



Route Explorer



Harnessing the Intelligence of IP

Route Explorer™, the industry's leading IP route analysis system, is designed for network engineers and operators managing today's complex, mission-critical enterprise and service provider networks. It provides visibility into the dynamic routing operation of the entire network, enabling fast identification and resolution of difficult-to-diagnose network problems, effective and trouble-free network maintenance, and the ability to easily and accurately plan for network changes and optimization.

IP Route Analysis – A Necessity for Today's Mission Critical Networks

IP networks are dynamic, with the inherent intelligence of IP automatically re-routing traffic when problems occur. Until now, there have not been any tools available that provide network engineers and operators with visibility into real-time network-wide routing behavior.

Without the ability to visualize, monitor, analyze and model changes to the logical, or Layer 3 operation of an IP network, pinpointing and correcting problems, performing maintenance updates or planning network upgrades is a tedious, manually-intensive and error-prone effort for routing experts, resulting in unforeseen downtime, excessive operational costs, time-consuming problem resolution and lost productivity.

Route Explorer – See the Network as the Network Sees Itself

Route Explorer leverages the intelligence of the IP control plane to let network engineers and operators visualize and understand the dynamic operation of the network as never before. By monitoring the routing protocols that direct the flow of traffic throughout the network, Route Explorer 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 to a management console so that corrective action can be taken. Routing instabilities or changes that go unnoticed by conventional SNMP-based management systems, but which impact network availability and performance, are visible within seconds, leading to early detection or prevention of service outages and reduced time-to-repair.

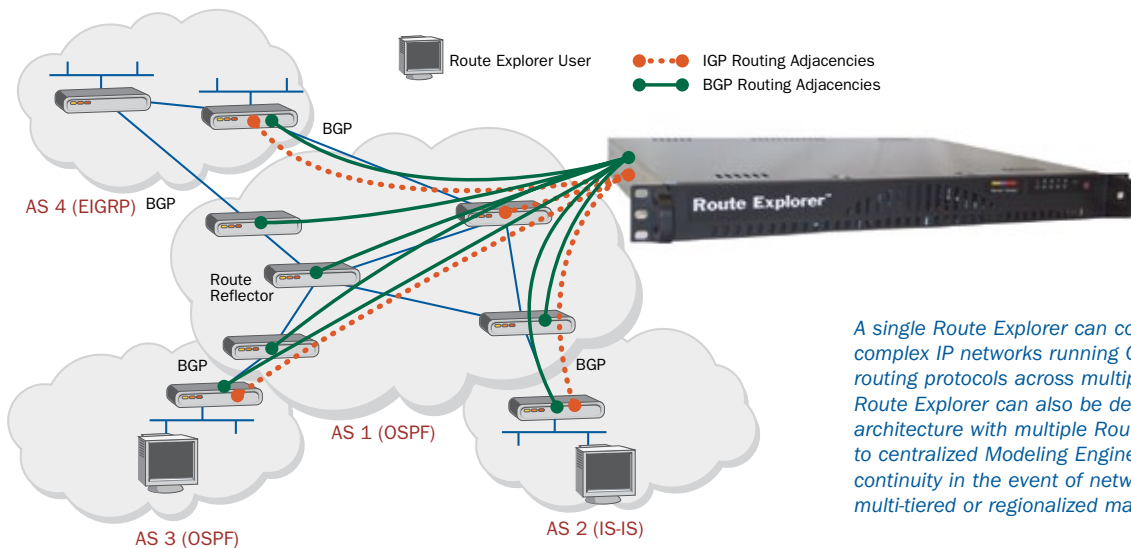
Since Route Explorer does not forward any traffic, it is neither a bottleneck nor a failure point, and places virtually no load on the network infrastructure while scaling to any network size. Route Explorer is easily installed in just hours, providing an extremely rapid time-to-value.

