Cisco Provider Connectivity Assurance

Proactive assurance for resilient network services

Want to detect and fix hidden issues in your network before end-user quality of experience is impacted? Cisco® Provider Connectivity Assurance (formerly Accedian Skylight) delivers subsecond performance monitoring with unparalleled precision for business-critical networks, services, and applications. Take preventive actions with AI-native predictive analytics and insights.

Overview

Provider Connectivity Assurance is designed to deliver granular service-centric performance visibility and "provider-grade" assurance for Communications Service Providers (CSPs) and any business or public sector entity that operates their own private network. Continuous, real-time visibility into end-to-end network and service quality, as well as per-segment visibility with microsecond precision, enables you to proactively identify and resolve performance issues across your entire network infrastructure.

The solution combines advanced data collection, analytics, and visualization capabilities to give network teams a deep understanding in real time of network and service performance. Granular performance metrics from Provider Connectivity Assurance Sensors can be correlated with Cisco device telemetry and/or third-party data for root cause analysis. AI-native analytics provide real-time anomaly detection and predictive insights to accelerate troubleshooting and automate issue remediation. Performance alerts can be sent directly to Splunk AI Ops cloud data platform for unified observability and cross-domain monitoring enabling faster decision-making and operational intelligence.

Provider Connectivity Assurance solves the challenges of fragmented multi-domain tools and blind spots in terms of visibility for services that span multiple network layers or multi-vendor networks. Real-time and end-to-end visibility into network services performance and AI-native analytics enable proactive management of resilient services and experiences. Provider Connectivity Assurance creates value enabling organizations to offer differentiated networks and services with end-customer reporting portals, assured Quality of Experience (QoE), and enhanced Service-Level Agreements (SLAs).
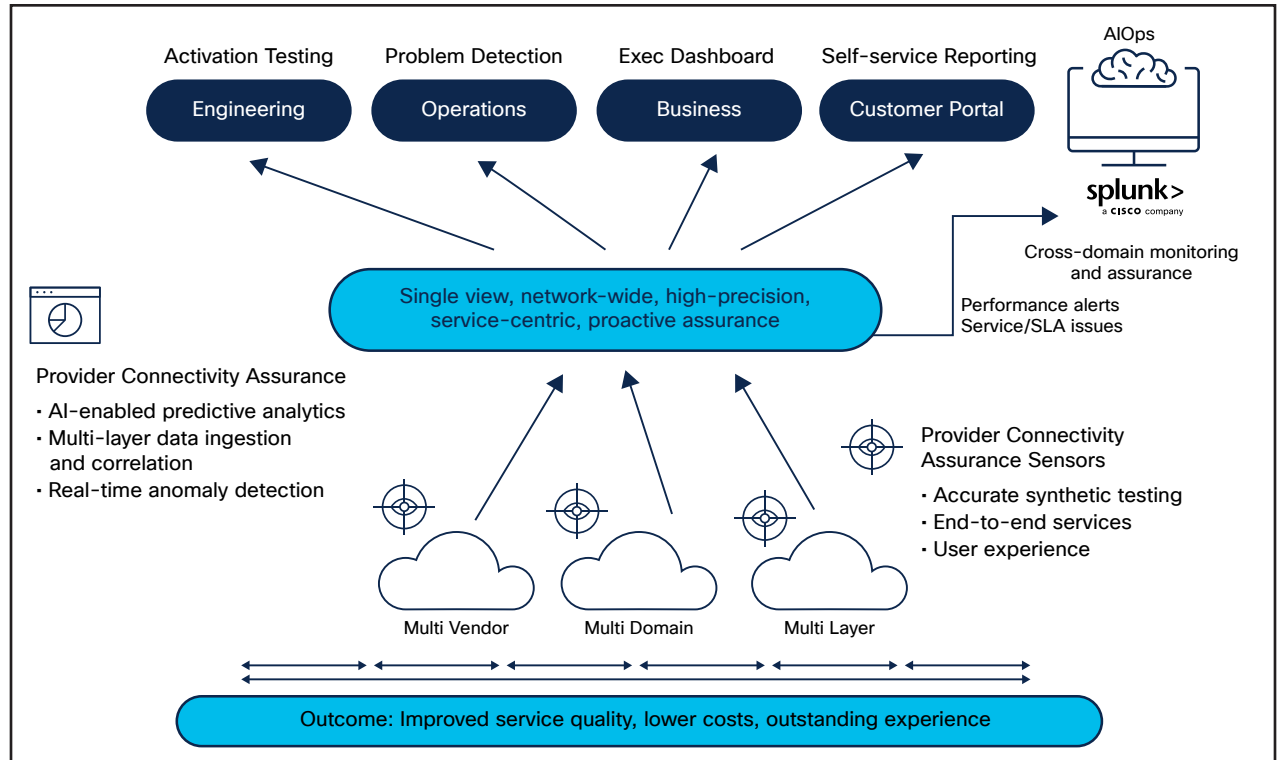

Figure 1.   Cisco Provider Connectivity Assurance provides real-time visibility and unparalleled accuracy for resilient networks and services

Benefits

- Gain real-time control over and visibility into your entire network, services, and application performance with high-resolution, subsecond monitoring and accurate Key Performance Indicators (KPIs).

- Accelerate troubleshooting with a single view of your network and end-to-end service quality, backed by AI-enabled analytics for rapid anomaly detection and root cause isolation.

- Find and fix problems before your end users are impacted with proactive monitoring and predictive analytics.

- Differentiate services with advanced SLAs and end-customer reporting with proactive alerts.

