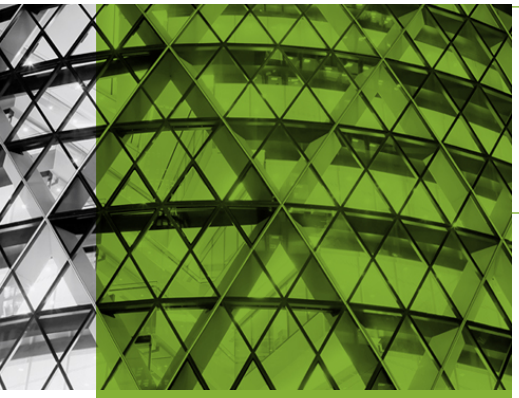


PARAGON AUTOMATION DATASHEET

Product Overview

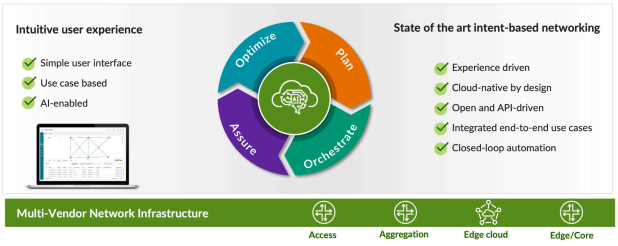
Paragon Automation supports service providers and enterprises to deploy WAN automation use cases, including:
— Device Lifecycle Management
— Network Trust & Compliance
— Intent-Based Service Orchestration
— Active Assurance
— Observability

Paragon Automation runs on a cloud-native platform and includes support for self-service configuration and customization of these use cases, which span the full device, network, and service lifecycles. This includes:
— Self-service design of assurance dashboards
— Self-service design of service orchestration models
— Importation of customized service models.

Product Description

Juniper Paragon Automation provides end-to-end transport network automation with the flexibility and resiliency of a common cloud platform. Our use case-based approach to enabling business outcomes simplifies the adoption of network automation of the full device, network, and service lifecycle from Day 0 to Day 2. With Paragon Automation, you can empower your network operations teams to dramatically boost productivity and increase operational efficiency by freeing skilled staff from repetitive, low-value tasks. Intelligent detection and troubleshooting significantly reduces MTTK and MTTR, and closed loop automation delivers a reliable, flawless experience to the end user.

Features and Benefits



Automation is fundamental to delivering consistent, exceptional experiences in transport networks. However, the majority of network management continues to be manually intensive and automation tends to be implemented piecemeal. Common processes like device onboarding and service provisioning can take days or weeks. Service delivery and change implementations often fail due to misconfiguration from human error. Device outages and brownouts lead to long service outages that often go undetected until reported by end users. Investigating and resolving problems is a lengthy, manually intensive process and constant changes in traffic patterns make it impossible to keep up with the configuration changes required to guarantee service levels in real time.

Juniper Paragon Automation addresses these challenges so you can achieve your desired business outcomes, use case by use case. It helps you accelerate innovation, increase operational efficiency, and deliver flawless experiences. Paragon Automation makes automation in the transport network intuitive. Benefits include:

- Accelerated time to market and time to revenue
- Enhanced SLAs and service quality
- Enhanced service and device resilience
- Reduced incremental OpEx and network TCO
- Cut MTTK/MTTR to minutes

Automated device lifecycle management

Juniper Paragon Automation provides automated, consistent, and secure device lifecycle management that maintains the entire device lifecycle, including Day 1 and 2 automation of onboarding plans, guided device field installations, configuration, updates, compliance audits, software/hardware end-of-life checks, and intelligent monitoring and problem troubleshooting for Day 1 and 2 operations. Inventory is also automatically updated.

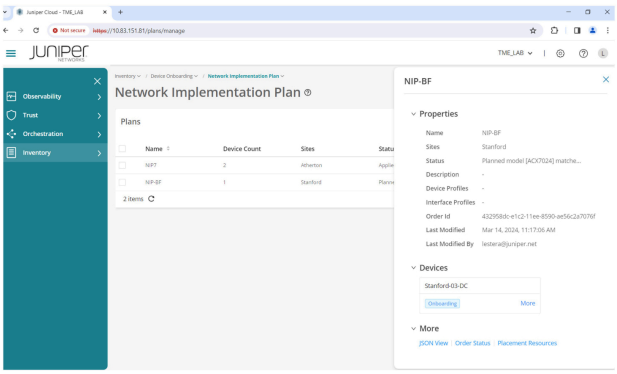


Figure 1: A network implementation plan drives the automation of device onboarding

Guided orchestration design for device onboarding and change management

Paragon Automation provides a Day1 and 2 orchestration design application that centers on intent—making intentions reality. It makes it possible for specific planning activities for the procedure to be done automatically. During device onboarding, the operator can rely on Paragon Automation to automate the process. The intent model for device onboarding orchestration design makes the process elegantly simple and efficient. By reducing the number of steps required and providing intuitive guidance through the process, automation makes it extremely easy to onboard new devices and make future updates.

