



Extending Visibility from the WAN to the Cloud

JUNIPER CLOUD CPE SOLUTION

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MAJOR USE CASES AND TRENDS IN ENTERPRISE AND MANAGED SERVICE PROVIDERS

Cloud

Evolution to Cloud-based Services

- Enterprise Private Cloud
- Distributed Private Cloud
- Hybrid Cloud

Campus and Branch

Evolution to Cloud CPE and SD-WAN

- Cloud CPE: Virtualize Services Centrally (Virtual CPE) or Distributed (Universal CPE)
- Self-Service Portals and Zero-Touch Deployment of CPE Devices
- SD-WAN: Dynamic Application-Aware and Performance-Aware Traffic Steering

Security

Evolution to Software-Defined Network Security

- Fine-grained Segmentation with Policy-based Security
- Pervasive Threat Detection and Policy Enforcement Throughout the Network

Automation

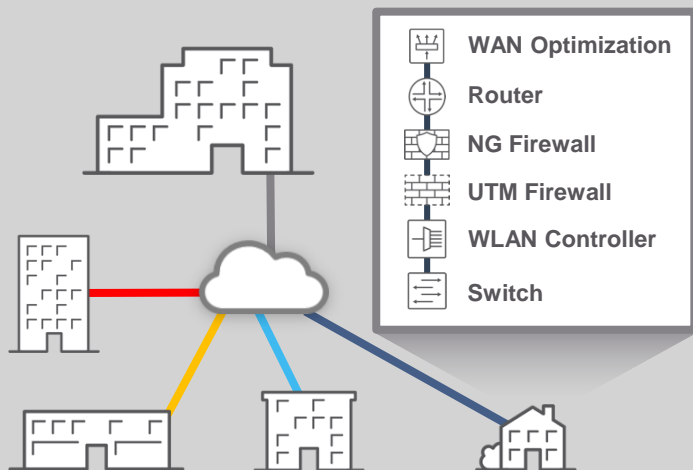
Evolution to DevOps Culture

- Rich Automation and Orchestration Frameworks
- Rich Real-time Telemetry and Analytics
- Wide Adoption of Open Source

BRANCH CONSOLIDATION WITH CLOUD CPE

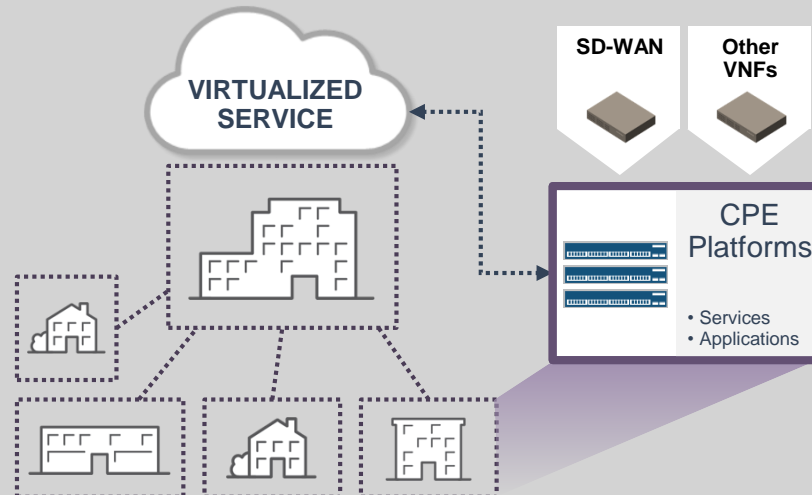
Bring Agility and Enhanced Customer Experience Utilizing Cloud Technology

Legacy Branch (PMO)



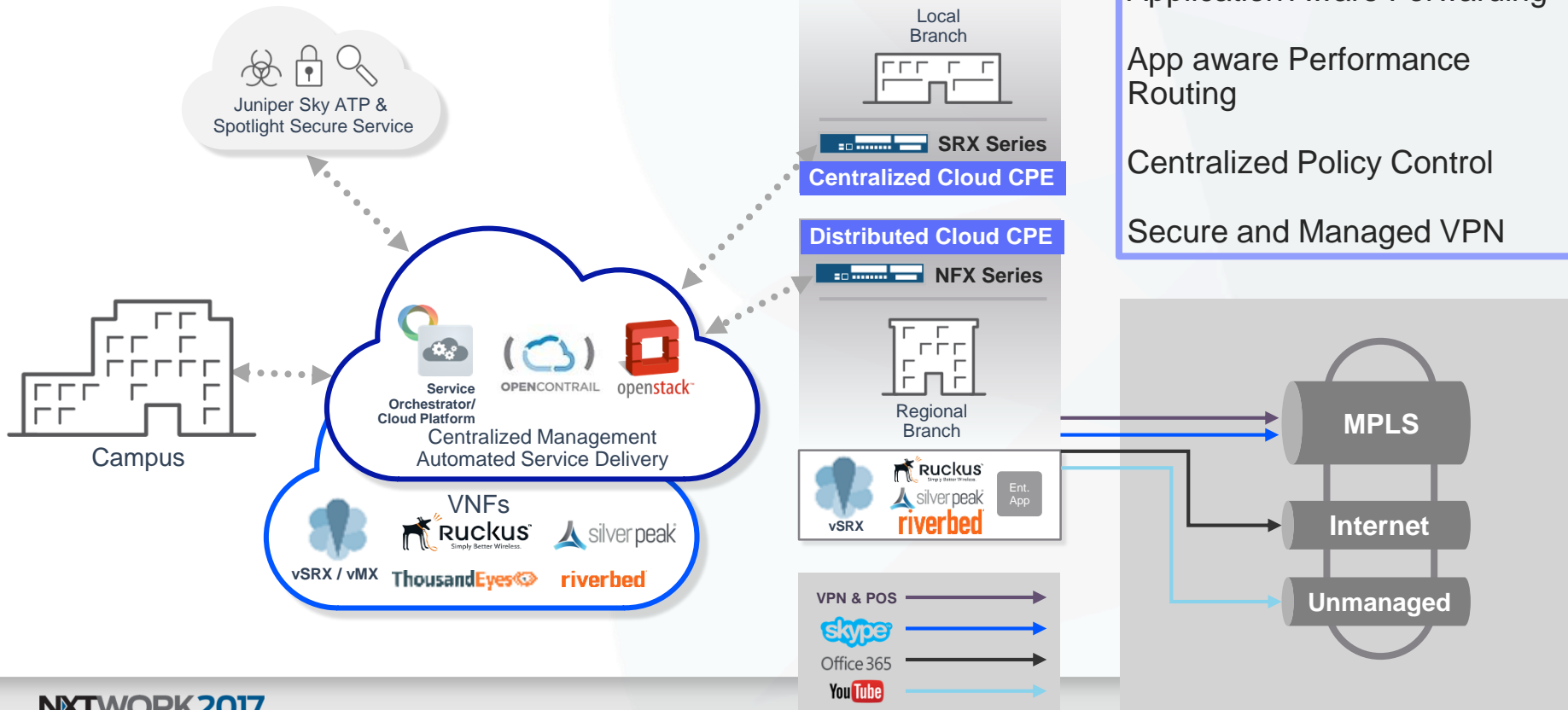
Expensive, complex all-in-one box or many vendor inline boxes and cumbersome refresh

Future Branch (FMO) with D-NFV



Simple, customizable and instantaneous refresh

SERVICE SIMPLICITY TO DELIVER BRANCH CONSOLIDATION



THIRD PARTY ECOSYSTEM





Extending Visibility from the WAN to the Cloud

Nick Kephart, Sr. Director Product Management

About Us

We're a team of network experts,
committed to helping you best
connect your business











