

DATA SHEET

Enterprise Route Analyzer

Ciena's Enterprise Route Analyzer (ERA) provides visibility into the dynamic routing operation of the entire network—enabling fast identification and resolution of difficult to diagnose network and routing problems, effective network maintenance, accurate what-if analysis for network architectural changes, and the ability to monitor traffic engineering (TE) tunnels, and layer 2 and layer 3 VPNs.

Many enterprises and government entities depend on their IP/multi-protocol label switching (MPLS) networks for business continuity. These networks, often built on multi-vendor hardware, include hundreds of routing paths that enable connectivity between different locations or carry myriad business-critical and revenue-generating services. It is therefore critical to monitor and assure these IP/MPLS networks and the services running on them.

But IP/MPLS networks are dynamic, with the inherent intelligence of IP automatically rerouting traffic when problems occur. This makes it almost impossible to know at any point in time how traffic is traversing the network, or to the cloud. Traditional monitoring tools and manual correlation processes that leverage only static data fall short of delivering meaningful insights. They fail to provide real-time and historical analysis of routing issues and do not correlate how routing changes impact network performance, causing service delivery failures. Such legacy monitoring is both imprecise and inefficient, thereby increasing the time taken to identify and resolve critical network issues.

Enterprise Route Analyzer

Ciena's ERA fills this key visibility and analytics gap in IP/MPLS networks. It helps network engineers and network operations center (NOC) teams gain comprehensive visibility into real-time and historical routing behavior across the network, helping proactively detect potential routing failures and speeding up troubleshooting when failure occurs. Available as a subscription

Product benefits

ERA comes pre-loaded on optimum appliance package

- Leverage true vendor-agnostic visibility and analysis for IP/MPLS routing
- Understand how routing changes impact network performance
- Rapidly identify and diagnose faults, anomalies, and redundancy with routing, TE tunnels, and VPNs
- Help illuminate the impact of device failure on routing behavior with what-if analysis

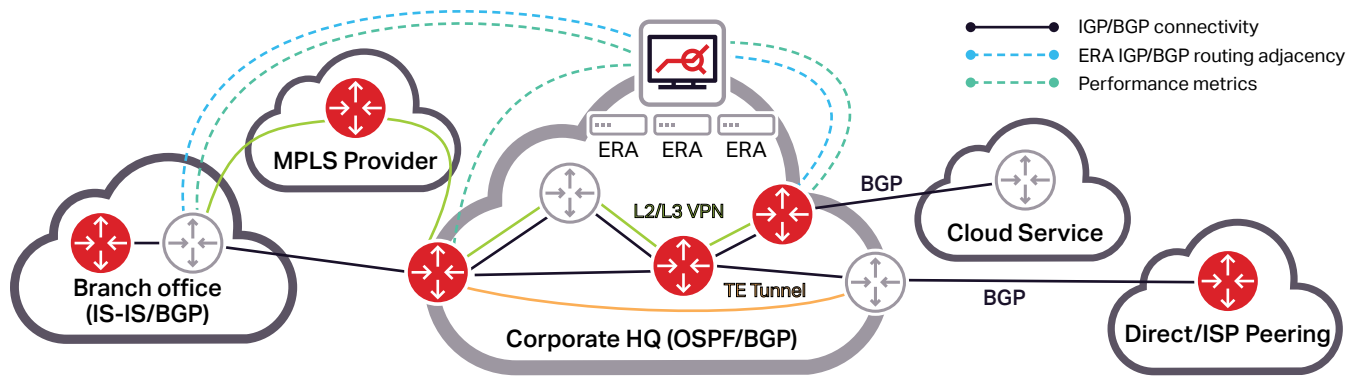


Figure 1. Ciena's ERA can monitor and analyze complex IP networks running OSPF, IS-IS, EIGRP, and BGP

model, ERA is pre-loaded on an optimum appliance package to gather real-time updates from your IP networking environment and deliver visibility and analytics on the IP network control plane.

ERA uniquely correlates routing behavior with network performance metrics to deliver real-time, path-aware operational monitoring. Its back-in-time forensics help NOC teams troubleshoot transient problems that cause service disruptions. And with interactive modeling on a live topology map, network engineers can test and accurately predict the impact of routing changes to build more resilient networks.

