

# ZERO-TOUCH COMMUNICATION SERVICES TESTING

## Challenge

Incomplete and inadequate service validation creates frustration for subscribers, leading to damaged reputations and churn. Service delivery teams need a way to automatically validate service levels before releasing to their customers.

## Solution

Paragon Active Assurance automates service activation and testing processes, enabling zero-touch testing and service-level monitoring while accelerating service quality troubleshooting.

## Benefits

- Verify and ensure that services are configured properly the first time
- Validate service changes, ensuring that network configuration modifications do not impact service performance
- Reduce service delivery failure rates
- Accelerate time to revenue
- Refocus staff on improving overall efficiency, not wasting time on repetitive network management tasks

*Research shows that many services are delivered without the proper service activation testing, even at a primitive level. That's because activation testing historically requires expensive field efforts, which service providers have been reluctant to undertake due to capital and resource restrictions. As a result, problems are often discovered later by customers, resulting in costly field work and customer frustration.*

*With Juniper® Paragon Active Assurance, engineering teams can validate that services have been turned up properly, assuring them that network configuration changes have not affected the customer experience.*

## The Challenge

The digital economy is largely dependent on reliable, high-performance, interdependent network connections—many built over private and public clouds. Despite this, a majority of service providers are unable to successfully turn up services and efficiently onboard their customers.

The ability of service delivery teams to quickly confirm that WAN and wholesale transport services have been configured properly is sorely lacking. In response, most service providers simply skip the turn-up testing phase or use inadequate testing methods, resulting in failed deliveries and expensive troubleshooting.

Contributing to the problem is the fact that service delivery teams lack visibility into all network domains, making it difficult to efficiently isolate issues along the end-to-end connection.

## The Juniper Networks Zero-Touch Testing Solution

The solution is to automate the activation testing process to guarantee that service levels are delivered and customers can be successfully onboarded. Zero-touch testing, a capability supported by Paragon Active Assurance when integrated with an orchestrator, helps engineering and operations teams better understand the customer experience, as well as the performance of the end-to-end service chain supporting each service over complex, multilayered networks.

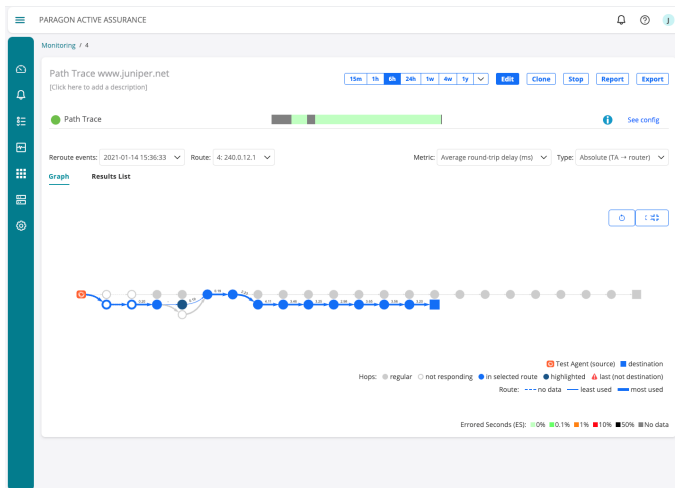


Figure 1: Paragon Active Assurance end-to-end service chain performance monitoring

## Features and Benefits

Paragon Active Assurance delivers the following capabilities and resulting business 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
Ensure that service quality remains available and consistent after every configuration change	Refocus staff to improve overall efficiency without wasting time on repetitive service assurance tasks
Leverage one solution for all IP services such as SD-WAN, global VPNs, wholesale transport services, VoIP, IP-TV, and more	Benefit from economies of scale

## Solution Components

Zero-touch testing can be implemented in your network by integrating Juniper Paragon Active Assurance with your existing network automation solution.

The core component of Paragon Active Assurance is a cloud-ready multitenant 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 key performance indicators (KPIs) and service-level agreement (SLA) monitoring metrics. The Control Center includes a feature-rich API, allowing external OSS and Network Functions Virtualization (NFV) orchestrators to easily automate distributed activation tests or monitoring scenarios.

The Control Center remotely controls software-based and traffic-generating Test Agents, which provide distributed measurement metrics. It also displays detailed, real-time results and statistics actively measured by Test Agents and reflector streams across multiple applications, services, and interfaces. Test Agent capabilities include service activation (Y.1564, MEF 48), network performance (UDP, TCP, Y.1731, TWAMP, path trace), Internet performance (HTTP, DNS), and rich media (IPTV, OTT video, VoIP telephony, and SIP), as well as support for controlling Wi-Fi interfaces and performing remote packet inspection.