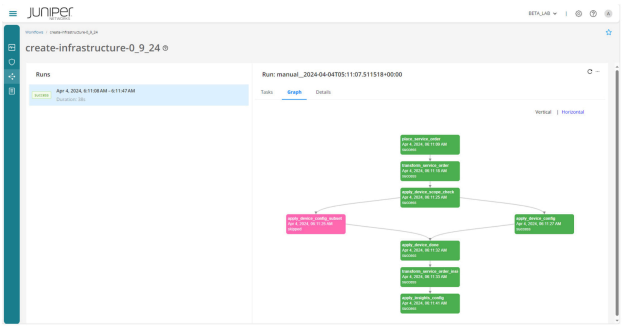


Figure 2: The dashboard shows an orchestrated design of device onboarding workflow

Automated, guided device onboarding.

Field technicians initiate the secure, automated device onboarding after the intents are designed and configuration templates are created. The technician signs on to the Paragon Automation field technician application to trigger Paragon Automation specifically for that device. Paragon Automation images the latest software, performs secure zero-touch configuration and provisioning, checks device health and network performance, and updates inventory so that devices are fully ready for service in minutes.

Meanwhile at the backend, network operation center (NOC) engineers have full oversight on every onboarding activity happening across the network. Thanks to Paragon Automation, engineering and operation teams are in sync with the network state in real time. After the field technician completes the work order, the network is ready for Day 1 and 2 operations.

Intent-based service orchestration engine

Intent-based service orchestration enables accelerated, error-free definition, deployment and management of the network services that run on customer-managed transport networks by leveraging best practice model-based designs and automated intent-based service provisioning and orchestration. Paragon Automation includes a purpose-built orchestration engine for this purpose.

Each category of service is provided in the form of a standardized and user-configurable model, including placement and transformation rules. The user only needs to define the Customer Service Intent (CSI), and Paragon automates the entire service creation process from there with a shared workflow engine. This includes defining the network service instance(s) (NSI), identifying/assigning network resources, committing and verifying device configurations, and creating service monitoring dashboards that process the data-plane and device telemetry as needed to visualize performance and trigger remediations to maintain the stated intent.

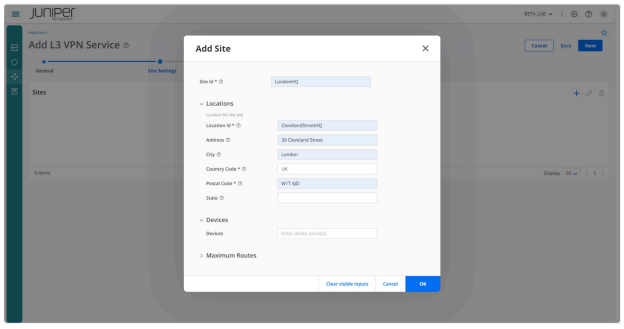


Figure 3: Designing an L3VPN based on a declarative statement of business intent

Alongside the standard service categories that come with the solution, Paragon Automation is designed to simplify the creation of custom service models by leveraging widely-used templating and modeling languages (YANG modeling language, JINJA templating language, JQ/JSON based placement and transformation rules). You can start from an existing service model or build your own entirely from scratch, depending on the extent of customization required.

Automated network trust and compliance management

Paragon Automation enables automated, consistent, and reliable network trust and compliance by continuously verifying, confirming, and quantifying the trust status of your network, providing prioritized recommendations to enhance your trust score (for example, with software updates or reconfigurations). It measures the risk of integrity impairment and overall trust posture by automatically evaluating hardware and software component integrity versus vulnerabilities identified in SIRT advisories. It assesses compliance against standards and specifications defined by the NIST.

Paragon Automation provides an intuitive user interface with easy-to-use dashboards, alarms, and notifications on actionable integrity impairments, a network trust score, trust score graphs, and more. This information helps maintain your network integrity end-to-end. Key features and functionality are:

- Trust-score calculation based on prerequisite, variable, and reputational factors
- Integration with compliance standards, vulnerability assessments, and more
- Comparative analysis and benchmarking of devices based on trust scores
- Visual representation of trust and compliance scores using graphs and indicators

With a network trust score, you gain a quantifiable measurement that indicates the level of compliance with rules defined in a benchmark document applied to your network.

