

# Digital Experience Monitoring

Wie kann ich den Überblick über Datenströme behalten  
& Troubleshooting verbessern?

**Sven Arend**  
**Thomas Pilz**

**- Sales Specialist**  
**- Technical Solutions Architect**

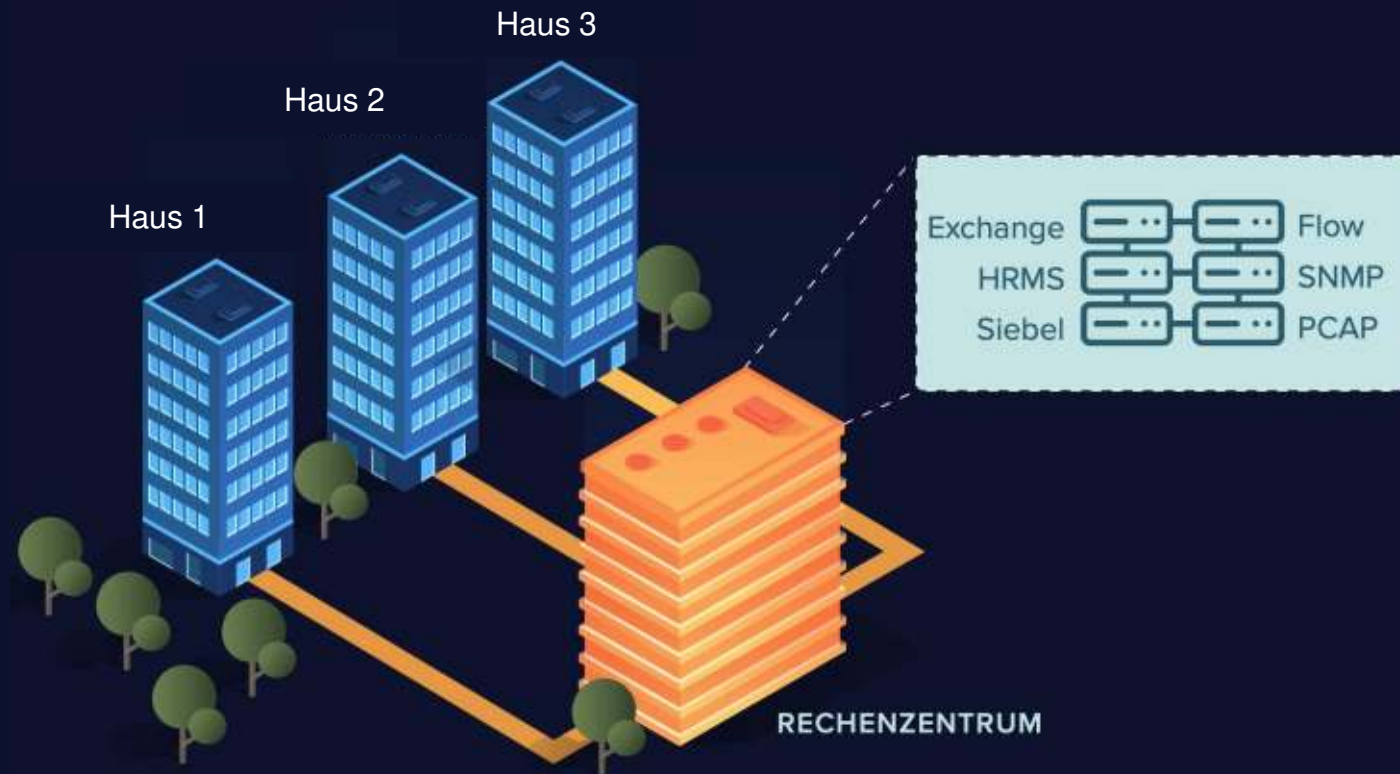


**ThousandEyes**

ThousandEyes is  
now part of Cisco.  **CISCO**

# Früher: Komplette Verantwortung und Kontrolle durch die IT

Sämtliche Infrastrukturelemente innerhalb des Unternehmensperimeters



# Heute: Services sind deutlich stärker voneinander abhängig

Die User Experience hängt zunehmend von einer Vielzahl externer Services wie Cloud, SaaS und Internet ab, welche die IT nicht direkt verantwortlich oder kontrolliert.