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.

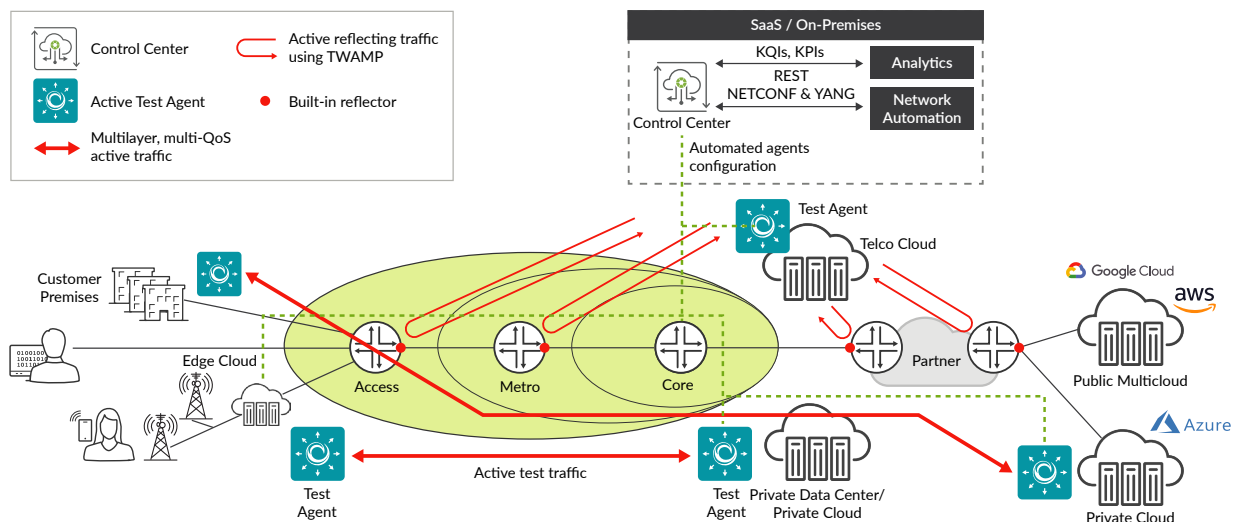


Figure 2: Zero-touch testing solution

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.

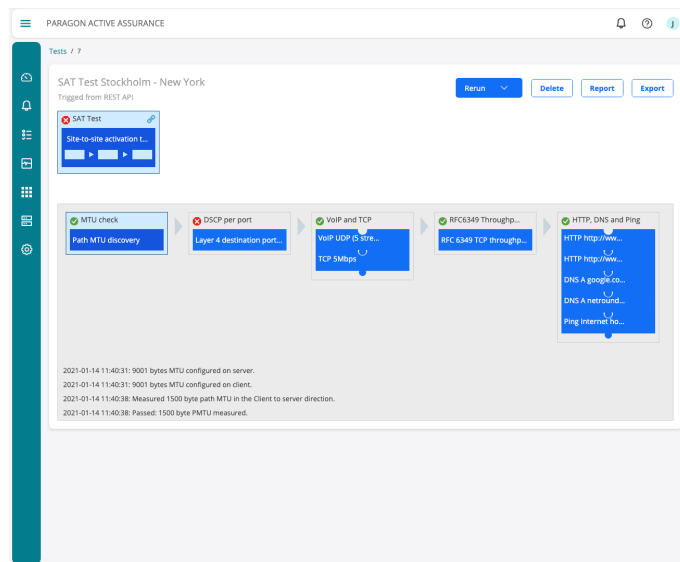


Figure 3: Test Template Builder

## Summary—Speed-Up Delivery of Quality Assured Services

With zero-touch testing, communication service providers can fully automate their testing processes as soon as a new business service connection is established. Zero-touch testing also automatically creates “birth certificates” for customers, engineers, and account teams after every service configuration change, confirming that a service is meeting the SLA and pinpointing potential issues so they can be resolved before they impact customers.

Using zero-touch testing, service delivery teams can troubleshoot service issues remotely without having to travel to customer sites and exchanges along the path. Engineering teams can determine whether a third-party partner is delivering the required connectivity in a matter of hours instead of the usual days.

As a result, staff efficiency is increased, the number of failed deliveries is reduced, and customers are onboarded much faster, improving the overall customer experience.

## Next Steps

For more information, please contact your Juniper account representative and see the Juniper Paragon Active Assurance datasheet.

## About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

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