FOUNDED IN
2010

HEADQUARTERS IN:
San Francisco

OFFICES IN:
New York | London | Austin



Relied on by networks everywhere

5/5

top global
software companies

5/6

top US banks

48

Fortune 500
companies

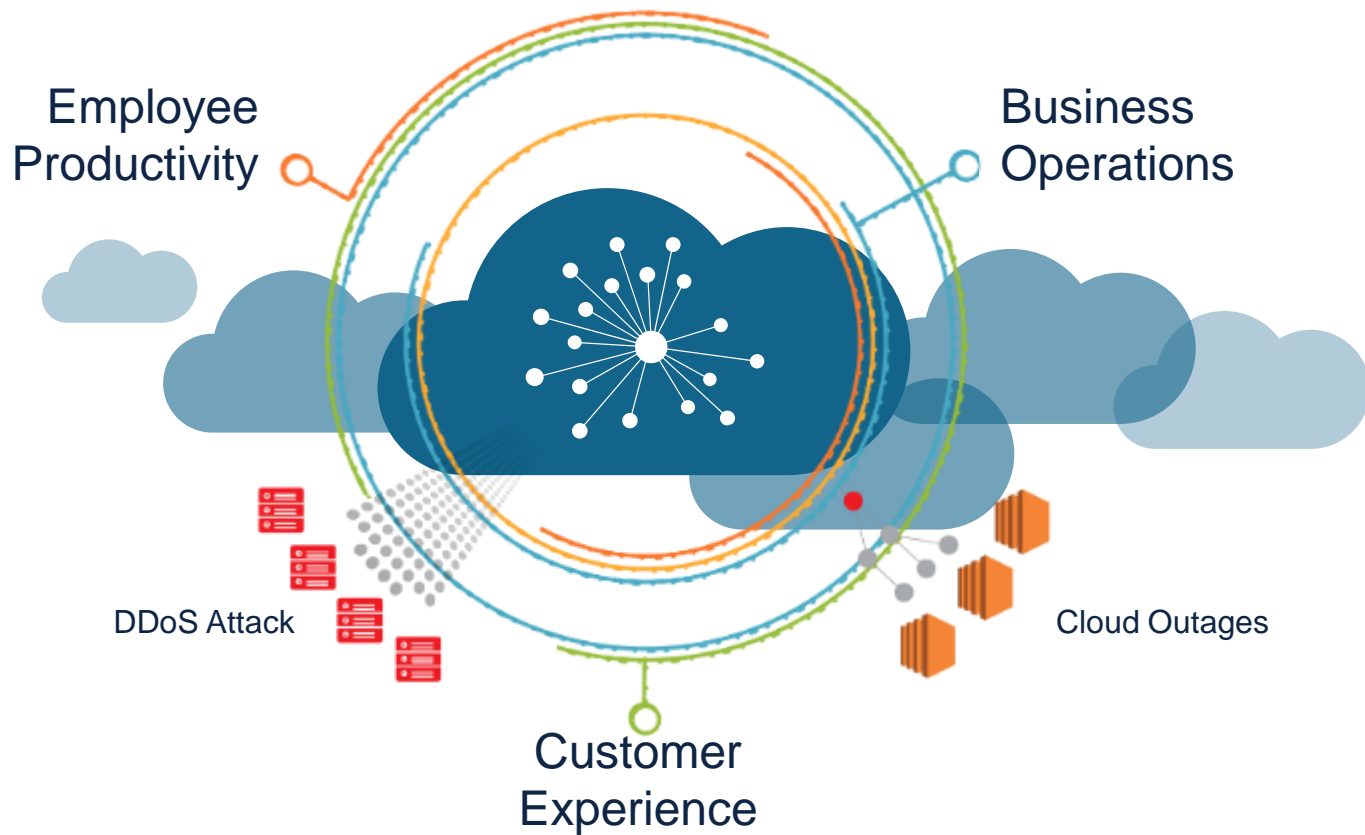


SP Challenges & Opportunities in the Cloud Era

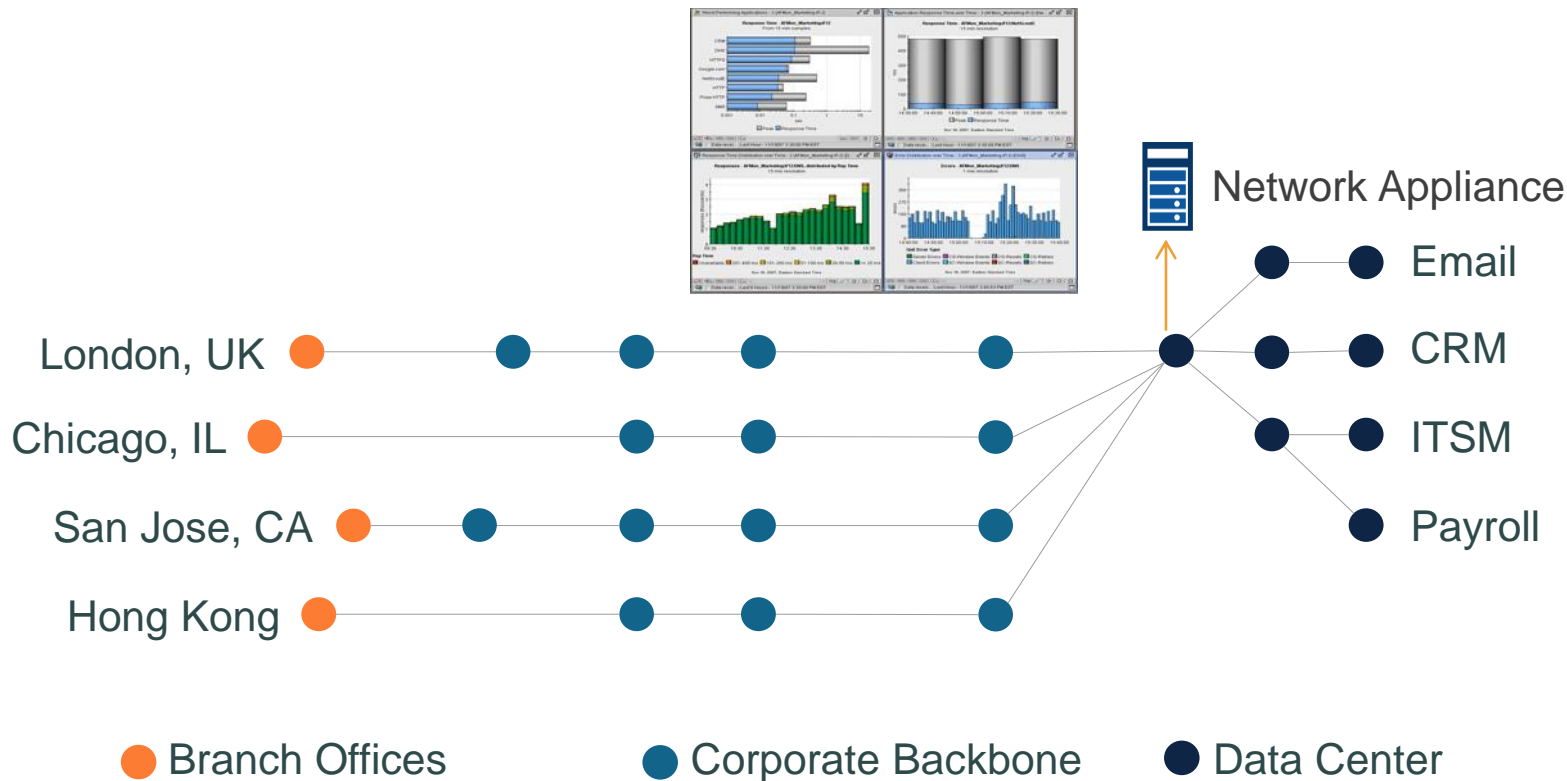
- Challenges:
 - Shift to IaaS/SaaS favors Direct Internet Access (DIA) and SD-WAN
 - Cannibalization of profitable MPLS WAN services
- Opportunities:
 - Act as custodians of the enterprise journey to the cloud
 - Provide visibility into the “new normal” of the cloud
 - Monetize catalog of virtual service add-ons
 - Cross-sell cloud direct connect and other service offerings