# Die Echte Reise von Daten - Sichtbar



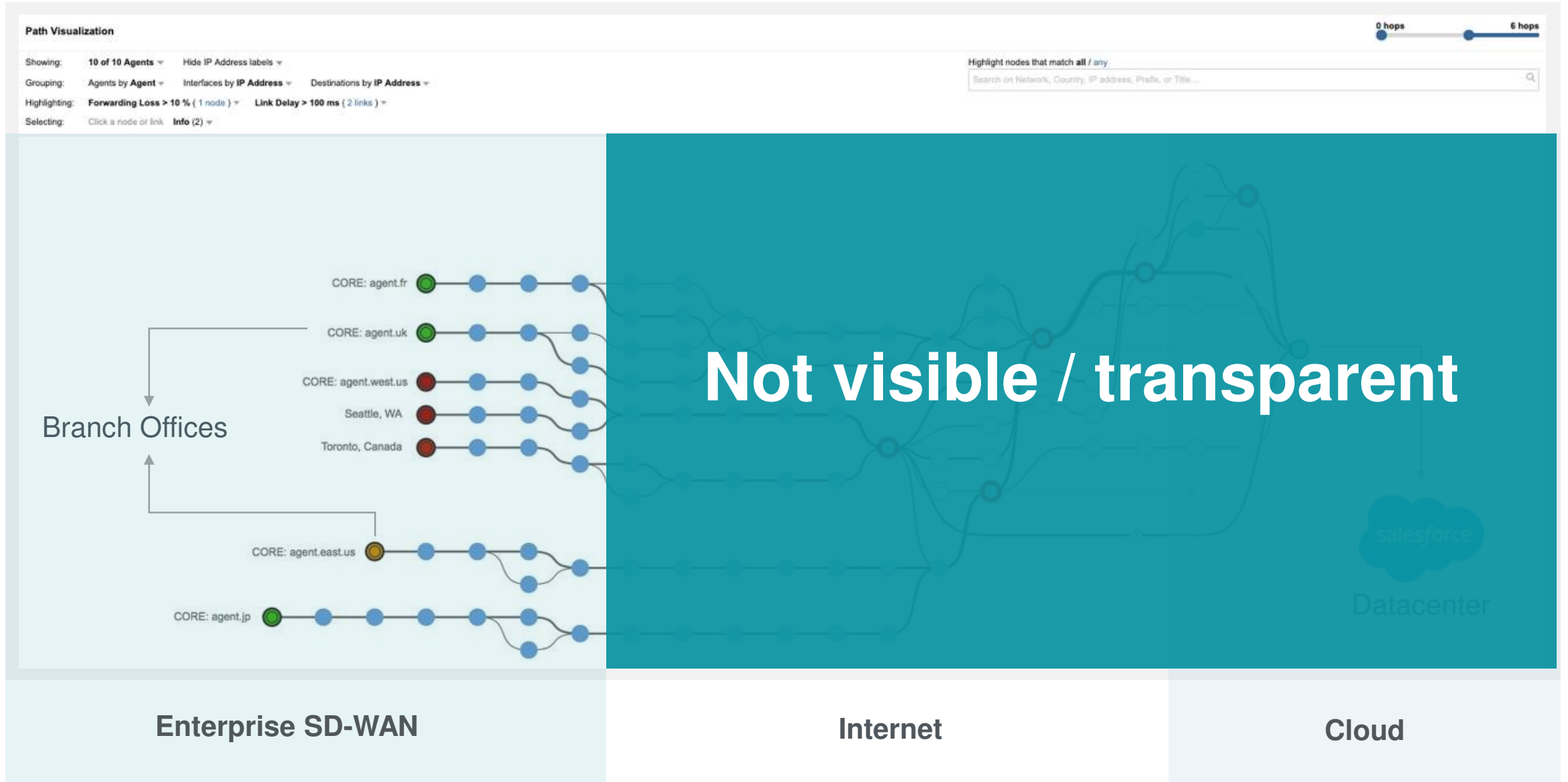
Enterprise WAN (MPLS)

