blueplanet
a division of Ciena

DATA SHEET

Blue Planet Route Optimization and Assurance Explorer Suite for Network Service Assurance

Ciena's Blue Planet® Route Optimization and Assurance (ROA) Explorer Suite is used by the world's leading network operators, enterprises, and government entities to assure the delivery of critical Layer 3 services across the cloud.

The ROA Explorer Suite uniquely combines routing, traffic, and performance analytics for real-time, path-aware operational monitoring, and back-in-time forensics for troubleshooting transient problems that can cause major service disruptions. Interactive modeling helps engineers accurately predict the impact of changes, simulate new workloads for capacity planning, and test failure scenarios to build more resilient networks. The network automation capabilities in ROA Explorer Suite, when combined with other Blue Planet products such as Multi-Domain Service Orchestration (MDSO), help network providers accelerate the time to market for new services and assure performance, enabling them to build networks that can readily adapt to change.

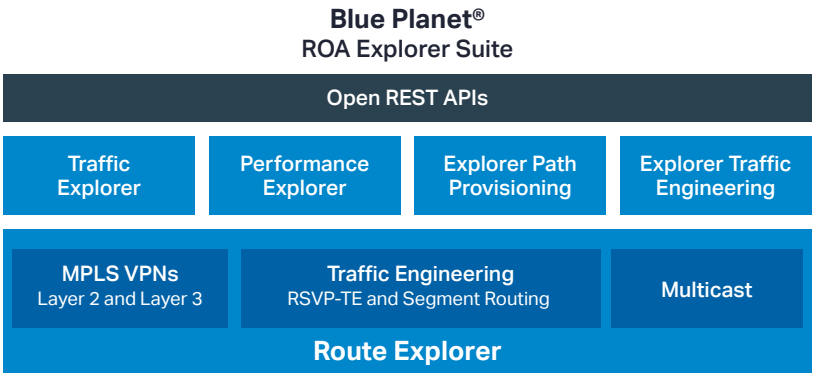

Figure 1. Blue Planet ROA Explorer Suite

Features and Benefits

- Troubleshoot hard-to-find problems faster for improved customer service
- Avoid unexpected service disruptions from network maintenance
- Improve network redundancy and resiliency
- Optimize peering relationships and transit costs
- Simplify planning and reporting
- Increase operational efficiency and maximize the return on capital investments
- Build a self-healing, self-optimizing network that can readily adapt to change

The ROA Explorer Suite comprises five products:

1. **Route Explorer®,** the foundation of the Explorer Suite, collects and analyzes all Interior Gateway Protocol (IGP) and Border Gateway Protocol (BGP) routing events. Various routing topologies and overlay services are supported, including:
    a. Layer 2 and Layer 3 MPLS VPNs
    b. RSVP-TE and SR-TE tunnels
    c. Multicast
2. **Traffic Explorer®** analyzes flow records (such as NetFlow, sFlow) across the network
3. **Performance Explorer** collects SNMP-based performance data from network devices
4. **Explorer Path Provisioning** automates the provisioning of transport paths for new services
5. **Explorer Traffic Engineering** alleviates network congestion by automatically computing new traffic engineering tunnels to redirect traffic

Why the ROA Explorer Suite?

The dynamic nature of IP networking makes it virtually impossible to know at any point in time how traffic is traversing customer and service provider networks and the Internet. Troubleshooting problems by issuing pings and router CLI commands, scanning log files, and manually correlating the results is both imprecise and inefficient, ultimately increasing the time it takes to identify and solve service delivery issues. This delay can lead to SLA violations, reduced customer satisfaction, and churn.

Traditional management tools are incapable of:

- Providing real-time visibility into routing paths across the network
- Showing how routing errors and misconfigurations impact service delivery
- Monitoring traffic flows across service provider and customer networks and overlaying on them on the routing path to give a comprehensive view
- Correlating routing events with performance metrics of network services to assure service performance
- Computing and provisioning transport paths to deploy new services

As a result, network managers face challenges like these:

- Finger-pointing between service providers and customers over SLA breaches
- Lack of visibility into MPLS VPN routing plane for faster troubleshooting
- Unintended consequences from routing configuration changes
- Failure to detect new devices and configurations
- Inability to assure performance of revenue-generating services
- Lack of accurate data to optimize peering relationships and control transit costs
- Inability to accurately model and predict the impact of changes and new workloads
- Planning and provisioning new services taking weeks or months

Filling the management gap

Blue Planet's ROA Explorer Suite complements existing Operational Support Systems (OSSs), as well as network management and element management systems, by providing real-time visibility into the Layer 3 network control plane. Users can see exactly how specific traffic is traversing the network, and precisely where performance is abnormal. They can quickly identify sub-optimal routing metrics, flapping, loops, black holes, and a host of other conditions traditional tools miss, which can cause service delivery issues and inefficient use