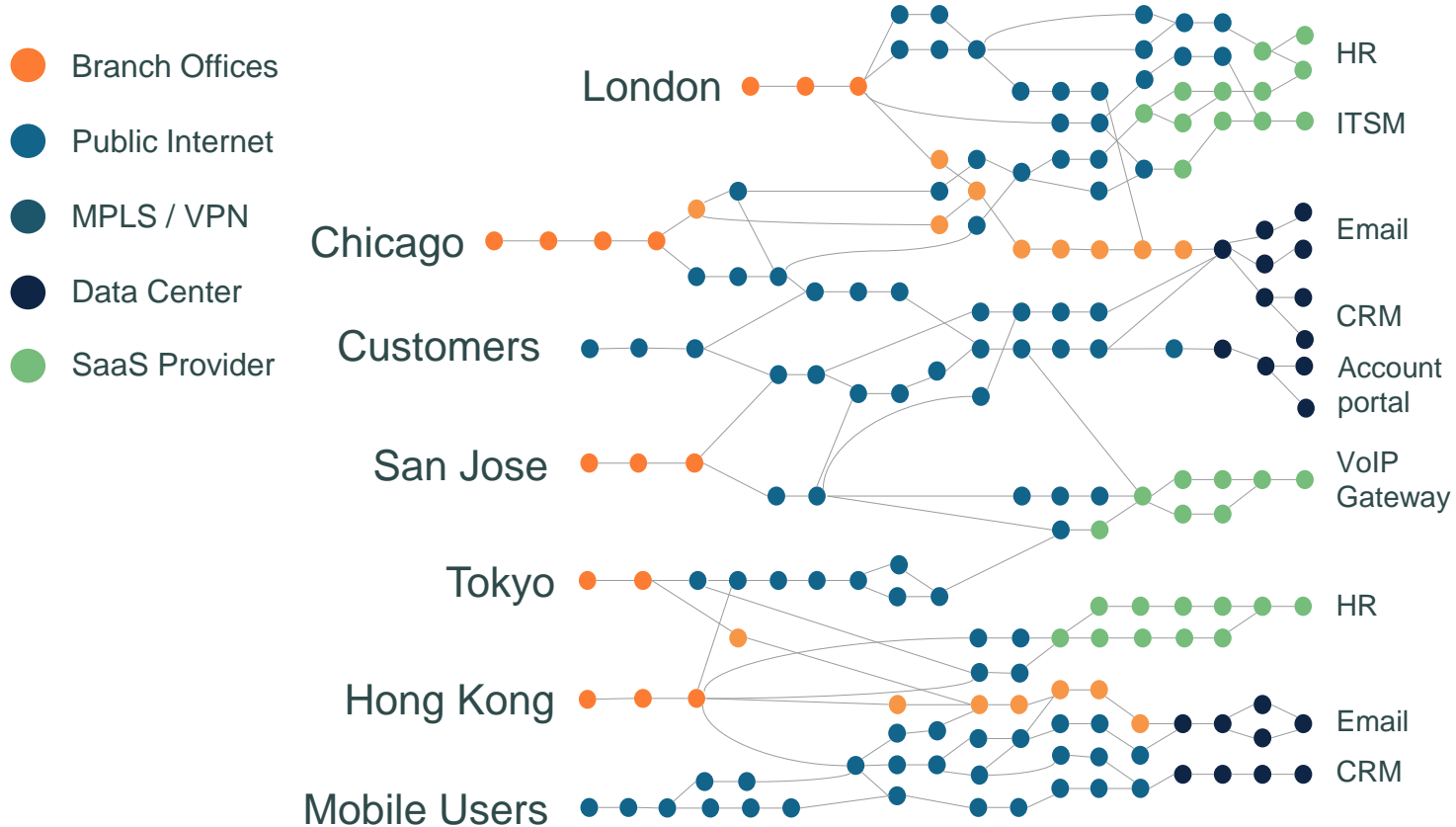
Enterprises now live in an Internet-centric IT world



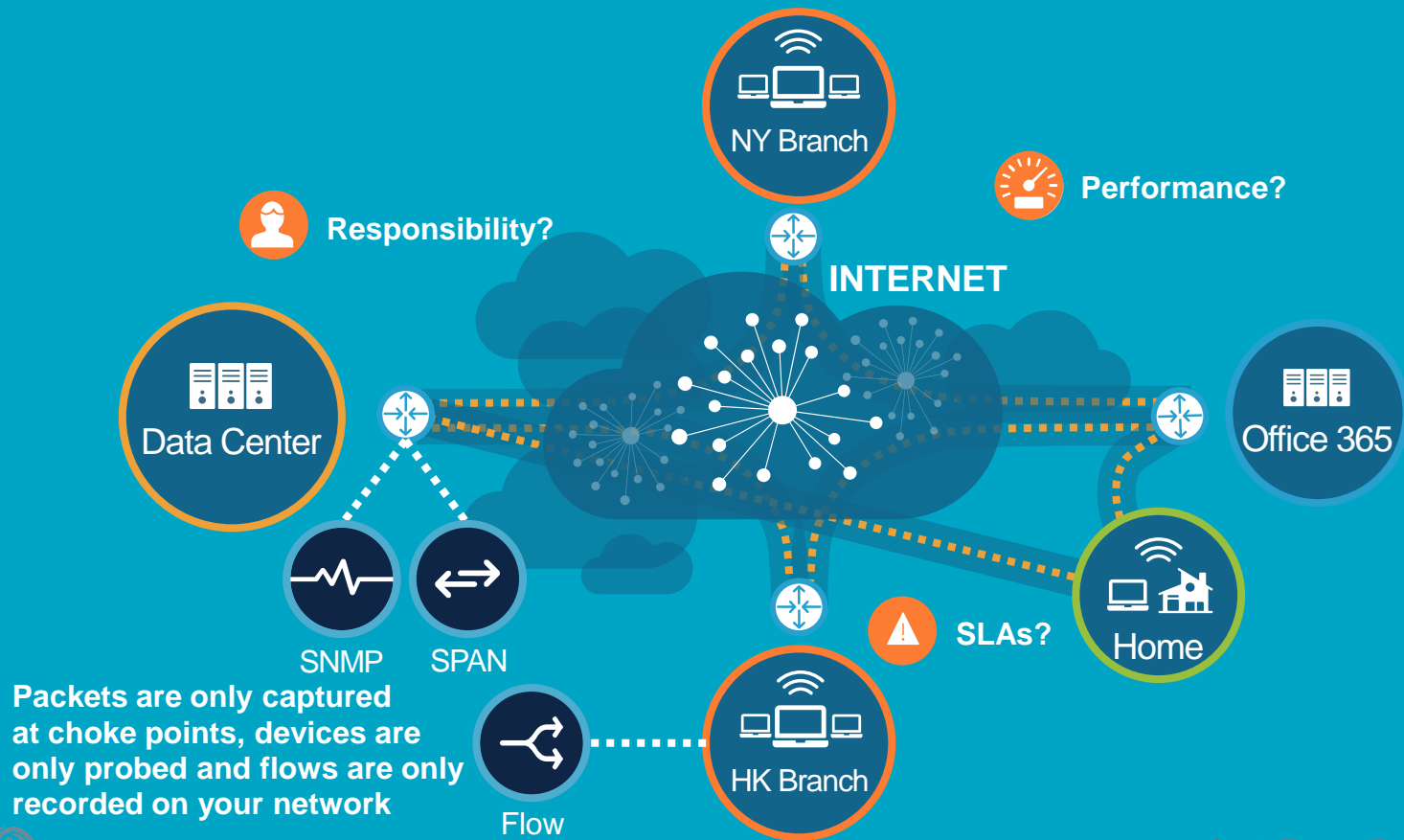
Yesterday: Enterprises with on-premises apps