See the network as the network sees itself—in real time

ERA leverages the intelligence of the IP control plane to let network engineers and NOC teams visualize and understand the dynamic operation of the network like never before. It passively listens to routing updates and constructs the routers' view of the network, computing and displaying topology changes and routes in real time. Loss of IP-layer connectivity is immediately detected and alerts can be sent for corrective action. Routing instabilities or changes that go unnoticed by conventional simple network management protocol (SNMP)-based management systems, but which impact network availability and performance, are visible within seconds—leading to early detection and prevention of outages and reduced time to repair.

ERA supports all popular routing protocols used in networks, including open shortest path first (OSPF), intermediate system to intermediate system (IS-IS), enhanced interior gateway routing protocol (EIGRP), and border gateway protocol (BGP) routing protocols across multiple autonomous systems. Network engineers can view the real-time routing structure of their entire network as a seamless topology map—even when the network is running multiple protocols, spans multiple

domains or autonomous systems (AS), or utilizes static routes that are not injected into routing protocols.

Filling the visibility gap

By providing real-time visibility into the IP network control plane, ERA complements existing network and element management systems. Using ERA, network owners can quickly identify sub-optimal routing metrics, flapping, loops, black holes, and a host of other conditions that traditional tools miss.

It also enables NOC teams to understand how an overlay service has been affected by changes to routing paths, helping quickly determine the root cause of connectivity issues. Leveraging ERA, users can see their layer 2 and layer 3 VPNs, resource reservation protocol-traffic engineering (RSVP-TE) and segment routing (SR) tunnels, and multicast services. They can drill down to details, including overall VPN service health, site-to-site reachability, baseline deviations, and multicast trees in the context of the entire network.

Playback for routing changes

ERA provides a unique networkwide view of all routing changes, which helps NOC teams get to the bottom of costly problems. This data is stored, allowing users to play back and see routing behavior across the whole network or paths between two endpoints, including TE tunnels, in real time or from the past. This historical view helps quickly identify and resolve transient and intermittent routing issues that occurred in the past.

Correlate routing and performance

ERA uses the always-current IP topology model to visualize latency and performance metrics (CPU and memory utilization, jitter, packet discards) for every hop along a given routing path. The combination of routing and performance analytics is an industry first—providing unprecedented, path-aware management control.

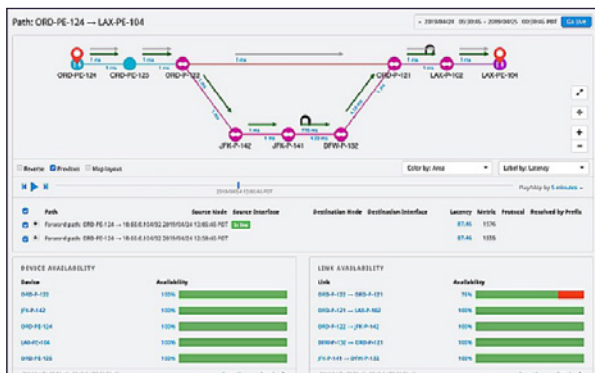


Figure 2. Ciena's ERA provides network teams with at-a-glance, real-time visibility into routing and performance, helping engineers quickly identify possible routing failures and anomalies and proactively manage their network

Ready to go

To help customers utilize the benefits of their new product as quickly as possible, ERA comes pre-loaded on the optimum appliance package determined by Ciena's product engineers to bring end-to-end visibility and advanced analytics that deliver actionable intelligence. And to help engineers and NOC teams focus on network uptime rather than IT maintenance, ERA is available under a subscription model that includes hardware support.

How it works

ERA 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 topology model of the IP network. Its time-indexed database enables users to retrieve, view, and analyze network events at any given time range in the past, and even replay the network's behavior using animation. It is vendor-agnostic and supports all interior gateway protocol (IGP)/BGP routing protocols.

ERA appliance package benefits

Appliance package Hardware-based appliance designed to interface directly with your network with resiliency and performance in mind	Ready to go Pre-loaded with licensed ERA product to quickly gain end-to-end visibility into the IP network routing and performance	Focus on the network Leave behind hardware provisioning and maintenance worries and focus on monitoring with a subscription package that includes software and hardware support
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ERA capabilities

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

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

Future: What-if modeling to predict the impact of device failures on routing behavior

Appliance package tech specs

Technical specs (contact account team for complete specs)	
Form factor	3 x 1RU rack servers
Host OS	Oracle Linux 8.8
Cooling	Air cooling, 7 x very high performing fans
Power supply	800W Dual, hot-swap, redundant power supply (1+1), Cord - C13/C14, 4M, 250V, 12A with 100—240 VAC

For more information and ordering, contact Ciena or your Partner representative.

