

INFOBRIEF | THE ADAPTIVE NETWORK

IP/MPLS service analysis

with Blue Planet Route Optimization and Analysis

Challenge

Most service providers have very little visibility into their IP/MPLS networks. The tools they typically use only offer partial views of the network's current state, so the provider has minimal knowledge of how routing behavior is affecting service delivery and the quality of the customer experience. They're in the dark. To make things worse, once there's an issue, troubleshooting becomes even more complex as the routed infrastructure changes intermittently and without warning. It's like trying to hit a moving target. The result? Failure to meet SLAs, unacceptable time to resolution for trouble tickets, and increasing customer dissatisfaction.

[Interactive use case](#)

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Taking an Adaptive Network approach

Part of Ciena's Adaptive Network, [Blue Planet® Route Optimization and Analysis \(ROA\) is built on the Blue Planet Cloud Native Platform, a modernized OSS that converges design, delivery, and assurance for networks and services.](#) ROA builds an up-to-the-

minute virtual map of the IP/MPLS network, so users can see exactly how routed traffic is traversing the network and precisely where performance is abnormal. Sub-optimal conditions missed by traditional tools can quickly be identified to correct possible service delivery issues and to allocate network resources more efficiently.

Blue Planet ROA works by capturing real-time network telemetry from the devices in IP/MPLS networks as well as from network orchestrators and SDN controllers. All routing events are noted by passively monitoring the IGP and BGP routing protocols to maintain an always-current layer 3 topology model. Built-in PCE and PCEP support automated path provisioning and network optimization that is critical to 5G network slicing. Traffic flow records and performance metrics are collected and mapped to the routing data to provide path-aware visibility into service delivery. The route optimization data can be used to establish historical baselines for alert triggers, generate traffic matrices for different times and workloads, and enable forensic analysis and what-if modeling. Temporal observability provides the ability to replay routing events to understand the root cause of past, transient, and intermittent L3 and L2 service issues.

IP/ MPLS service assurance

Click each step to learn more

Step 1

Analytics and Intelligence

Blue Planet ROA's route analysis participates in the IP control plane collecting and analyzing all IGP and BGP routing events in real time

Step 2

Analytics and Intelligence

Route analysis displays topology and routing path changes to enable IP/MPLS network visualization and monitoring, forensic analysis, and what-if modelling

Step 3

Analytics and Intelligence

Route analysis analyzes flow records for faster problem diagnostics and ROA telemetry uses SNMP-based and streaming telemetry performance data for sophisticated root-cause analysis

Step 4

Software Control and Automation

Blue Planet ROA automation offers automated calculation and configuration of traffic-engineered tunnels to optimize traffic and relieve congestion, including the use of RSVP-TE or segment routing policies.

Step 5

Software Control and Automation

Blue Planet ROA automation creates ideal service paths based on defined business policies and current network performance, then passes this information to Blue Planet Multi-Domain Service Orchestration (MDSO).

Step 6

Software Control and Automation

Blue Planet MDSO orchestrates the provisioning of new service paths across the programmable infrastructure.

Step 7

Ciena Services

Consulting services provide ongoing improvements to assess the performance of the network and make recommendations.

Benefits

Ciena's Adaptive Network, leveraging the Blue Planet ROA solution, means service providers can now:

- Map the network traffic to visualize how network routing paths affect SLAs
- Resolve transient and intermittent IP/MPLS network performance problems much faster
- Avoid unintended service impacts from network changes
- Make more informed infrastructure investments
- Accelerate the design and provisioning of new, differentiated services
- Provide a better customer experience

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Our story

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