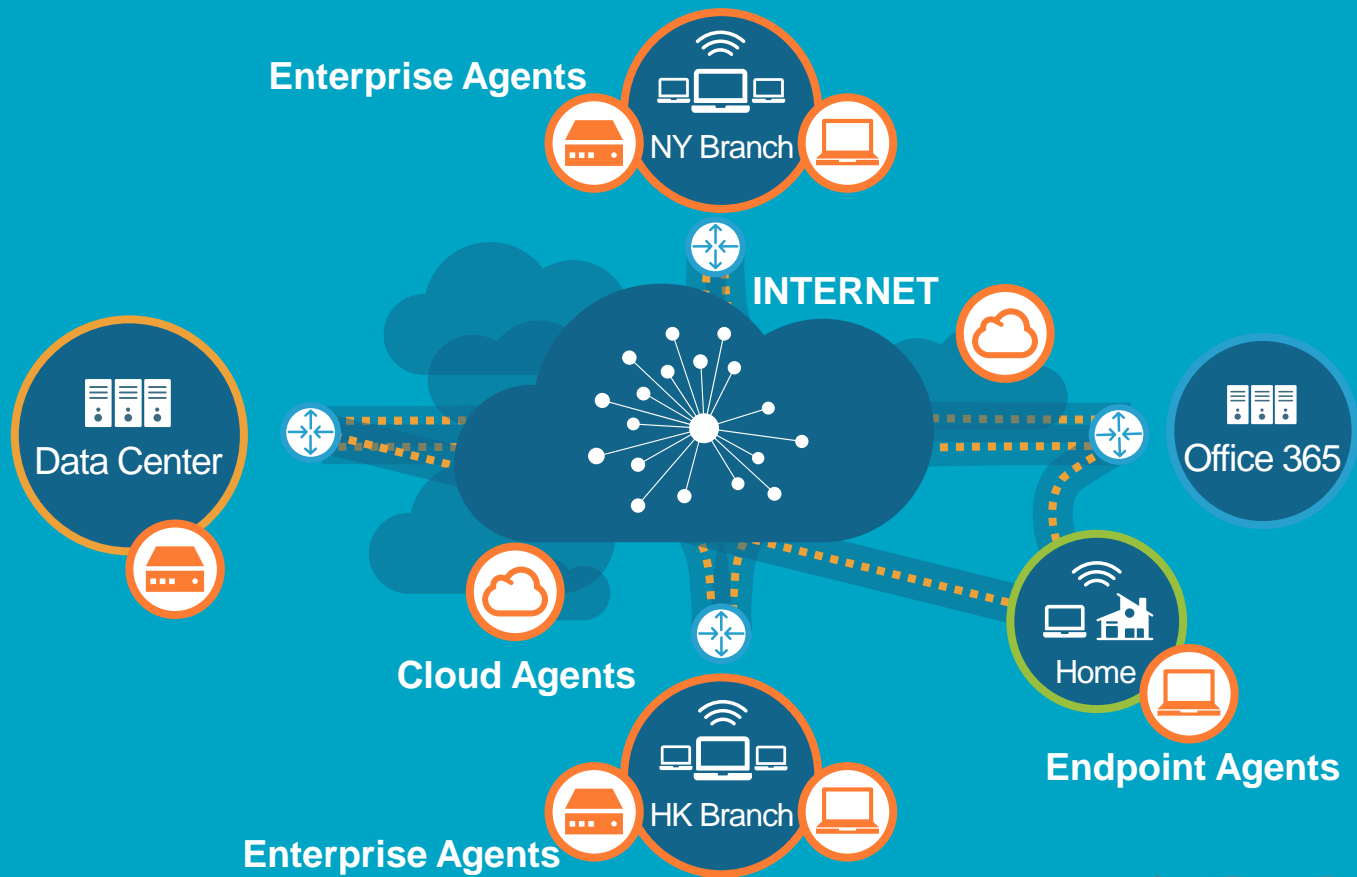
Today



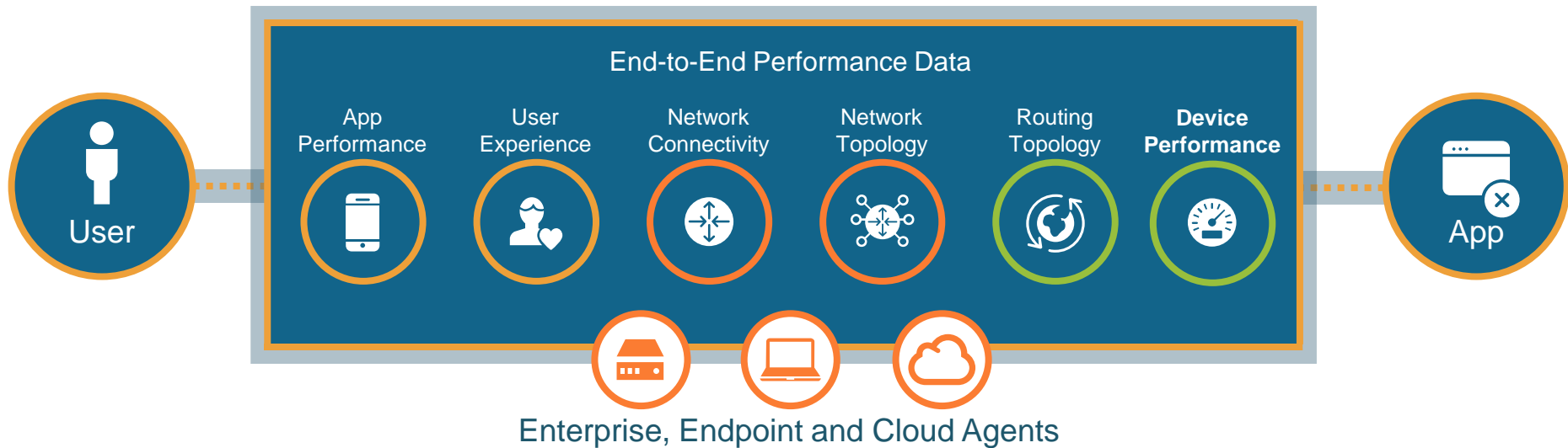
Traditional monitoring is ineffective in this world



Collect performance data from every perspective



A unified view of performance from user to app



ThousandEyes Enterprise Agent VNF for Juniper NFX



ThousandEyes for Juniper Cloud CPE

Streamline Application Monitoring and Troubleshooting

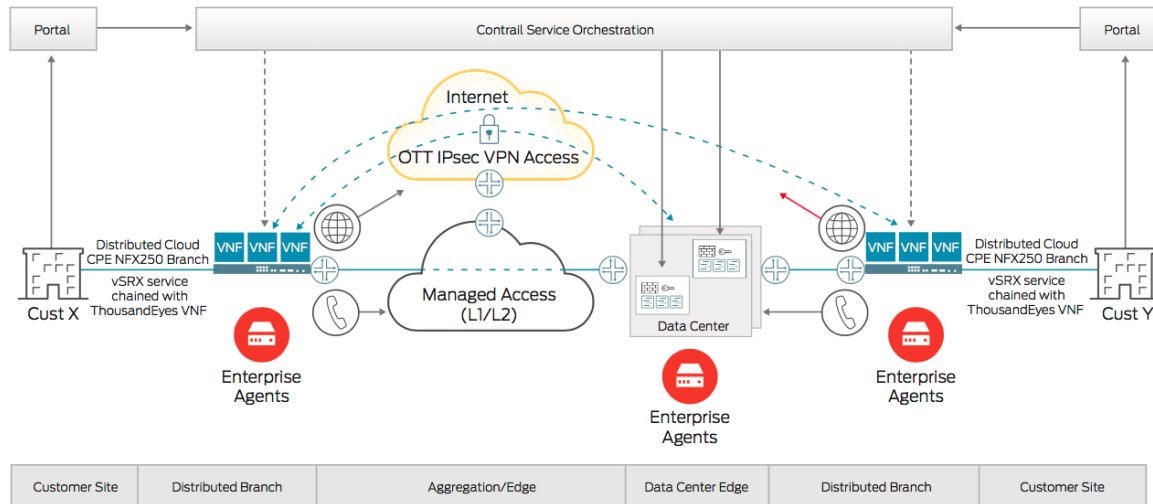
ThousandEyes Enterprise Agents deployed on NFX250 branch routers provide integrated network intelligence for Juniper's leading NFV platform, Cloud CPE