Route Explorer Benefits

- Increases network and service availability and customer satisfaction by rapidly identifying and diagnosing IP routing faults
- Lowers MTTR (Mean Time to Repair) and improves operations and engineering productivity by speeding identification of complex IP network problems
- Prevents costly maintenance errors by modeling and simulating network changes before implementation
- Boosts network quality by proactively auditing network-wide routing operations and identifying suboptimal conditions that could affect traffic delivery
- Averts costly service outages by detecting and alerting on changes to critical network redundancy
- Small deployment footprint, minimal network load and continuous auto-discovery delivers fast time-to-value and low Total Cost of Ownership

Real-Time Monitoring and Analysis of Complex IP Networks

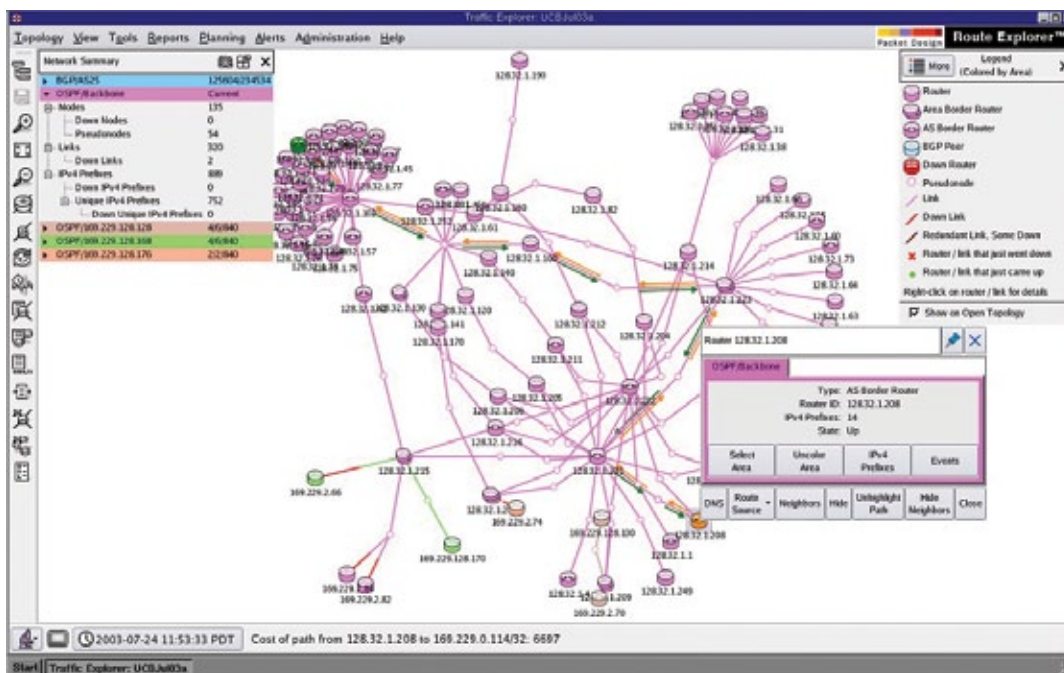
Route Explorer is the only IP route analysis system to support all of the popular routing protocols in use on today's service provider and enterprise networks. From a single Route Explorer appliance, network engineers can view the real-time routing structure of their entire network as a seamless topology map, even when the network is running multiple protocols, spans multiple domains or Autonomous Systems, or utilizes static routes that are not injected into routing protocols. Route Explorer scales to the largest networks with thousands of routers and multiple copies of the Internet routing table.



A single Route Explorer can concurrently monitor and analyze complex IP networks running OSPF, IS-IS, EIGRP, and BGP routing protocols across multiple autonomous systems. Route Explorer can also be deployed in a two-tier distributed architecture with multiple Route Recorders synchronizing data to centralized Modeling Engines, enhancing management continuity in the event of network failures while supporting multi-tiered or regionalized management domains.

