

# SERVICE-CENTRIC OPERATIONS WITH ACTIVE ASSURANCE

## Challenge

Assurance solutions have been stuck using traditional monitoring systems, which are by nature reactive. Incomplete and inadequate service validation creates frustration for subscribers, leading to damaged reputations and churn. Assurance solutions must change the focal point from infrastructure to actively measuring actual service quality.

## Solution

With Paragon Active Assurance, operations can transform from a model in which we study devices and infrastructure to one where the quality of the actual network services is known. This gives service operations a highly effective solution to identify, understand, troubleshoot, and resolve issues before they impact services and customer experience.

## Benefits

- Proactively measure what matters—at the data plane
- Understand customer experience from an end-user perspective using synthetic L2-L7 traffic
- Guaranteed service quality
- Shorten time to resolve problems
- Locate performance issues before customers are impacted
- Know that changes are made right the first time
- Confirm that network service levels support business objectives

*The heightened assurance demands of the cloud and 5G era are upon us and service operations are evolving. Research has found that more than 60% of network problems are not discovered by operations, but rather by end users or not at all.<sup>1</sup> The key cause of this poor customer experience is untested network changes not being caught in time. Costing dearly economically, with dramatic negative impacts on reputation and customer retention, this model simply cannot be the foundation to meet service requirements for ultra-reliability, low-latency and high performance going forward.*

*With Juniper® Paragon Active Assurance, service operations teams can continually measure and monitor what truly matters through proactively understanding end to end service quality from an end-user perspective. This enables service operators to guarantee service quality by taking a service-centric approach to prevent problems proactively, before they impact customer services, and by rapidly locating issues when they do arise.*

## The Challenge

The 5G and cloud era are here, and there is an industry consensus that network automation and a new service assurance model are paramount if we are going to achieve the level of experience that customers expect today.

In yesterday's physical networks, topologies were static, services were not provisioned dynamically, and they almost never changed. Business applications were not very demanding, and they did not require strict network key performance indicators (KPIs). The end-to-end data plane topology and quality were well known.

Today's network services have a totally different level of complexity with virtual and constantly changing SDN-based overlay network topologies, network virtualization and telco clouds for multi-access edge networks, an increasing rate of change for dynamic provisioning, 5G slices that require proactive real-time service-level agreement (SLA) guarantees for quality of service, and data center service chains that need to be monitored with the end-to-end customer service. Service operations and IT/OSS are set for change. Evolving operations and assurance to differentiate through service quality is crucial to leading in the cloud and 5G era.

<sup>1</sup> "Understanding Network Brownouts," Juniper Networks <https://www.juniper.net/content/dam/www/assets/white-papers/us/en/understanding-network-brownouts.pdf>

## The Juniper Networks Service-Centric Operations Solution

The solution is to measure what really matters directly by performing active testing using synthetic L2-L7 traffic on the data plane that delivers true service performance visibility from an end-user perspective. This is fundamental to shifting from today's infrastructure- and device-centric approach to a service-centric operations model with active assurance.

Juniper Paragon Active Assurance is a programmable, active test, and monitoring solution for physical, hybrid, and virtual networks. It validates application and service performance at the time of service delivery and throughout the life of the service so that network changes are always tested and service quality continually monitored.

## Features and Benefits

Capabilities	Business Benefits
Automatically measure end-to-end service quality for each configured service	Deliver the service levels guaranteed to each customer and confirm quality of experience (QoE)
Automatically test the end-to-end service delivery chain	Quickly locate and fix issues along the end-to-end service path
Automatically issue "birth certificates" after every service configuration change	Ensure that service quality remains available and consistent after every configuration change
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Leverage one solution for all IP services, such as SD-WAN, global VPNs, wholesale transport services, VoIP, IPTV, and more	Benefit from economies of scale
Programmability and cloud-native deployment with a single platform	Easily onboard solution and integrate into IT/OSS ecosystems

## Solution Components

Service-centric operations can be implemented in your network by integrating Juniper Paragon Active Assurance with your existing network and service assurance solution.

The core component of Paragon Active Assurance is a cloud-ready multi-tenant Control Center, which provides a user-friendly Web portal GUI where operations staff can run on-demand tests and view real-time and aggregated results as well as KPIs and SLA monitoring metrics. The Control Center includes a feature-rich API, allowing external operations support systems (OSS) and Network Functions Virtualization (NFV) orchestrators to easily automate distributed activation tests or monitoring scenarios.

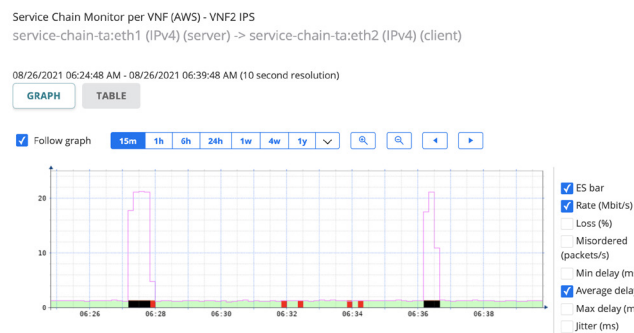


Figure 1: Paragon Active Assurance end-to-end service chain performance monitoring