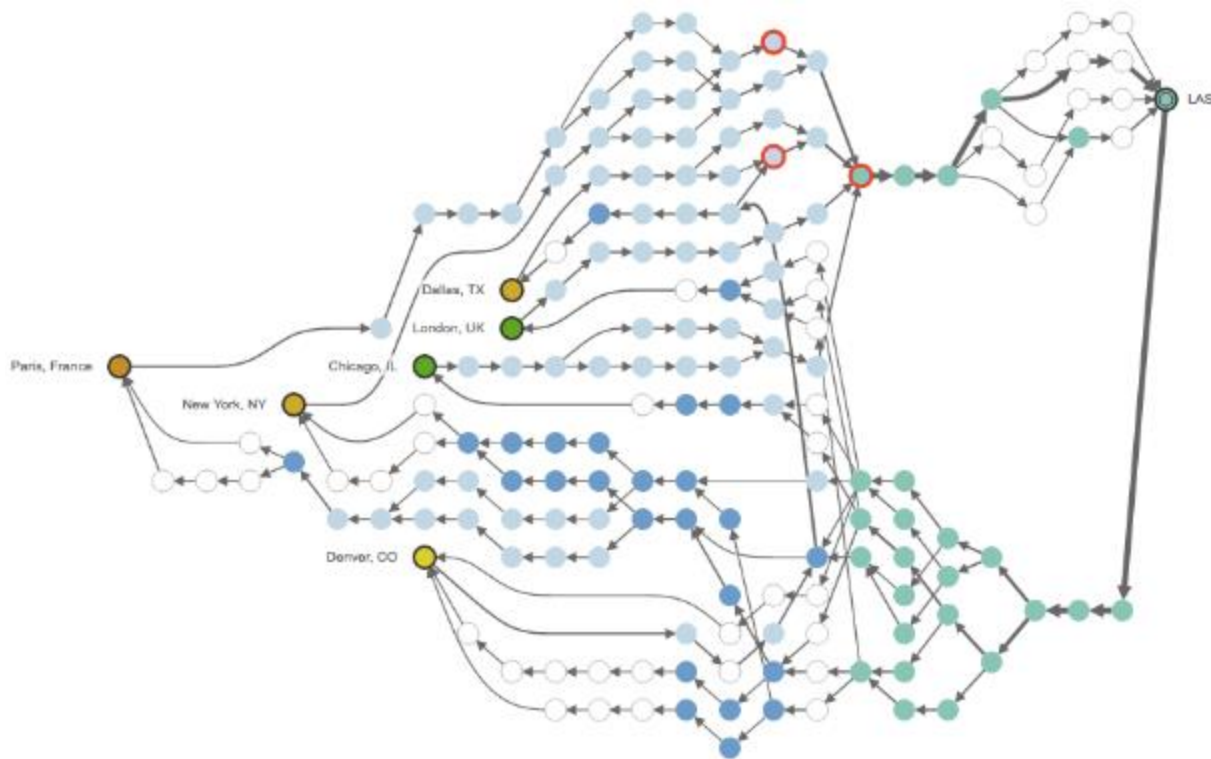
ThousandEyes for Juniper Cloud CPE

Juniper-ThousandEyes Joint Solution Enables Time-Saving Automation

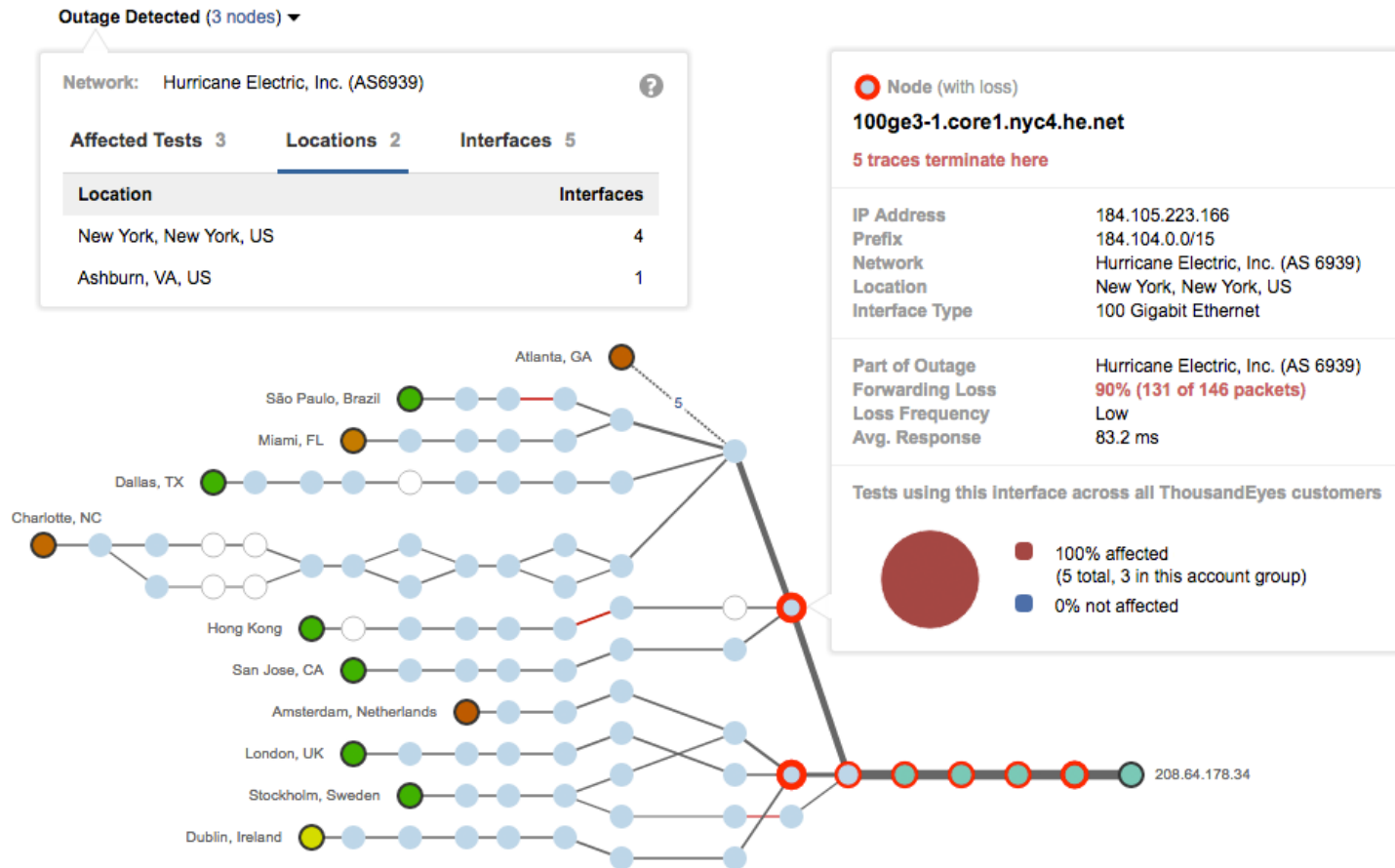
Leverage Contrail to rapidly instantiate a service chain combining ThousandEyes' VNFs with Juniper's vMX Virtual Routers and vSRX Virtual Firewalls



