

UNLEASH EXPERIENCE-FIRST NETWORKING WITH JUNIPER PARAGON AUTOMATION

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Running a large-scale network isn't easy. For service providers and other large network operators, it's about to get even tougher.

Problems like network congestion, latency, brownouts and long lead times to activate new services all degrade end-user experience, sending customers searching for greener pastures from another provider. According to [one 2019 study](#), 60% of network problems are discovered first by end users or not reported at all. And [95% of customers](#) who've had a bad service experience don't even bother to complain; they simply walk away.

It's not that network operators don't care about user experience. It's that current operational models, built on manual processes and antiquated tools, can barely keep up with the growing complexity, scale and performance requirements of the applications they're delivering. And what happens in the next few years, as new [5G](#) and edge technologies spawn even more cloud-hosted content, applications and services?

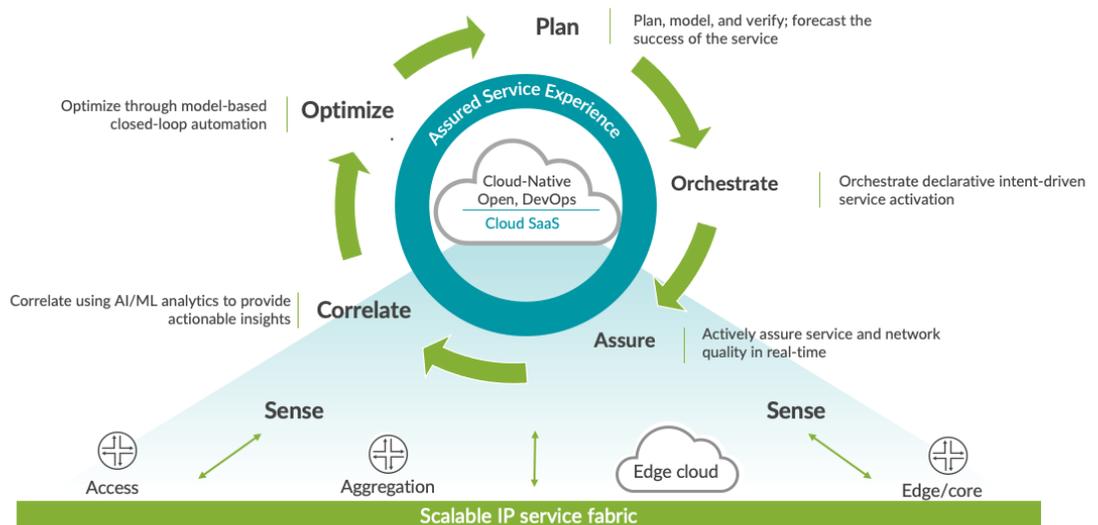
What happens is that current tools and processes break down. The customer experience—and the business—suffer. To survive and thrive in tomorrow's 5G and multicloud services landscape, an operational approach and the tools to support are needed that are laser-focused on one thing: consistently delivering excellent customer experiences.

It's called "Experience-First Networking." And with our new [Paragon Automation solutions](#), Juniper Networks can help you deliver it.

Tomorrow's Services Demand Automation

Capitalizing on the new 5G and multicloud experiences will require deeper visibility into and control over the network and its services. *Knowing* how a service is performing at any given time instead of guessing. *Knowing* when something has gone down without having to wait for users to signal the alert. *Knowing* that the network can support a new service that's being deployed for a customer instead of waiting to find out after the fact. This doesn't happen by deploying a few workflows to automate one or two manual steps. It's the ability to sense and dynamically respond to information across the full lifecycle of the network and services.

Automation Paves the Way for Assured Service Experience



The solution is automation. It's the only way to ensure that increasingly complex networks remain predictable, stable, reliable and capable of providing a quick response to changing conditions. It's why [64% of operators](#) named automation the most critical driver of their organization's [digital transformation](#) over the next five years.

Introducing Juniper Paragon Automation

At Juniper, we understand how hard it is to deliver great user experiences for complex 5G and multicloud services. And we're keenly aware of just how important automation is to the future of large network operators. We're drawing on our legacy of innovation in the world's largest networks to set a new standard for Experience-First Networking in 5G and multicloud environments. Welcome to Juniper Paragon Automation.