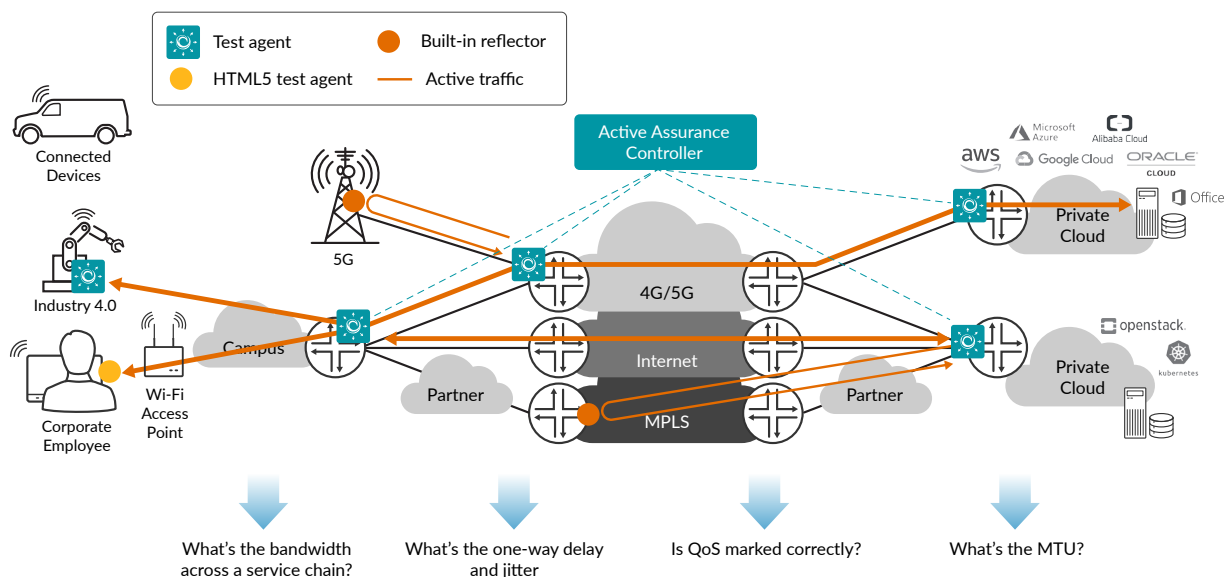


Figure 2: Paragon Active Assurance end-to-end service chain performance monitoring

Test Agents may be placed in strategic locations across your network for continuous quality monitoring. They may also be installed on demand for temporary purposes, such as activation testing of newly deployed services. Test Agents are available in several formats: as software to be run as a virtual machine on a hypervisor; as a container application; or as a software appliance for installation on dedicated x86 hardware, and available for all public clouds.

The Paragon Active Assurance software-only approach to flexible and automatable assurance makes the solution suitable for physical, hybrid, and virtual environments—either on-premises or in public clouds. This provides a next-generation assurance solution that is suitable for any network topology and use case today, as well as for dynamic, software-driven networks of the future.

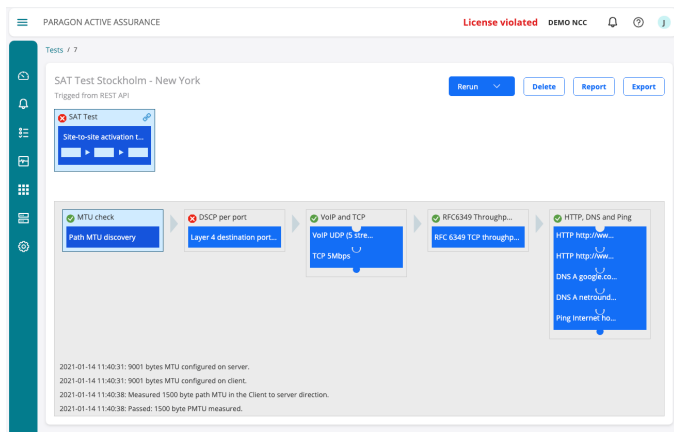


Figure 3: Paragon Active Assurance test template builder

## Summary—Measure What Matters

To build a true service operations center, you need to put the services in the center. With service-centric operations through Paragon Active Assurance, communication service providers can have a service operations center that can effectively display

violated service level objectives and SLAs as monitored with active service quality testing measurements.

Paragon Active Assurance enables you to measure what matters directly by performing active testing using synthetic L2-L7 traffic on the data plane that delivers true service performance visibility from an end-user perspective. This gives service operations a highly effective solution to identify, understand, troubleshoot, and resolve issues before they impact services and customer experience.

Proven in over 200 customer deployments worldwide, the Juniper service-centric operations solution is already in production with many mobile operators, business service providers and global enterprises. Leverage Paragon Active Assurance within our full Juniper Paragon Automation Portfolio for experience-driven automation across the entire network lifecycle.

## Next Steps

- Read our [white paper on “Service Assurance in the 5G and cloud era”](#) to learn more about the shift from the device-centric model to service-centric operations with active assurance.
- See our [Juniper Paragon Active Assurance datasheet](#) for product information.
- Contact your [Juniper account representative](#) to schedule a demo today!

## About Juniper Networks

At Juniper Networks, we are dedicated to dramatically simplifying network operations and driving superior experiences for end users. Our solutions deliver industry-leading insight, automation, security and AI to drive real business results. We believe that powering connections will bring us closer together while empowering us all to solve the world’s greatest challenges of well-being, sustainability and equality.

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