Help Enterprises visualize their entire WAN



Offer end-to-end transit and outage visibility



SaaS Performance Visibility



See app and network performance at a glance

Availability



99.79% Mean

Web - HTTP Server — Availability

▲ 0.19

OWA

1 Test • All Agents

99.68% Mean

Web - HTTP Server — Availability

▲ 0.24

Sharepoint Online

1 Test • All Agents

99.66% Mean

Web - HTTP Server — Availability

▲ 0.09

OneNote

OneNote • All Agents

99.88% Mean

Web - HTTP Server — Availability

▲ 0.19

Word Online

Word Online • All Agents

Response Times - OWA



Web - HTTP Server — Response Time • 1 Test



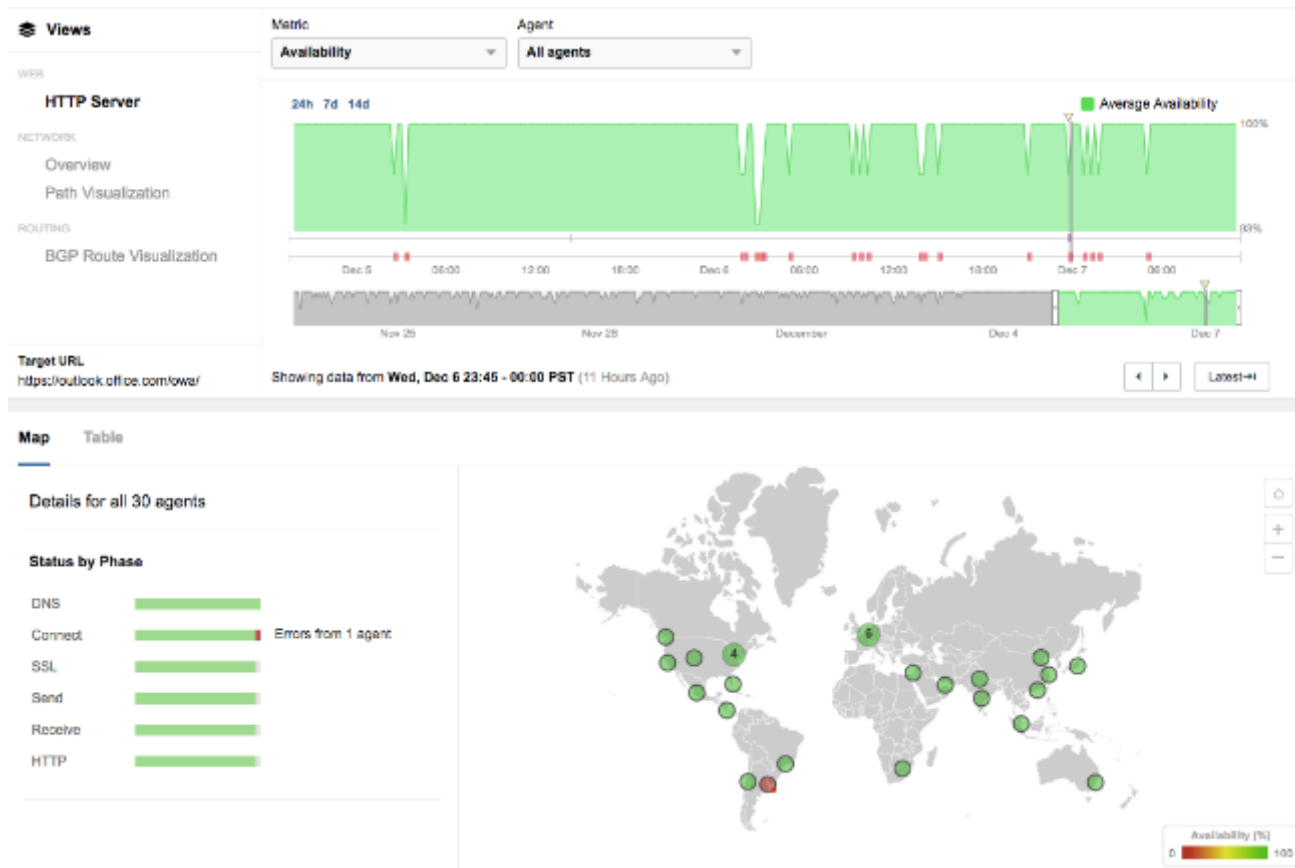
Response Times - Sharepoint Online



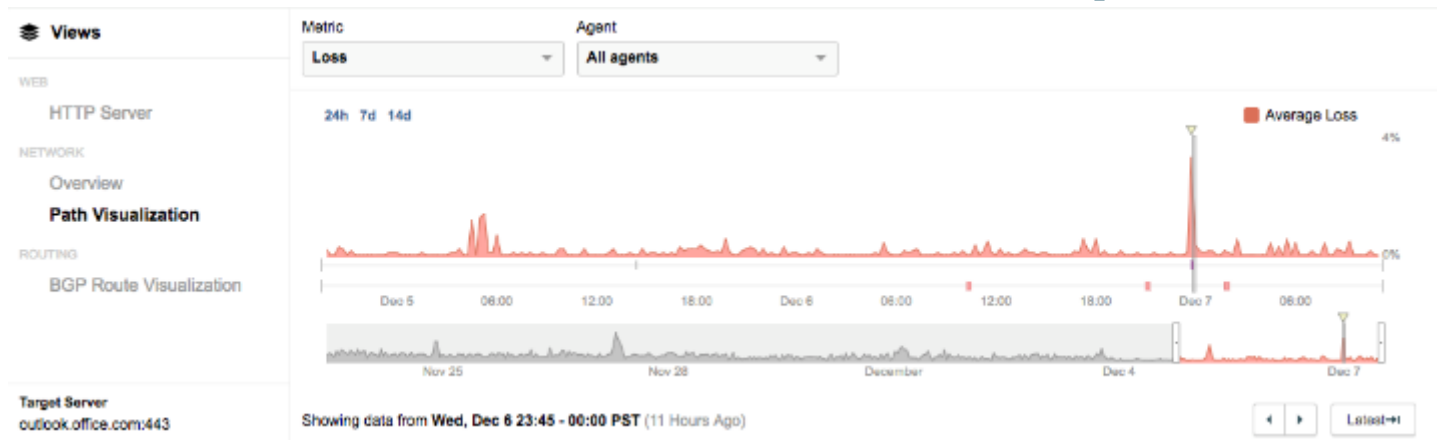
Web - HTTP Server — Response Time • 1 Test