Pinpoint Precise Application and Service Paths for Faster Troubleshooting

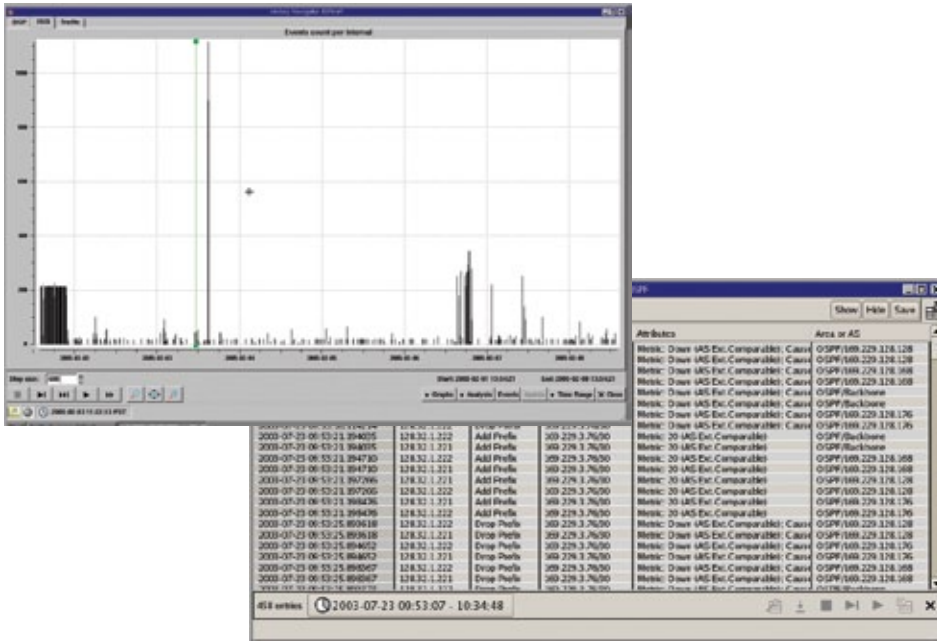
Engineers can quickly trace the precise path that service traffic is following through the network map, and see if the traffic is experiencing routing instabilities or outages. Even if routing issues aren't a direct root cause, path tracing helps engineers to more effectively localize the relevant part of the network to analyze further with other tools such as SNMP device managers, log managers, and application performance managers. The result is faster troubleshooting and lower MTR.



Route Explorer provides an accurate, real-time view of network-wide routing. The bi-directional path between any source router and any destination address or router can be traced through an easy, point-and-click operation. A network summary panel shows at a glance the current status of routing protocols and allows users to quickly track network changes in real-time.

Rewindable Network History Dramatically Lowers Operations Costs

Network operators and engineers know that a minority of complex network problems tend to have the heaviest impact on overall MTTR, while managers know that these problems drive up OPEX and lower responsiveness to end users. Route Explorer provides a unique, network-wide history of all routing changes which helps engineers and operators get to the bottom of these costly problems. Route Explorer records all routing events, and provides full rewind and replay capabilities so that difficult to detect problems can be quickly identified and diagnosed. Route Explorer's advanced event filtering capabilities allow rapid isolation of the root cause to a single router or network address.



Route Explorer provides a "History Navigator" tool which can be used to rewind the network events to a past moment in time when a problem was occurring, by dragging the vertical time cursor or entering a precise time at the lower left-hand of the tool. Engineers can then use powerful analysis tools to examine the state of the entire network's routing at the moment when service traffic was affected.

Comprehensive Reports and Diagnostic Tools Help in Isolating Problems and Viewing Trends

Flexible reports can be generated for any historical time period, providing an overall understanding of network performance, while allowing quick isolation of potential problem areas. In many instances, network problems can be averted and resolved due to early awareness of anomalies. Data from reports can be useful in network maintenance and planning to understand trends, plan for network changes and growth, and verify changes made during scheduled maintenance. In addition, Route Explorer offers detailed diagnostic tools to drill down into specific routing conditions and determine root causes.

IP Routing Analysis Reports	Diagnostic Tools
<ul style="list-style-type: none"> Routing status Routing stability Routing comparison Path reports RIB Browser RIB Comparison 	<ul style="list-style-type: none"> BGP root cause analysis BGP routing visualization Routing time comparison Prefix diagnostics Event analysis

Route Explorer Highlights

Real-Time IP Network Visualization and Monitoring