Branch Offices

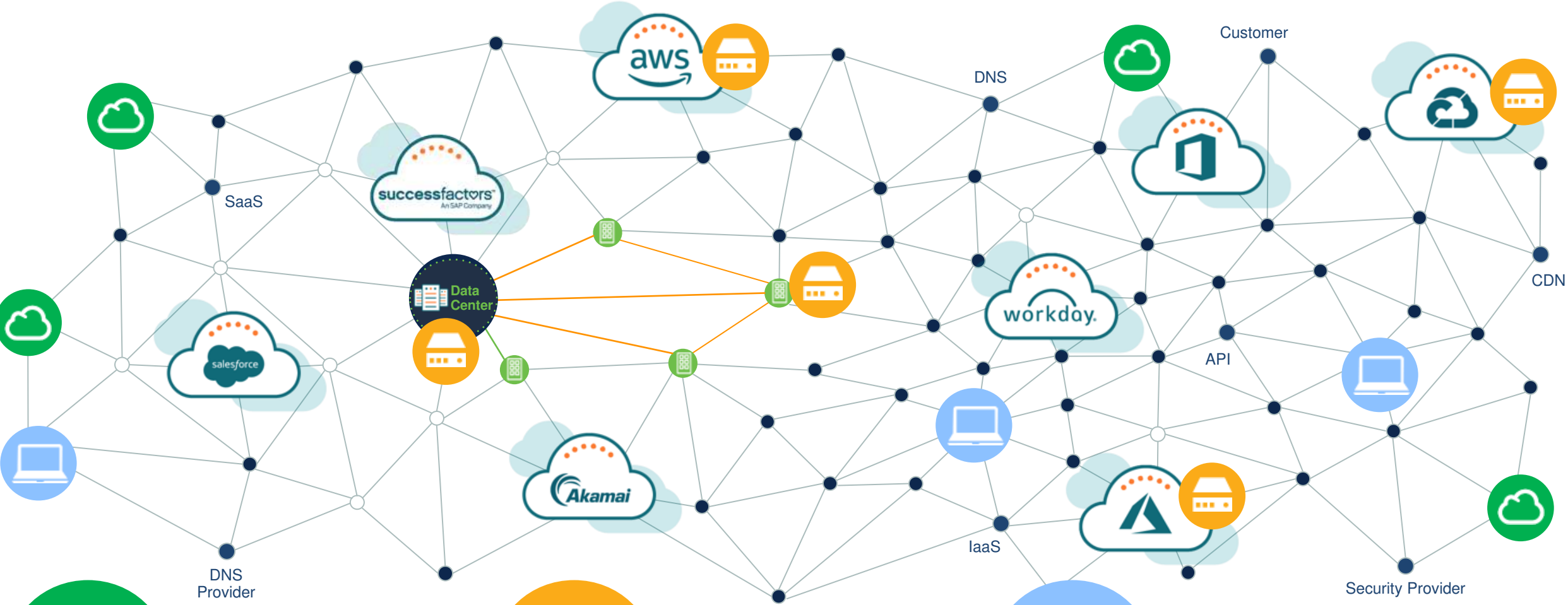
Enterprise Data Center  
hosts all applications



