



Calix Speed and Performance Insights

Broadband service quality is a key indicator in measuring how well your subscribers value their service. While measuring the broadband experience subjectively with the subscriber is challenging for broadband service providers (BSPs), using objective measures that provide consistent feedback over time and in real time is a great indicator for how delighted your subscribers are.

Calix Speed and Performance Insights, a capability of the Calix Broadband Platform, gives BSPs just that with real-time and historical information on the level of service provided to customers. This integrated solution enables flexible speed and latency testing options, allowing for end-to-end visibility of network performance, SmartLife™ managed services, and systems. Speed and Performance Insights provides the most operationally efficient and relevant approach to understanding the subscriber's experience. It comes with a common set of on-demand and automated testing tools that can be used by every team across your organization.

- Field technicians can verify network performance during onsite installations, repairs, and upgrades.
- Customer service representatives (CSRs) can analyze and triage subscriber performance issues on trouble tickets.
- Marketers can leverage subscriber insights for churn assessments.
- Operations team can cost-effectively and rapidly troubleshoot, analyze, and resolve network performance issues.



Additionally, the same platform for on-demand speed testing can be utilized for FCC performance testing and reporting to comply with funding programs—including Connect America Fund (CAF), Rural Digital Opportunity Fund (RDOF), and Alternative Connect America Cost Model (ACAM). As specific testing and reporting requirements are confirmed for BEAD by NTIA, Calix is also positioned to readily support these BEAD testing requirements.

Technical Overview

Speed and Performance Insights is a comprehensive and flexible speed testing solution that leverages a standards-based testing approach utilizing Internet Engineering Task Force (IETF) compliant protocols to simulate subscriber traffic. From this traffic, measurements are derived for speed, latency, and packet loss between a test endpoint at the subscriber's premises to a test server either at the edge of the BSP's network or to a designated meet point at an Internet Exchange Point (IXP).

The performance measurements on the simulated traffic that traverse the network provide one of the best indicators of a subscriber's experience and is highly correlated to the perceived quality of service the subscriber is receiving.

The speed testing framework consists of three basic components:

- 1 **Test endpoints**
- 2 **Test controller**
- 3 **Test servers**

TEST ENDPOINTS

With Speed and Performance Insights, the test endpoint software is built into Calix GigaSpire®, GigaPro®, and GigaPoint® systems, eliminating the need for a separate test box at the subscriber premises. It also means you can test anywhere you have deployed a Calix premises system, providing extensive testing coverage across your entire network.

Select Calix optical network terminal (ONT) systems can also act as speed and latency test endpoints that help isolate problems to the access network versus subscriber premises (ideal for open access use cases).

In addition, Speed and Performance Insights supports certified third-party premises systems for FCC performance testing and most on-demand testing scenarios.



