

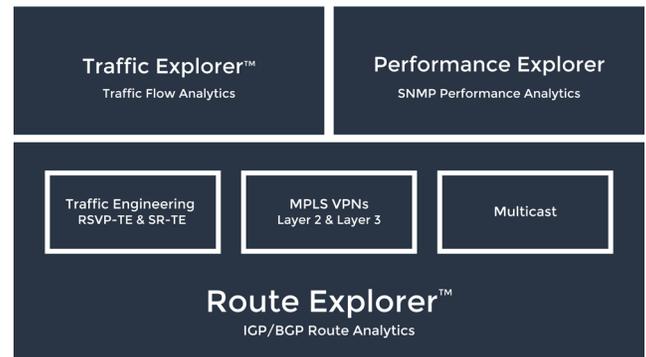
## THE EXPLORER NETWORK SERVICE ASSURANCE SUITE

*The Packet Design Explorer suite of products is used by the world's leading network operators, enterprises and government entities to assure the delivery of critical services across the cloud. The Explorer products uniquely combine 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 predict the impact of changes accurately, simulate new workloads for capacity planning, and test failure scenarios to build more resilient networks.*

### The Explorer Suite is comprised of three products:

- Route Explorer™, the foundation of the Explorer suite, collects and analyzes all IGP and BGP routing events. Various routing topologies and overlay services are supported, including:
  - Layer 2 and Layer 3 VPNs
  - RSVP-TE and SR-TE Tunnels
  - Multicast
- Traffic Explorer™ analyzes flow records (e.g. NetFlow) network-wide
- Performance Explorer collects SNMP-based performance data from network devices

### Explorer Suite



*Explorer Network Service Assurance Suite*

### Why Route Analytics?

Traditional management tools are incapable of:

- Providing real-time visibility into traffic paths across the network
- Showing how routing errors and misconfigurations impact service delivery
- Monitoring traffic flows across service provider and customer networks to give a complete view
- Correlating routing events to the performance of network services

As a result, network managers face challenges like these:

- Finger pointing between service providers and customers over SLA breaches
- Little visibility into MPLS VPN routing for troubleshooting
- Unintended consequences from routing configuration changes
- Failure to detect new devices and configurations
- Lack of accurate data to optimize peering relationships and transit costs
- Inability to accurately model and predict the impact of changes and new workloads

Without route analytics, 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.

## Filling the Management Gap

The Explorer Suite complements existing OSS, NMS and EMS tools by providing visibility into the network control plane. Users can see exactly how specific traffic traverses 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 missed by traditional tools that can cause service delivery issues and inefficient use of network resources.

## How It Works

Using Packet Design'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 data base 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. All IGP/BGP routing protocols and major equipment vendors are supported.

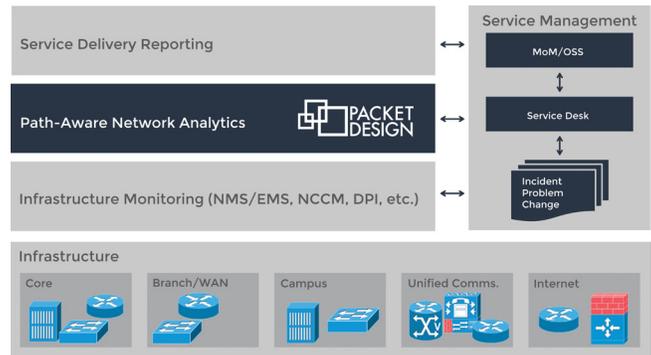
Using Route Explorer's always-current layer 3 topology model, Traffic Explorer calculates the path of every flow, giving network managers unprecedented visibility into traffic behavior, end-to-end, with a very small collection footprint. Performance Explorer uses the topology model to visualize latency 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.

## Capabilities

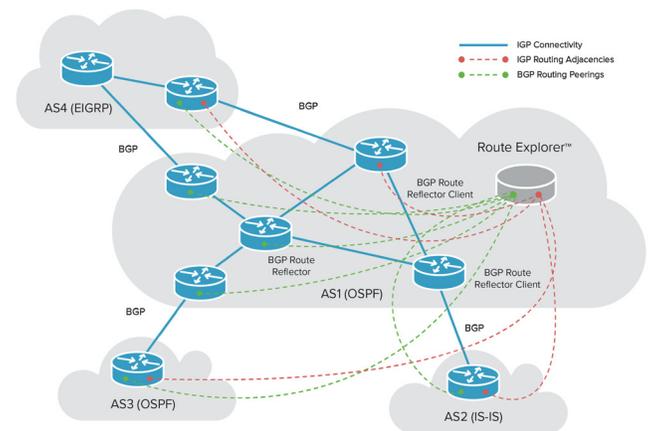
- Past:** DVR-like rewind and replay of network events for forensic analysis of transient service delivery problems
- Present:** Real-time monitoring of routing, traffic, and performance, with deviation from baseline alerts and anomaly reports to enable proactive service management
- Future:** Interactive modeling to predict the impact of network failures, configuration changes, and new workloads

## Benefits

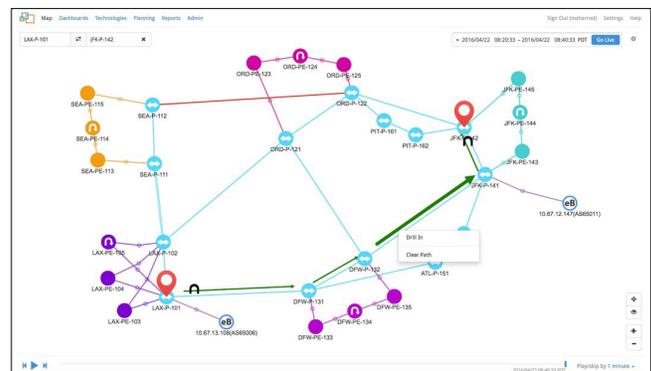
- Troubleshoot hard to find problems faster for improved customer service
- Avoid unexpected service disruptions from network maintenance
- Improve network redundancy and resiliency
- Optimize peering relationships and transit costs
- Simplify planning and reporting
- Drive up operational efficiency and maximize the return on capital investments



The Explorer Suite fills the network service assurance gap.



Route Explorer sees the network as the routers see it.



Only the Explorer products allow DVR-like replay of network events for troubleshooting transient problems.