Juniper Paragon Automation is a modular portfolio of cloud-native software applications that deliver closed-loop automation in the most demanding 5G and multicloud environments. These solutions translate business intent into real-world performance across the lifecycle of a network and services.

They eliminate manual tasks and processes, empowering operations teams to work more quickly, efficiently and accurately. And they protect customers and business by measuring real service quality on the data plane, assuring that users have a consistent, high-quality experience throughout the life of their service.

Unlike other vendors' solutions, some of which were developed before the iPhone, Paragon Automation is built for 5G and multicloud. Paragon Automation is fully cloud-native and microservices-based, bringing cloud flexibility, elasticity and resiliency to the network.



Raising the Bar for Service Experience

Whether working independently, integrated or with existing tools, Juniper Paragon Automation has everything needed to enable Experience-First Networking:

Network service quality in focus. Paragon Automation combines active test agents, streaming telemetry and machine learning with closed-loop remediation. Teams will know if a service is

impaired, in real time, by verifying and analyzing actual service performance across the life of the service. With closed-loop remediation, the solution can respond to issues as they occur and automatically remediate them before the customer even notices.

Network-aware automation: Paragon Automation was built from the ground up for modern network operators, with every application designed to be network- and service quality-aware. This includes capabilities such as real-time awareness and visualization of network topology and integrated support for [segment routing](#), MPLS and network slicing across all network domains. The solution provides multi-layer root-cause analysis to visualize, analyze and map service issues down to the device and from the device back up to the service. It extends automation across the entire Layer-2 through Layer-7 network stack, across all domains and clouds and the full network and service lifecycle.

Network-tailored machine learning: Some vendors talk a big game about their ML capabilities, when in reality they only provide basic mathematical algorithms or data mining with filtering. Paragon Automation is fueled by true algorithmic machine learning and network analytics. It collects, aggregates and analyzes huge volumes of real-time telemetry data to provide a multidimensional view of device, network and service health. And it uses diverse ML algorithms to detect anomalies and outliers and make accurate predictions about future device and network behavior.

Cloud-native agility and resiliency: Paragon Automation's cloud-native software applications bring cloud flexibility and elasticity to the network, controlling the driver's seat for the entire WAN. Paragon Automation can be used as a cloud-hosted SaaS solution, hosted on-premises or in a public cloud environment. And it can be deployed in redundant node clusters within a single data center or across multiple clouds in a high-availability, highly reliable scale-out architecture.

Paragon Automation in Action

Don't take our word for what Experience-First Networking can mean for businesses. Read what Consolidated Communications, a Juniper customer using Paragon Automation solutions, has to say.

"Delivering stellar customer experience is at the center of our mission. By automating our service assurance process with Juniper's cloud-native [Paragon Active Assurance solution](#), our engineering and operation organizations can guarantee that scheduled changes in our core and access networks do not impact customer experience, which allows us to mitigate expensive repairs." – Kenji Ogura, Director, IP Core Engineering, Consolidated Communications

Unleash Experience-First Networking

The convergence of [Cloud + 5G + Artificial Intelligence \(AI\)](#) is unleashing dynamic new real-time applications in every market segment. This leaves operators with a stark choice: they can use their next-generation network capabilities—ultra-low latencies, advanced edge compute, network slices tuned to the applications running on them—to take a more prominent and profitable role in the digital services ecosystem. Or, they can keep scrambling to meet user expectations with antiquated tools and watch their customers flee to the competition.

With Paragon Automation, there is a powerful toolset to bring Experience-First Networking to businesses. No matter how complex the network and services or how high the customers' expectations, it is possible to:

- **Assure consistently excellent experiences**, using active testing to validate the performance of services before activated, immediately after and throughout their life
- **Minimize risk** by modeling and analyzing new services, buildouts and optimizations before implementation, reducing failures and service level agreement (SLA) penalties
- **Deploy new services more quickly and accurately** with the ability to automatically deploy networks and activate services at scale
- **Turn network insights into predictive actions**, so potential issues can be fixed before users even know there's a problem
- **Maximize return on your network investments** by optimizing path computation and utilization of network resources
- **Continually improve your network and services** with continuous learning through network-focused ML analytics

By embracing Experience-First Networking, the standards for customer experience can be set in a 5G and multicloud world. Juniper can help get there. To learn more, visit www.juniper.net/paragon-automation.

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