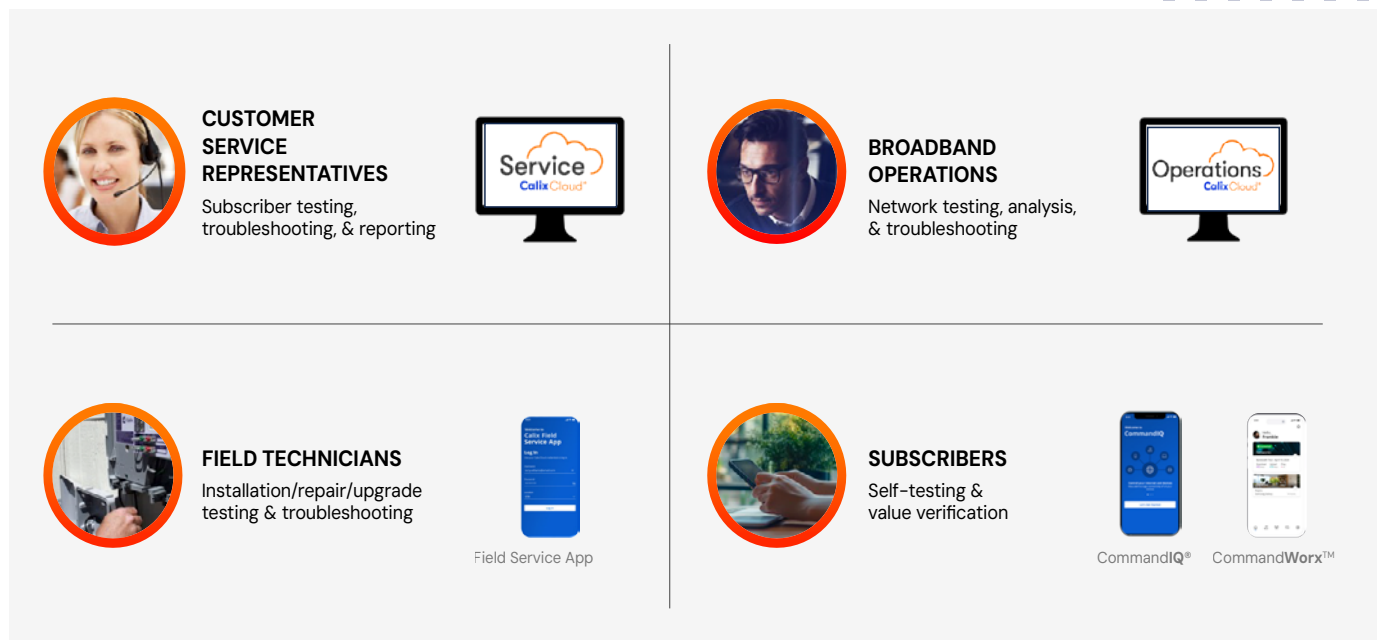


TEST CONTROLLER

Test controller, reporting, and analytics are built into Calix Cloud®. In addition to providing test controller functionality—such as diagnostics requests to the premises systems—Calix Cloud also collects, analyzes, and displays test data as insights to drive faster analysis and issue resolution.

There are several Calix Cloud applications (or testing tools) that enable support and operations teams and subscribers to easily test and validate the broadband service experience:

- CSRs can use Calix Service Cloud to initiate on-demand speed testing for troubleshooting subscriber issues.
- Operations or network teams can use Calix Operations Cloud for on-demand testing to the ONT for troubleshooting or analyzing network performance.
- Field technicians can use the Calix Field Service App to test from the GigaSpire or ONT systems as well as from in/outdoor locations throughout the residence to optimize installations and repairs.
- Subscribers can initiate speed and latency tests from their CommandIQ® mobile app (CommandWorx™ app for small business owners) to check the quality of their broadband service.





Use Cases

TROUBLESHOOTING AND RESOLUTION

Speed and Performance Insights incorporate a range of testing tools that help frontline support teams rapidly troubleshoot, resolve issues, and validate the subscriber experience. Flexible, multi-gigabit speed testing of up to 10 Gbps (including TR-143) ensures subscribers receive the benefits of their service tier in any market, plus on-demand testing of GigaSpire systems and certified third-party systems.