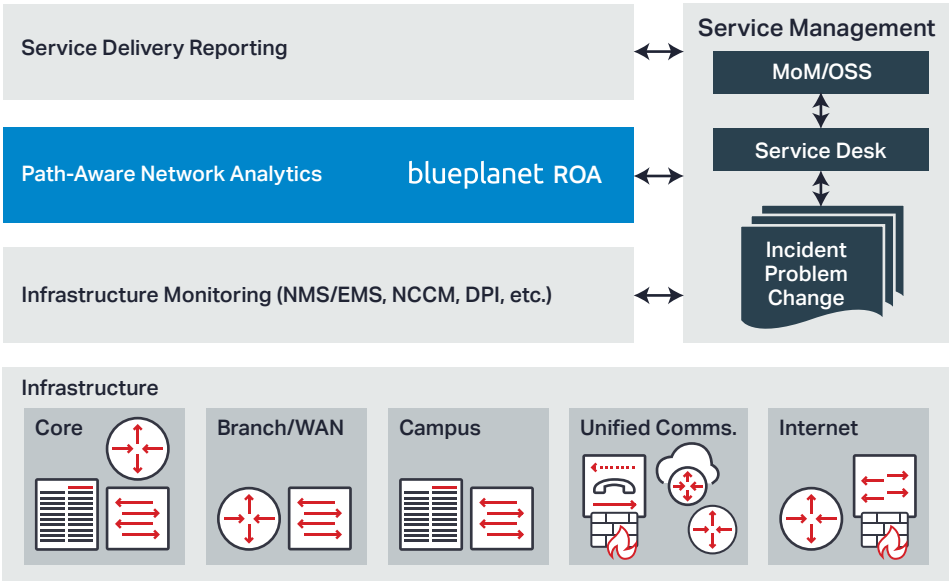

Figure 2. The ROA Explorer Suite fills the network assurance management gap

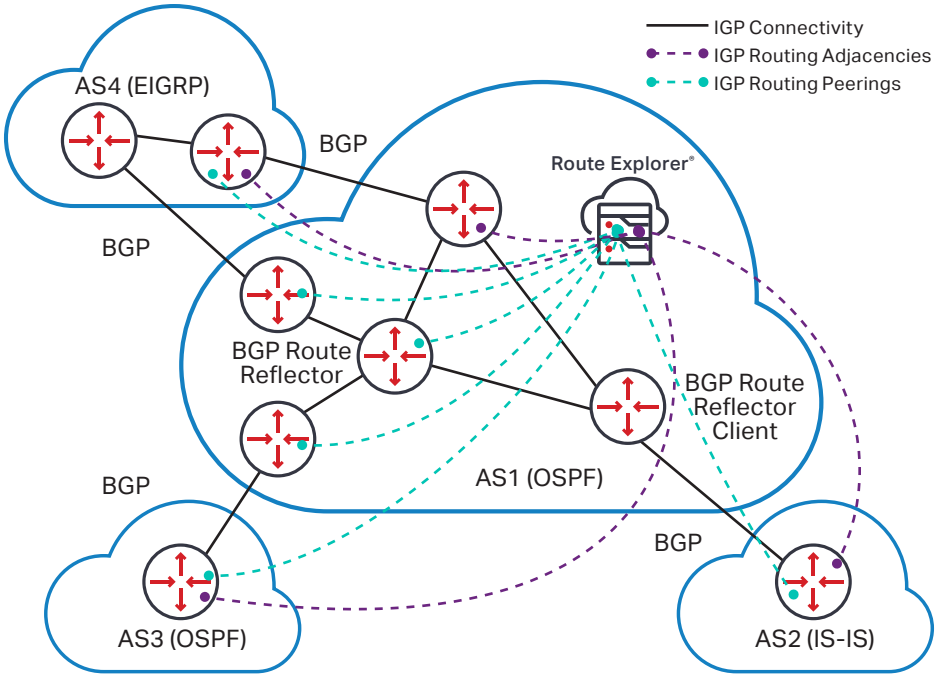

Figure 3. The ROA Explorer Suite sees the network as the routers see it

of network resources. The ROA Explorer Suite also works with SDN controllers and orchestrators to compute and automate the provisioning of new service paths and traffic engineering tunnels to alleviate congestion.

How it works

Using Blue Planet's patented techniques, Route Explorer participates passively in the network and subscribes to all routing announcement messages. It records these messages and uses them to calculate and maintain in real time a Layer 3 topology model of the network. Its time-indexed database enables users to retrieve, view, and analyze network events at any given time period in the past, and even replay the network's behavior using animation. It supports all IGP/BGP routing protocols and major equipment vendors.

Using Route Explorer's always-current Layer 3 topology model, Traffic Explorer calculates the path of every flow, giving network managers unprecedented visibility into traffic behavior, end to end, with a very small collection footprint. Performance Explorer uses the topology model to visualize latency and performance metrics (CPU and memory utilization, jitter, packet discards) for every hop along a given service path. The combination of route, traffic, and performance analytics is an industry first and provides unprecedented, path-aware management control.

The ROA Explorer Suite leverages routing and traffic data from Route Explorer and Traffic Explorer to enable automation of service provisioning and assurance. Explorer Path Provisioning can compute the best route from a source to destination and uses ROA's open REST APIs to automatically provision a new service via Blue Planet MDSO or third-party controllers and SDN orchestrators. Explorer Traffic Engineering provides recommendations for new traffic engineering tunnels to alleviate congestion, and provisions them via Blue Planet MDSO or third-party controllers and SDN orchestrators.

Capabilities

Past: DVR-like rewind and replay of network events for forensic analysis of transient service delivery problems

Present: Real-time monitoring of routing, traffic, and performance, with deviation from baseline alerts and anomaly reports to enable proactive service management

Future: Interactive modeling to predict the impact of network failures, configuration changes, and new workloads

Automation: Reduces the time-to-market for new services, from weeks or months to minutes, and assures service performance using analytics and automation for path computation and provisioning

CONNECT WITH BLUE PLANET TODAY