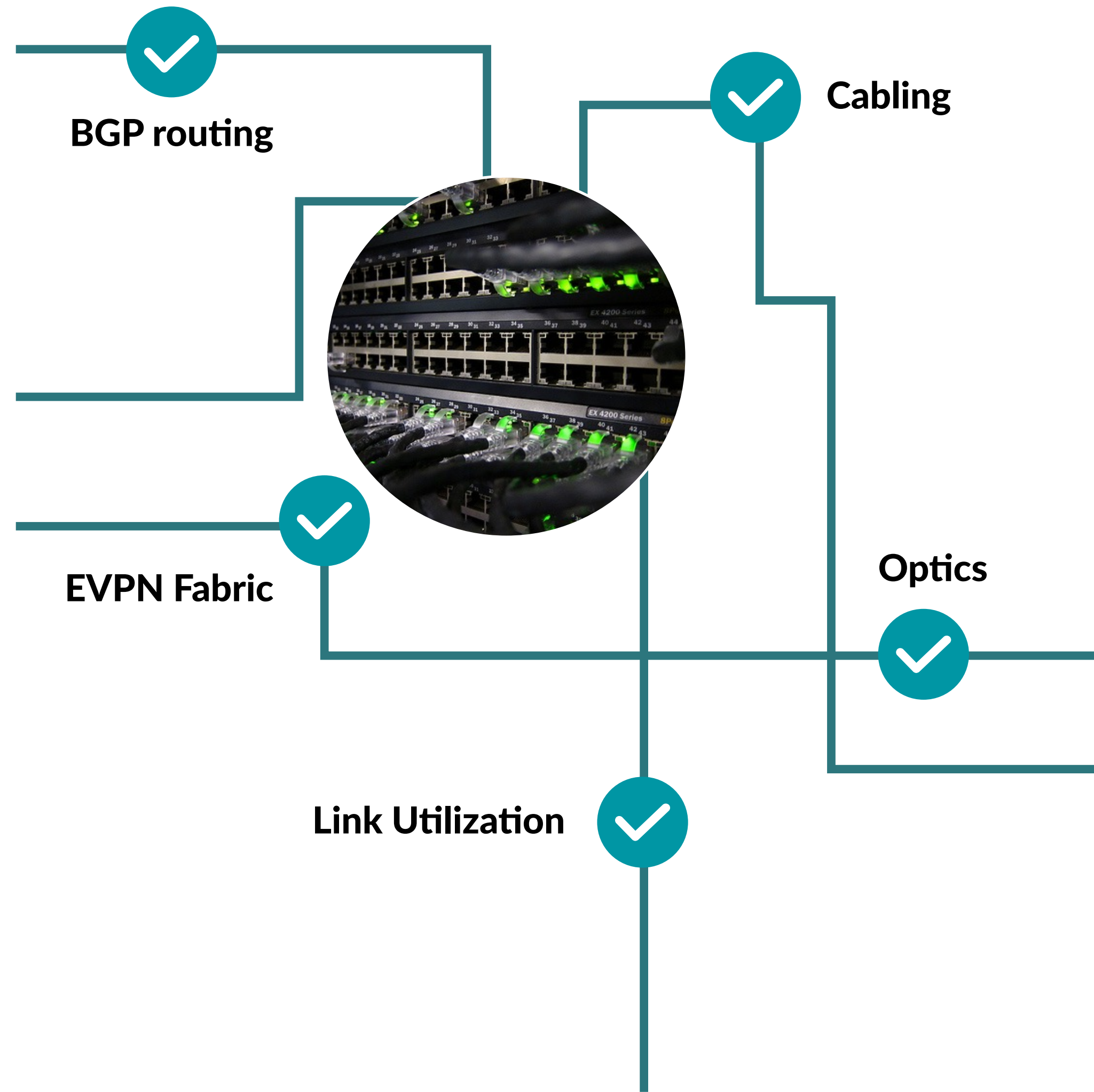**Here's an example from the operator's point of view.**

It's a refrain operators often hear from users: The application isn't functioning correctly, so it *must* be the Wi-Fi. The ability to quickly diagnose where the problem lies is key to reducing mean time to repair (MTTR) and getting users or devices back online quickly.

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.

With end-to-end observability of the network, operators can quickly gain insights into the performance of connected devices. This simplifies troubleshooting and enables proactive detection of anomalies. Furthermore, pre-connection performance metrics provides visibility into connect and authentication successes, while post-connection metrics offers insights into throughput and detects STP loops, interface errors, and congestion.