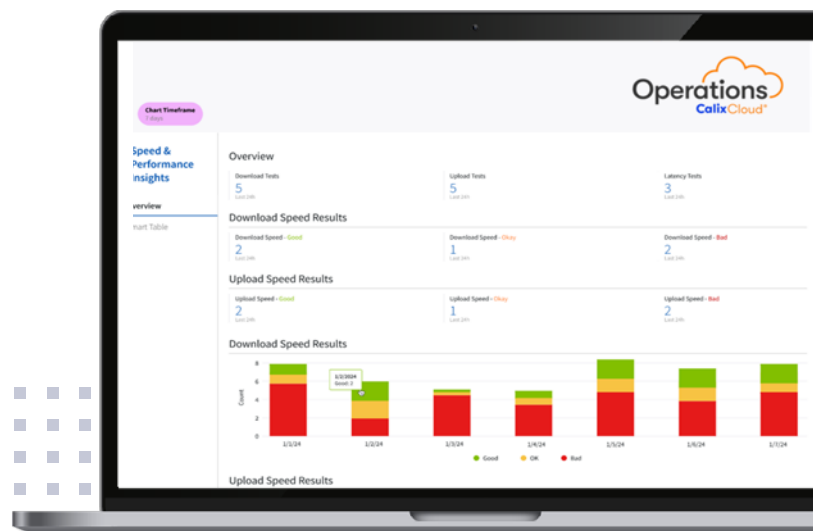
NETWORK PERFORMANCE TESTING

On-demand speed and latency testing for the latest generation of Calix ONTs* enables support and network operations teams to easily validate network performance, including open access networks. The availability of 90-day historical testing enables faster and more accurate problem isolation during real-time troubleshooting—increasing first-call resolution. Crucially, support and operations personnel can perform speed and latency tests directly at the ONT without requiring access to additional dedicated test equipment.

REPORTING DASHBOARDS

Calix Cloud provides reporting dashboards for FCC broadband testing, on-demand testing, Field Service application testing, subscriber-generated testing using CommandIQ, and automated background testing. Testing can be utilized for Wi-Fi gateways (including 3rd party) as well as select Calix ONTs.

- Enhanced Broadband Performance Dashboard: Provides BSPs with all the data and reporting needed to satisfy FCC broadband testing requirements. (Included as part of the [Calix FCC broadband performance testing service](#).)
- Speed and Performance Insights Dashboard:* Provides comprehensive test reporting and visibility of subscriber, field tech, customer support, and operations activities. This allows BSPs to analyze on-demand, background, room-to-room, ONT, and gateway testing—enabling quick and proactive identification of performance issues across a large population of test systems.





FCC BROADBAND PERFORMANCE TESTING

Speed and Performance Insights feature Calix's cloud-based global performance testing. This equips BSPs with the tools to comply with the FCC's speed, latency, and coverage requirements for funding programs. Additionally, the [Calix broadband performance testing service](#) provides expert guidance on setting up testing frameworks, along with best practices to ensure the successful completion of every step in the testing process.

INSTALLATION AND REPAIR VALIDATION

Accessed via the Calix Field Service App, Speed and Performance Insights makes it easy for field technicians to validate the service experience up to 10 Gbps with speed tests of Calix GigaSpire and GigaPro systems. Techs can also run performance tests on the ONT to isolate problems between the access and premises.* The Field Service App lets technicians test room-to-room as well as outside the premises to identify and resolve coverage and performance issues throughout the structure, and, if necessary, recommend additional mesh satellite units to ensure an optimal experience.

SUBSCRIBER SELF-TESTING

Subscribers can utilize speed testing to understand and self-monitor their service. Residential subscribers can access speed testing tools within the [CommandIQ](#) mobile app, and small businesses can run tests using the [CommandWorx](#) app. In addition, BSPs can offer their subscribers the option to utilize the Speed and Performance Insights browser-based speed testing tool, which can be branded to personalize the experience.**





Capabilities

MULTI-GIGABIT SPEED AND LATENCY TESTING

Support teams can run on-demand and background speed tests on up to 10 Gbps-capable Calix GigaSpire systems as well as certified third-party systems. Operations teams can test Calix ONTs for speed, latency, and jitter—including directly at the ONT—without needing to access premises equipment.*

TR-143 SUPPORT FOR GLOBAL DEPLOYMENT

Support for TR-143 ensures interoperability between devices and systems, enabling seamless deployment across global markets. Its standardized performance measurements, such as throughput and latency, provide consistent data collection to optimize broadband services worldwide.

FLEXIBLE TESTING SERVER OPTIONS

For on-demand or background speed testing, BSPs can use servers located in their data center or central office (CO)—or take advantage of Calix's global performance testing, a hosted, TR-143 cloud-based testing network.

