

# SERVICE-CENTRIC OPERATIONS WITH ACTIVE ASSURANCE SOLUTION BRIEF

Detect And Fix Network Problems Before End Users Notice, With A Self-Service Solution That Tests And Monitors Any Network Service.

## Challenge

Service assurance is limited by traditional, reactive monitoring systems. Inadequate service validation frustrates network teams and end-users alike. Assurance solutions today need visibility and control over experiences, not simply network connections.

## Solution

Active Assurance transforms operations from a model in which we monitor devices and infrastructure to one where we focus on service quality and experiences. It provides the power to identify, mitigate, and resolve issues before they impact the end-user.

## Benefits

- Proactively measure end-user experience on the data plane
- Know user experience, don't simply estimate it
- Test and verify new services or changes even with no active users
- Test and monitor with native test agents in Juniper ACX and PTX routers
- Locate and resolve performance issues before customers are impacted
- Confirm that network resource capacity can support business objectives

## The Challenge

Enterprises and [service providers](#) that manage their own transport ([WAN](#) or core) networks support use cases that are intolerant of less than flawless connections. Whether it's low latency connectivity in financial services, massive bandwidth in advanced research networks, or highly resilient enterprise VPNs; the assurance of these use cases must start with testing and monitoring the end-user experience, on the data plane.

Most networks' data plane testing and monitoring capabilities are either non-existent or lacking in usability and functionality. More than 60% of user-impacting problems are not discovered by network operations teams. Instead, the problems are discovered by end-users or not discovered at all. Substandard monitoring leads to failed service deployments and changes, unstable services, and lengthy outages. With programmability becoming more extensive in modern networks, leading to more frequent changes and greater complexity, the need to address this challenge is urgent.

## The Solution

Our [Active Assurance](#) solution is designed to be easy to use, flexible enough to support testing and monitoring of any network service, and pervasive (with testing and monitoring from any location in the network). Enterprise and service provider customers use Active Assurance from [Juniper Paragon Automation](#) to continually measure and monitor end-to-end service quality from an end-user perspective. This lets service operators deliver more resilient service quality by detecting problems proactively, often before they impact user experience. If user-impacting issues do arise, operators can rapidly locate, prioritize, and resolve them.

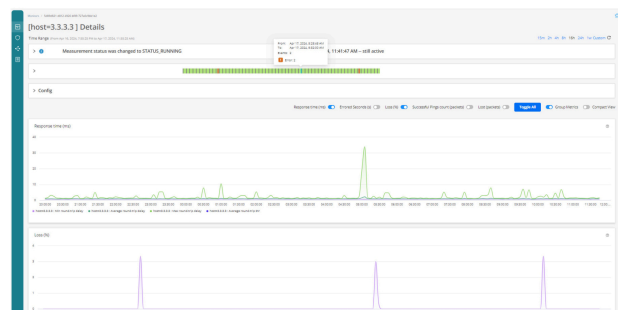


Figure 1: An example of a monitoring dashboard in Juniper Paragon

The solution performs active testing using synthetic Layer 2 to Layer 7 traffic on the data plane to provide 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.

Active Assurance from Juniper Paragon Automation is a user-configurable 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 is continually monitored.

### Features and Benefits

Capability	Business Benefit
Automatically measure end-to-end service quality for each configured service, including: <ul style="list-style-type: none"> <li>• VoIP mean opinion score (MoS)</li> <li>• Microsoft Office service connectivity</li> <li>• TWAMP (two way active measurement protocol) latency</li> <li>• RTT (round trip time) delay</li> <li>• HTTP connectivity</li> <li>• DNS response times</li> </ul>	Deliver the service levels guaranteed to each customer and confirm quality of experience (QoE).
Automatically monitor the end-to-end service chain, including <b>segments of the service chain that you don’t own or control</b> .	Quickly locate and fix issues along the end-to-end service chain that lead to jitter and packet loss. Quickly identify and escalate problems originating from 3 <sup>rd</sup> parties.
Automatically notify network engineers or 3 <sup>rd</sup> party systems (via API) when performance thresholds are crossed.	Focus on resolving customer-impacting problems first. Enable proactive customer, user, and 3 <sup>rd</sup> party engagement.
Automatically issue “birth certificates” after every service configuration change	Ensure that service quality remains available and consistent after each configuration change with no manual effort required.
Leverage one user-configurable capability for assurance of all IP services, such as SD-WAN, global VPNs, wholesale transport services, VoIP, IPTV, and more	Reduce assurance system OPEX, avoid duplicate functionality and simplify issue correlation and root-cause analysis.
Programmability and cloud-native deployment with a single platform	Easily onboard solution and integrate into IT/OSS systems.

### Solution Components

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

The core component of Paragon Active Assurance is a cloud-native multi-tenant control center. It 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 that allows external operations support systems (OSS) and network functions virtualization (NFV) orchestrators to easily automate distributed activation tests or monitoring scenarios.

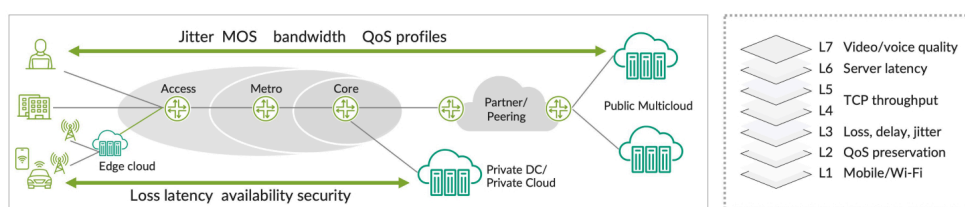


Figure 2: Active Assurance end-to-end service chain performance monitoring

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 Automation 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 suitable for any network topology and use case today, and for dynamic, software-driven networks of the future.

## Router-native test agents

New models of [Juniper routers](#), such as the [ACX](#) and [MX series](#) of routers, come with active assurance test agents built-in, so you can immediately increase the granularity of your active monitoring and testing insights without having to manually install test agents. You router effectively becomes a powerful sensor that seamlessly interacts with the active assurance control center as soon as you connect it.

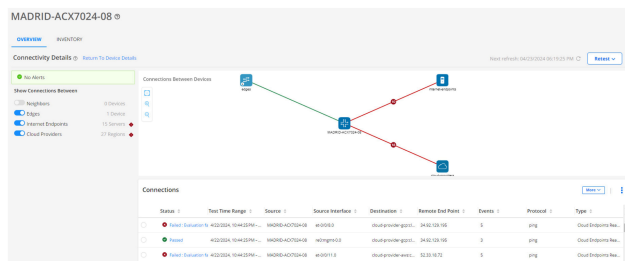


Figure 3: An ACX router with native test agent that can actively monitor and test connections

## Measure what matters most

To build a truly differentiated service management capability you need to put the services in the center. With service-centric operations through Active Assurance, enterprises and communication service providers effectively track service level objectives and SLAs as monitored with active service quality testing measurements.

Paragon Active Assurance lets you 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: [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!

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