- Get ahead of service issues with predictive alerts to network automation and AI Ops platforms for closed-loop control.

Simplified operations, resilient network services

- Multi-domain networks, management complexity, and fragmented silos of tools make it challenging to maintain visibility into and control over your network and service performance.

- With networks critical to business and daily life, providers are accountable for assuring network availability and performance using real-time monitoring, fast issue detection and resolution and predictive AI analytics to prevent issues.

- End-customers' perception of "slow" applications and networks can be measured in milliseconds, which requires subsecond detection of latency and intermittent delays and issues.

- Service providers need to grow revenue from premium networks as a service with stringent performance requirements, advanced SLAs, enriched real-time performance reporting, and proactive alerts for end customers.

What you buy

Provider Connectivity Assurance enables proactive assurance of business-critical networks, services, and applications with synthetic network and service testing and user experience monitoring. A range of software or hardware-based Assurance Sensors deliver standards-based testing and monitoring with unparalleled precision. Key capabilities include millisecond test measurement frequency, microsecond accuracy for time-based measurements, sub-1% packet loss detection, and one-way metrics. The Assurance Sensors are vendor independent, multi-domain, multi-layer, and easy to deploy everywhere at scale.

Network-wide performance can be visualized in a single view with metrics, real-time KPIs, and SLA reporting. This simplifies troubleshooting, speeds up issue resolution and avoids the need to use multiple tools. Synthetic performance data can be analyzed together with real-time user experience metrics. Both Cisco and non-Cisco telemetry data can be ingested and correlated for enriched insights. AI-powered issue detection, predictive forecasts, and dynamic threshold alerts help prevent user's quality of experience from being impacted. Open APIs drive alerts northbound and send insights to observability, automation and AI Ops data platforms for closed-loop control.

The flexible dashboard and reporting interface allows network teams to easily visualize, analyze, and share performance data. The same multi-tenant solution can be offered to end customers for enhanced real-time performance visibility and SLA reporting, as a value-add to differentiate your network services.

Key capabilities

- **Scale up with hosted Software as a Service (SaaS):** Deploy a managed, cloud-native performance analytics with a low Total Cost of Ownership (TCO) that scales rapidly to provide real-time and highly granular network performance monitoring.*

- **Harness the power of metadata:** Use metadata to discover correlations that more easily suggest potential root causes, filter and group data, and control permissions.

- **Leverage machine learning and AI:** Reduce noise with data cleaning and deduplication, examine causality with trend analysis and correlations, capture anomalies with alerts based on baselines, and extrapolate future events with forecasting for more effective analysis and troubleshooting workflows.

*On-premises deployments of Cisco Provider Connectivity Assurance are available conditionally on request.

- **Automate service assurance:** Seamlessly add assurance as you deploy a new service with real-time alerts that enable the network controller to take corrective or optimization actions on the network.

- **Cross-domain monitoring and assurance:** Reduce data silos by unifying and correlating service performance and network performance in a single view for multiple stakeholders.

Table 1.   Use Cases

Use case	Description
Real-time SLA visibility	Monitor and police SLAs for accountability while proactively addressing performance issues.
Critical network monitoring	Boost operational efficiency with proactive assurance and microsecond-level visibility across your network, driving down Mean Time to Resolution (MTTR) while enhancing QoE.
Business-to-Business (B2B) service differentiation	Multi-tenant end-customer portals for real-time SLA visibility and alerting, creating new revenue opportunities to upsell and differentiate your services.
Automated assurance	Drive closed-loop outcomes for the entire service lifecycle with real-time service visibility and predictive analytics for early issue detection.
Multi-layer assurance	Reduce the number of tools and MTTR with a single view end-to-end service performance across multiple network layers, like segment routing and Routed Optical Networking.
Mobile backhaul and edge monitoring	Optimize digital experience with real-time service visibility while assuring your end-to-end 5G transport.
Unified performance monitoring and observability	A single view of your network and services in Splunk. See customer experience and performance across every connected domain for service resilience across your digital infrastructure.

Services

Cisco offers a wide range of services to help accelerate your success in deploying and optimizing the Cisco Provider Connectivity Assurance platform on your network. The innovative Cisco Services offerings are delivered through a unique combination of people, processes, tools, and partners and are focused on helping you increase operating efficiency and improve your data center network. Cisco Advanced Services uses an architecture-led approach to help you align your data center infrastructure with your business goals and achieve long-term value. Cisco Smart Net Total Care® Service helps you resolve mission-critical problems with direct access at any time to Cisco network experts and award-winning resources.

> "This is extremely powerful in terms of customer experience. It helps to avoid tickets as customers can see for themselves what happened with their service. This reduces tension and increases customer satisfaction."
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> - Bart Janssens, Senior Specialist, Packet Architecture, Colt
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> "With service-centric assurance and granular visibility, we can prevent degradations, automate actions for improvements, and better communicate with our customers."
>
> - Mahesh Anjan, Senior Product Technology Executive, AT&T Business

Proactively assure every service experience

Leverage Cisco Provider Connectivity Assurance's AI-native predictive insights and real-time performance visibility to find and fix issues before users are impacted. For additional information, visit **go2.cisco.com/provider-connectivity-assurance**, then contact your Cisco sales representative or Cisco authorized channel partner.

Benefits

- 50% more efficient problem diagnosis
- 35% reduction in mean time to resolution
- 25% less churn from high-quality QoS
- 30% increase in sales by providing detailed visibility into congested links that need to be supplemented

Source: ACG Research, Economic Benefits of Service-Centric Assurance Research paper, 2024