MULTI-SERVER CAPABILITIES FOR GEO-DIVERSE MARKETS

BSPs can easily expand multi-gig speed and latency testing coverage to geographically diverse markets by deploying up to 10 servers. This helps mitigate latency during testing and increases accuracy.

INTELLIGENT AUTOMATION TO STREAMLINE TESTING

Auto-scaling for dynamic testing reduces failures due to server loads and optimizes test results. Auto selection of testing servers increases ease of use for support and operations teams.

INSIGHTS TO IMPROVE NETWORK AND WI-FI PERFORMANCE

Speed and Performance Insights reporting dashboards and key performance indicators (KPIs) drive improvements in network performance, support operational efficiency, and enhance subscriber satisfaction. Support and operations teams can view performance testing results with deep-dive analysis at the subscriber system level. Plus, centralized reporting and KPIs are available across the network, providing quick access to insights on network health and performance.*

BRANDING FOR MULTI-GIG WEB-BASED GUI

BSPs can personalize their web-based graphical user interface (web GUI) for the multi-gig speed testing service to promote their brand to subscribers who use the web page for speed and latency testing.

EXPERT GUIDANCE AND BEST PRACTICES

Whether BSPs need assistance navigating the complexities of quarterly FCC broadband performance testing or require help with implementing speed test servers, [Calix Success](#) provides the resources and guidance to help optimize testing across all use cases.





Key Benefits

Speed and Performance Insights enable BSPs to streamline operations, enhance customer satisfaction, and drive growth.



SIMPLIFY SPEED TESTING ACROSS USE CASES

BSPs can perform all necessary tests to measure subscriber broadband service quality, comply with FCC testing and reporting requirements, and validate the SmartLife experience on a single platform with the same systems, personnel, and workflows. Thanks to Calix Cloud, Speed and Performance Insights provide support and operations teams a consistent experience with familiar interfaces to run tests across premises and access systems.



VALIDATE THE SUBSCRIBER EXPERIENCE FOR HIGHER SATISFACTION

Speed and Performance Insights provide BSPs with end-to-end visibility into network performance from installation onward, helping validate the subscriber experience. Residential and business subscribers can utilize robust self-testing capabilities to verify performance, thereby reducing the need for calls to the help desk. By consistently delivering promised speeds and broadband service quality BSPs build trust, enhance satisfaction, and foster loyalty, as reflected in higher customer satisfaction (CSAT) scores and Net Promoter ScoresSM (NPS[®]).





ACCELERATE TROUBLESHOOTING AND ISSUE RESOLUTION

Speed and Performance Insights help support and operations teams quickly differentiate between subscriber equipment and network issues. This enables BSPs to increase first-call resolution reduce unnecessary truck rolls, and boost efficiency while lowering operating expenses (OPEX).



ENSURE FCC COMPLIANCE AND MAINTAIN FUNDING ELIGIBILITY

Calix Speed and Performance Insights is powered by Calix's cloud-based global performance testing, providing BSPs with the necessary tools to meet FCC funding obligations. This all-in-one solution ensures compliance with the FCC's speed, latency, and coverage requirements, helping BSPs maintain funding eligibility today and into the future.



PAVE THE WAY FOR CALIX SMARTLIFE SERVICES GROWTH

By ensuring network reliability and optimizing broadband service quality, BSPs have a solid foundation to offer an expanding range of SmartLife managed services. This approach fosters growth by driving higher average revenue per user (ARPU), increasing service "stickiness," and enabling expansion into new market segments.

By ensuring network reliability, optimizing broadband service quality, and supporting advanced managed services, BSPs can drive growth and foster lasting customer loyalty. With Calix Speed and Performance Insights—the industry's most comprehensive testing solution—BSPs are equipped to meet today's challenges and seize tomorrow's opportunities.

Discover how Calix Speed and Performance Insights can simplify testing, ensure compliance, and lay the foundation for expanding your managed services portfolio.

[Schedule a consult today.](#)



*Requires Calix Operations Cloud

**Requires Speed and Performance Insights multi-gig service

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