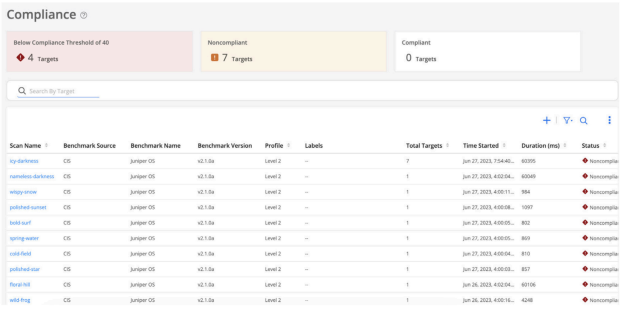


Figure 4: Compliance scans are based on CIS benchmarks

Network Observability

Network engineers rely on Juniper Paragon Automation network observability to quickly detect and investigate issues. It goes beyond event views to list alarms, alerts, and syslog messages alongside telemetry data. It also presents high-level Day 2 supervision views that aggregate all the volumes of telemetry and other monitoring data. Paragon Automation automatically creates network observability dashboards to align with orchestrated designed plans. The user is not distracted by too much information since the most relevant information is designed into the intent of the process from the start. Operators can focus on key outcomes such as SLA adherence, network health, and key networks issues that might impact uptime and other KPIs. With only a quick look at the dashboard, network operators can see an overview of the network's health and a physical network topology with connectivity and status indicators to show where urgent issues reside. Dashboards show areas of interest where problems are occurring across devices, the network, interfaces, services, and overall trust compliance. Fault management and troubleshooting are supported with filterable alert, alarm, and log views.

Active Assurance

Paragon Automation's Active Assurance use case works by measuring what matters directly: end-to-end service quality. It does this by automating software-based test agents deployed throughout the network to actively send and receive synthetic L2 through L7 traffic on the data plane to simulate an end user. With active assurance, you can continuously measure one-way delay and jitter on the end-to-end customer service and within each of the network segments supporting a service. This allows you to pinpoint potential issues in the service delivery. Network operators can then continually and automatically validate performance against objectives. They can detect when customer services do not meet guaranteed performance levels, better locate problems, and troubleshoot them so corrective actions are taken before experience is impacted.

Active Assurance accurately measures the delivery of user intent, so in combination with the intent-based service orchestration engine and network observability, it provides detailed, actionable insights that support the delivery of user intent through informed preventative and remedial actions.

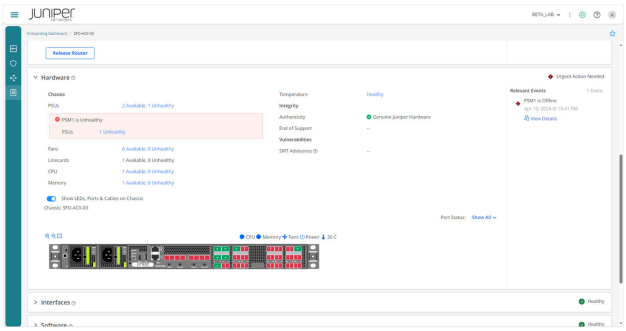


Figure 5: Paragon Automation reveals network topology

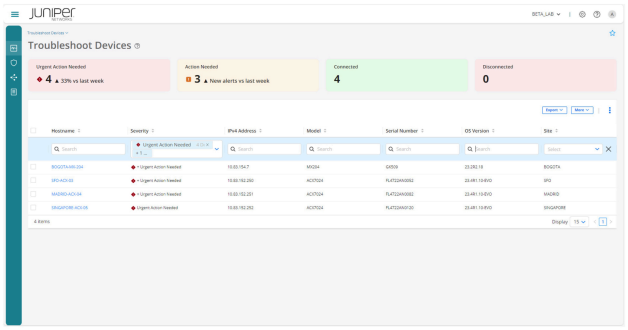


Figure 6: Paragon Automation identifies alarms and problem severity

About Juniper Networks

Juniper Networks believes that connectivity is not the same as experiencing a great connection. Juniper's AI-Native Networking Platform is built from the ground up to leverage AI to deliver the best and most secure user experiences from the edge to the data center and cloud. Additional information can be found at Juniper Networks (www.juniper.net) or connect with Juniper on X (Twitter), LinkedIn, and Facebook.

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