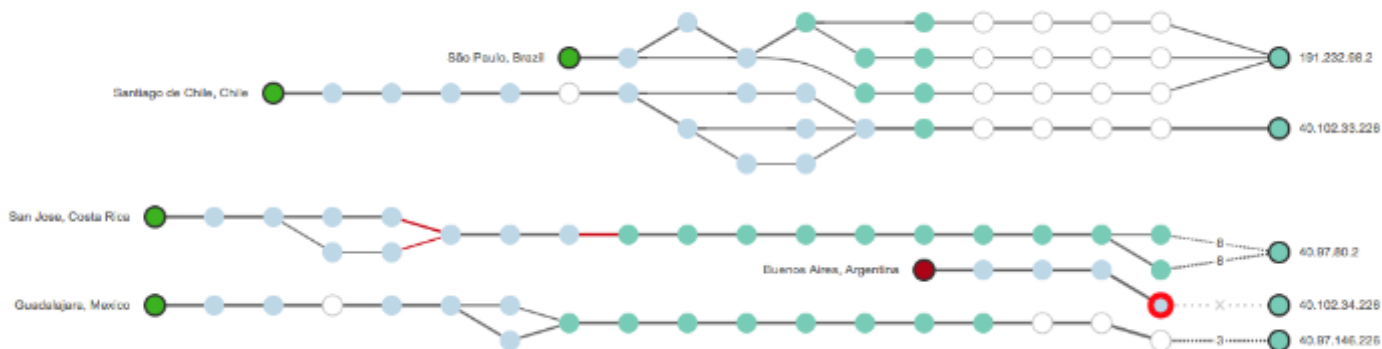
Monitoring a SaaS application



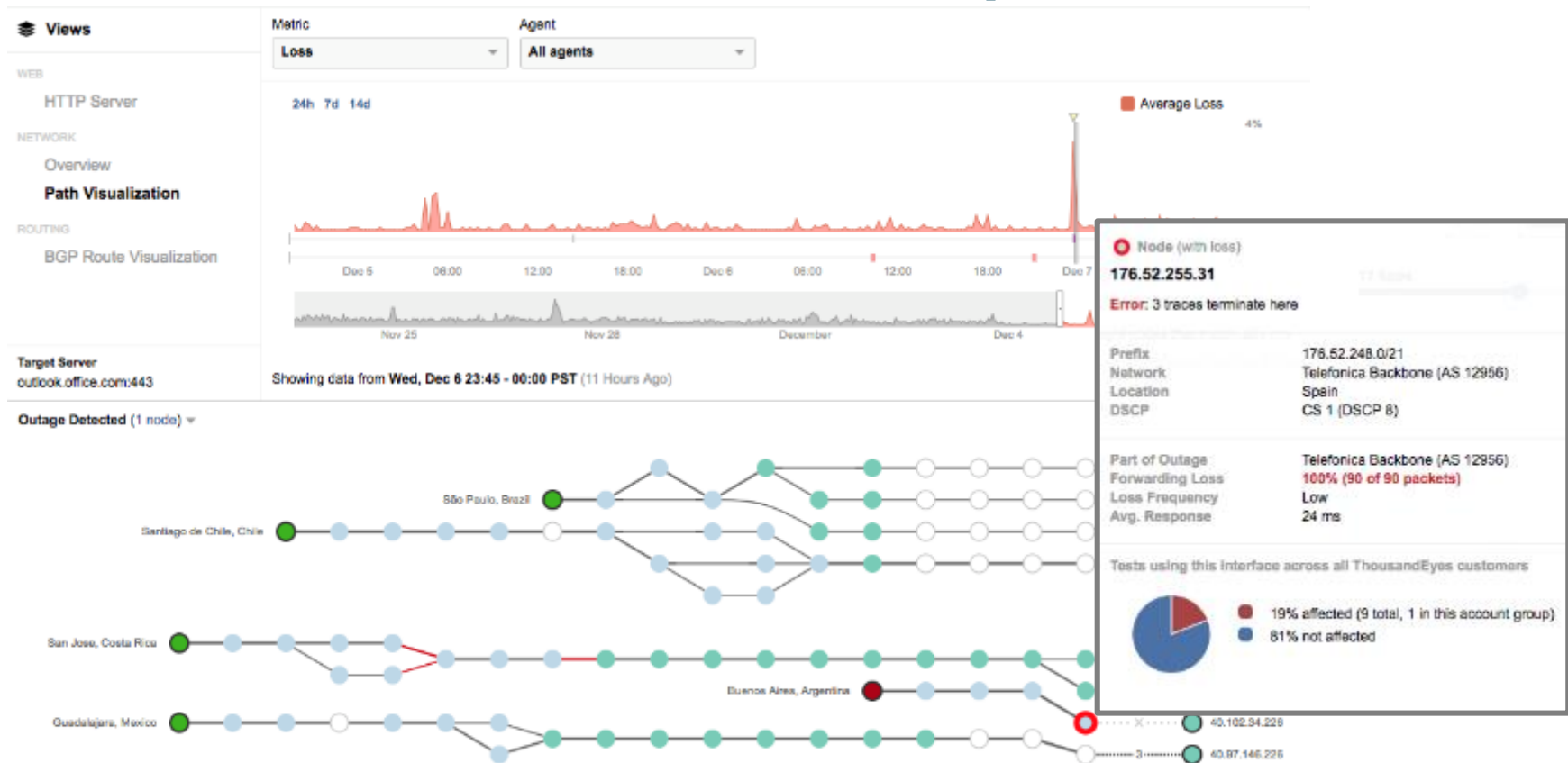
Correlate with network performance



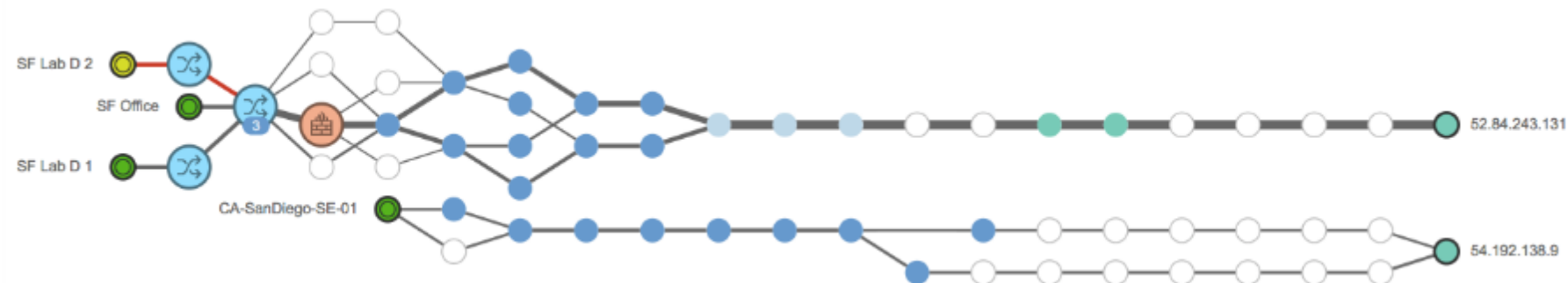
Outage Detected (1 node) ▾



Correlate with network performance



Infrastructure context across the WAN



Easily define triggers to drive automation

Settings

Notifications

GENERAL

Tests

3 of 12 tests selected

Agents

All agents

ALERT CONDITIONS

All conditions are met by at least

2

 agents

2

 of

3

 times in a row:

Available Bandwidth ≤

10

 Mbps

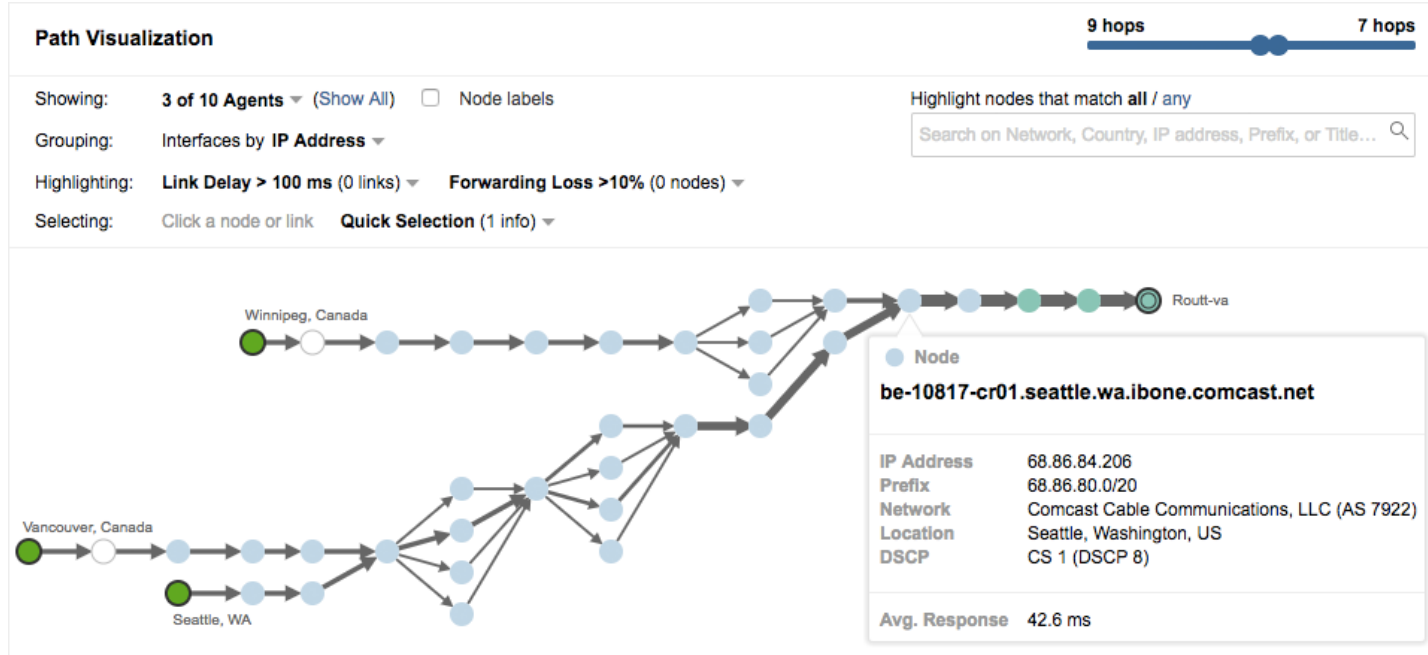
Cancel

Create New Alert Rule

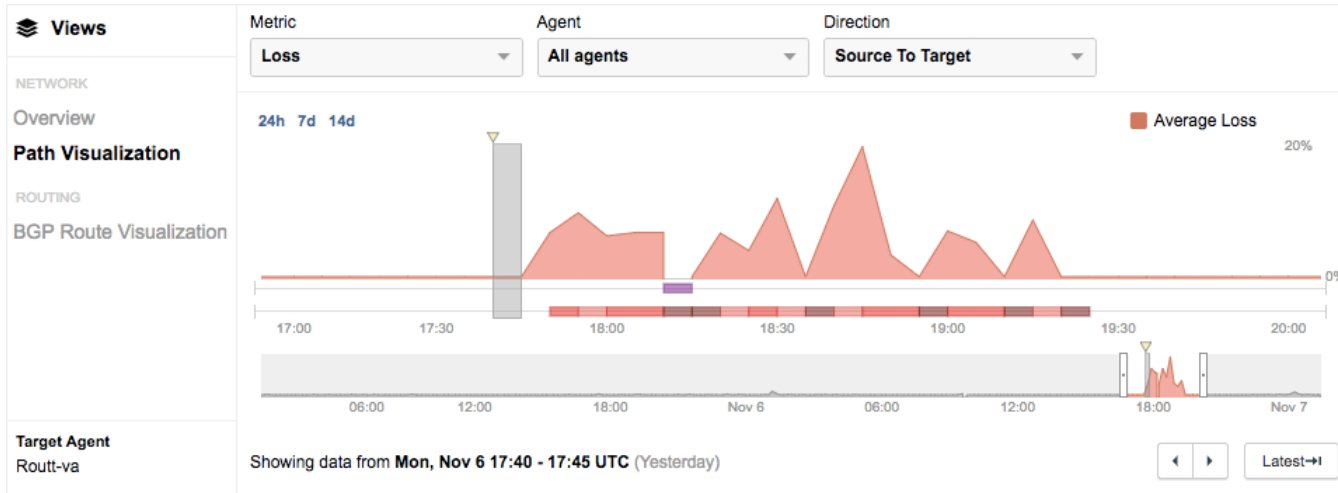
How the Comcast Outage Impacted Internet-Based WAN Performance