That's putting experience for the operations team first.

Streamline Operator Experiences

BGP routing

Cabling

EVPN Fabric

Optics

Link Utilization

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Secure medical connected devices, patient records, and staff data

Safeguard against rising cyber-attacks with a zero-trust, threat-aware network.

- Secure network, devices, software, and data against exploits, malware, and ransomware.

- Find and stop botnet and ransomware threats without decryption, ensuring HIPAA compliance.

- Extend healthcare-level security to remote and mobile network users.

- Manage security policy across the entire network, including third-party devices, utilizing any point of the network for policy and security enforcement.

- 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.

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

Real experiences and results

Össur a global leader in prosthetic, osteoarthritis, and injury solutions, deployed the Session Smart SD-WAN solution. The service helps Össur improve end-user experiences, avoid risk and uncertainty by ensuring secure, reliable, and compliant connectivity, and free IT staff and budget by eliminating operations expense and complexity.

Aveanna Healthcare, aligned technology with the needs of delivering the best home care outcomes for the children and adolescents in which they passionately serve. Aveanna's data center transformation delivers agility and easy scalability as the business grows. The entire data center refresh that included optimizing applications, databases, new compute, storage, and networking offers a **30 to 50 percent increase in application responsiveness** with near-real-time access.

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The Juniper Healthcare Portfolio: When Experience Matters

Juniper provides a complete client-to-cloud solution for healthcare that encompasses three components to deliver the best IT and user experiences.
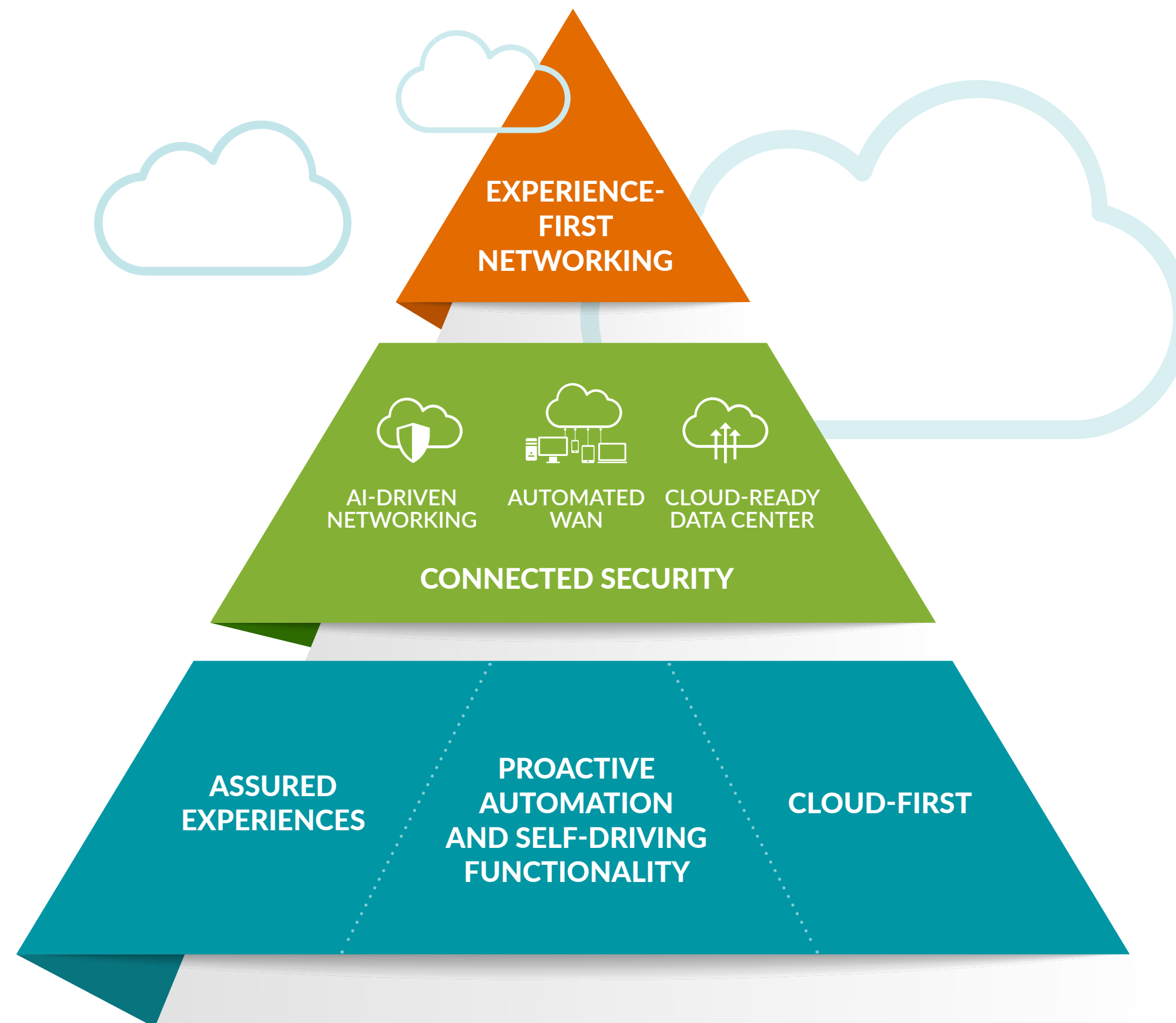
The Juniper experience-first solution has the following networking components, each equipped with security built in to make them threat-aware:

AI-Driven Healthcare

which includes wired and wireless access and MEF 3.0 SD-WAN, all driven by Mist AI to Connect medical devices, processes, applications, clinicians, and guests.

Automated WAN Solutions

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

Cloud-Ready Data Center

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

AI-Driven Networking: Wired/Wireless Access

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

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

Assure better physician, clinical staff, patient, and visitor experiences

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

Lower IT costs while improving service delivery

with AIOps, self-driving network functions and a conversational Virtual Network Assistant™, Marvis.
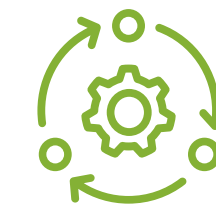
Bring agility to the network

through a completely controllerless microservices archtecture that enables weekly updates to adapt to new devices and applications being deployed in your facility's networks.

The Marvis Virtual Network Assistant (VNA) uses Mist AI to transform how IT teams interact and engage with healthcare network environments. With natural language processing (NLP), a Conversational Assistant, prescriptive actions, Self-Driving Network™ operations, and integrated help desk functions, it streamlines operations and optimizes user experiences from client to cloud across wireless access, wired access, and SD-WAN domains.

Analyst recognition across our portfolio

A LEADER

Gartner®

2022 Magic Quadrant™ for

Enterprise Wired & Wireless LAN Infrastructure

A VISIONARY

Gartner®

2022 Magic Quadrant™ for

SD-WAN

A CHALLENGER

Gartner®

2022 Magic Quadrant™ for

Network Firewalls

A LEADER

Gartner®

2023 Magic Quadrant™ for

Indoor Location Services, Global

Gartner Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure, Mike Toussaint, Christian Canales, Tim Zimmerman, 21 December 2022.
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Gartner Magic Quadrant for Network Firewalls, by Rajpreet Kaur, Adam Hils, Jeremy D'Hoinne and Nat Smith,19 December 2022.
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Gartner® Magic Quadrants™

Enterprise Wired & Wireless LAN Infrastructure
2022 Magic Quadrant™

**3 Years a Leader
Highest in Execution and
Furthest in Vision**

SD-WAN
2022 Magic Quadrant™

Only Visionary

Network Firewalls
2022 Magic Quadrant™

A Challenger

Indoor Location Services, Global
2023 Magic Quadrant™

**A Leader
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Juniper Networks is a Leader in the 2022 Gartner® Magic Quadrant™ for Enterprise Wired and Wireless LAN Infrastructure.

This is Juniper's 3rd consecutive year as a Leader in this report.

Juniper has the furthest position of any vendor in both Ability to Execute and Completeness of Vision.

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Gartner Magic Quadrant for Enterprise Wired and Wireless LAN Infrastructure, Mike Toussaint, Christian Canales, Tim Zimmerman, 21 December 2022.

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3 Years a Leader
Positioned Furthest in Execution & Vision

Juniper Networks is a Leader in the 2023 Gartner® Magic Quadrant™ for Indoor Location Services

Juniper has the furthest position of any vendor in Completeness of Vision

Read the complimentary report:

A Leader
Positioned Furthest in Vision

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

Is your network ready?

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