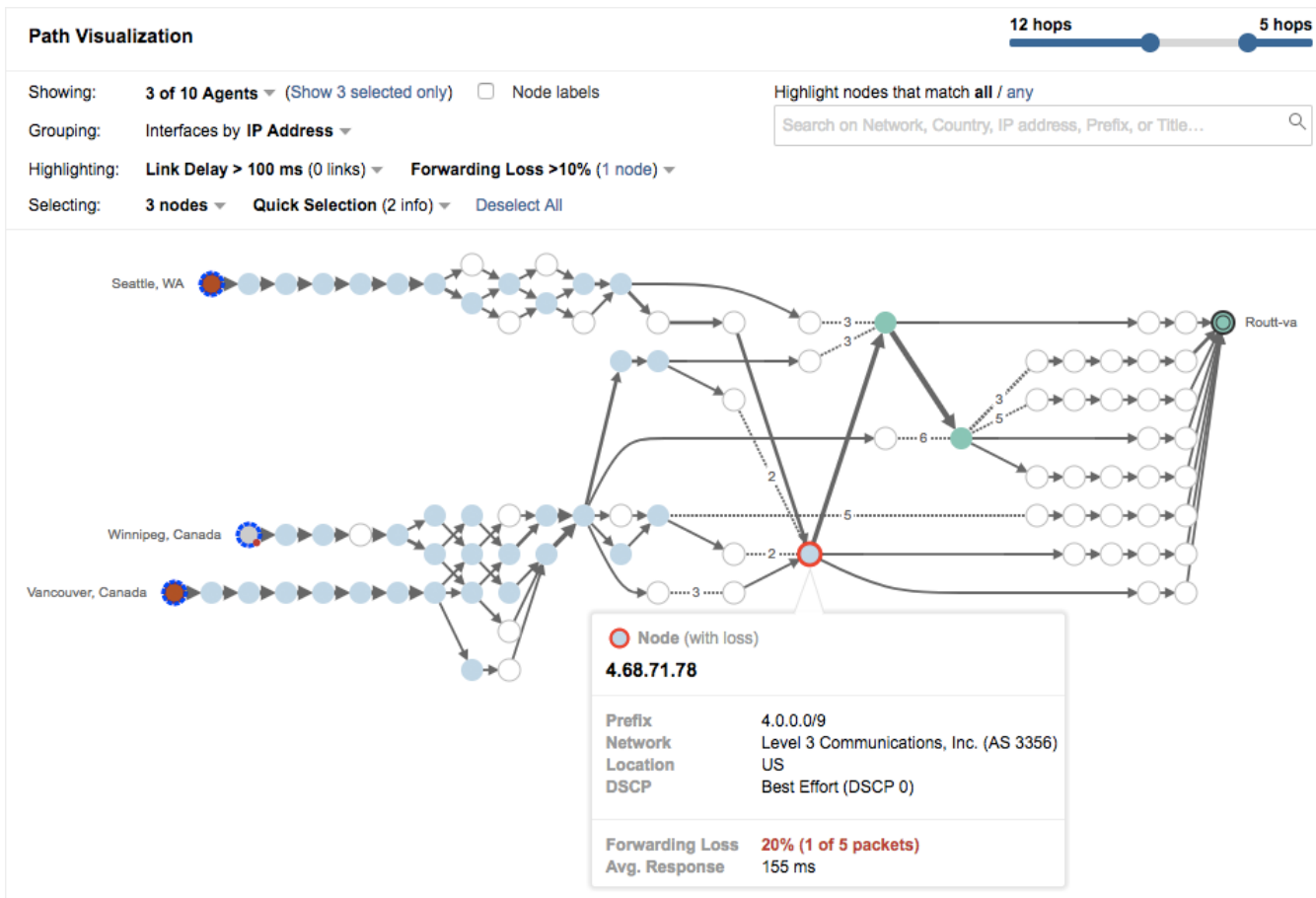
Normal Internet traffic to branch



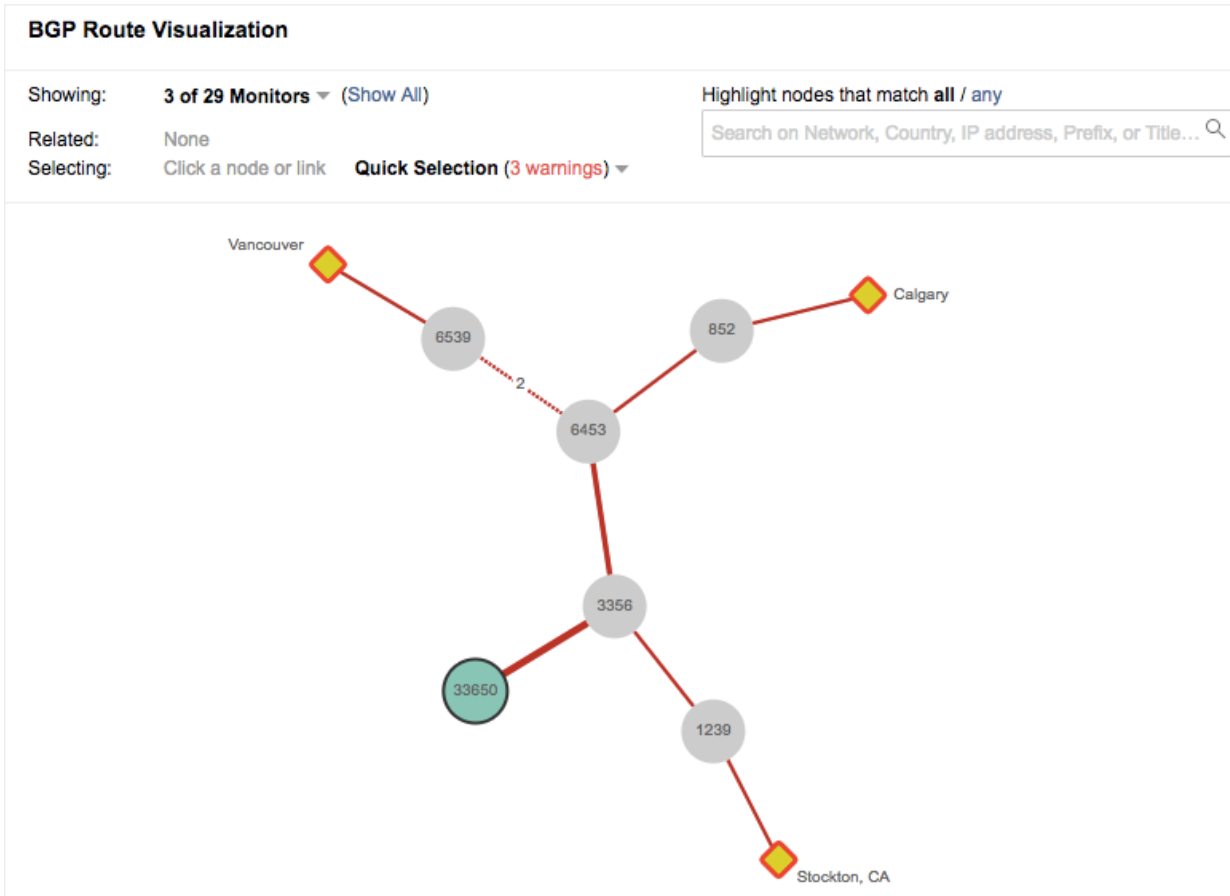
Elevated rates of packet loss detected



Traffic sent through Level 3 instead



Root Cause: Level 3 route leak



Find Out More At
<https://www.thousandeyes.com/integrations/juniper>