# To Cloud and Internet-Centric IT



# ThousandEyes End to End Visibility



Outside In



Cloud Agents

Inside Out  
Inside In



Enterprise Agents

Employee Experience



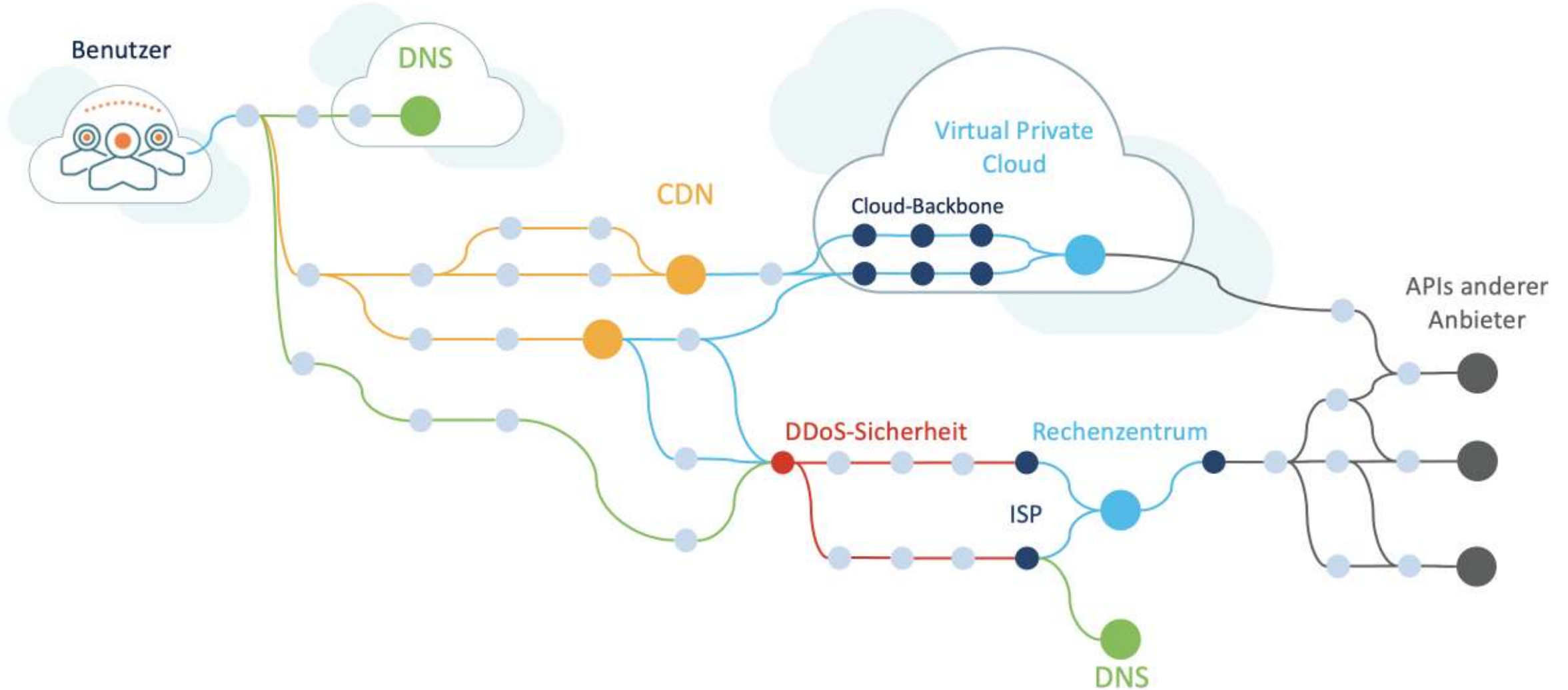
Endpoint Agents





**DEMO**

# Moderne Internetarchitektur für Anwendungen



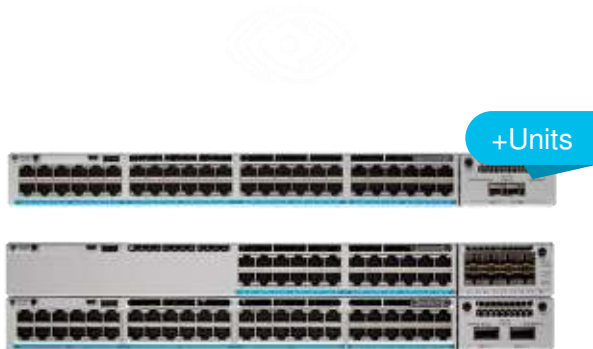


# Expand visibility for actionable insights network-wide

Cisco Catalyst, ISR, Nexus



ThousandEyes



Catalyst 9300/9400  
Switching  
*Available now*

✓ Leverage existing Cisco hardware



Catalyst 8300/8200 Series  
Edge Platforms  
*Available now*

✓ Gain evidence and eliminate wasteful finger pointing



Integrated Services  
Routers (ISR) 4000 Series  
*Available now*

✓ Improve application performance with expanded visibility



Nexus 9500/9300  
NX-OS Mode  
*Available now*

# Expand visibility for actionable insights network-wide

Upcoming + ThousandEyes



Catalyst 8500/ASR1k  
Platforms  
*Available now*



Meraki MX Security  
Appliances  
**January '23**



Nexus 9500/9300  
ACI mode  
**November '22**

✓ Leverage existing Cisco hardware

✓ Gain evidence and eliminate wasteful finger pointing

✓ Improve application performance with expanded visibility

# Bietet eine gemeinsame Betriebsprache

“Ist es das Netzwerk?”

“Ist es die Applikation?”

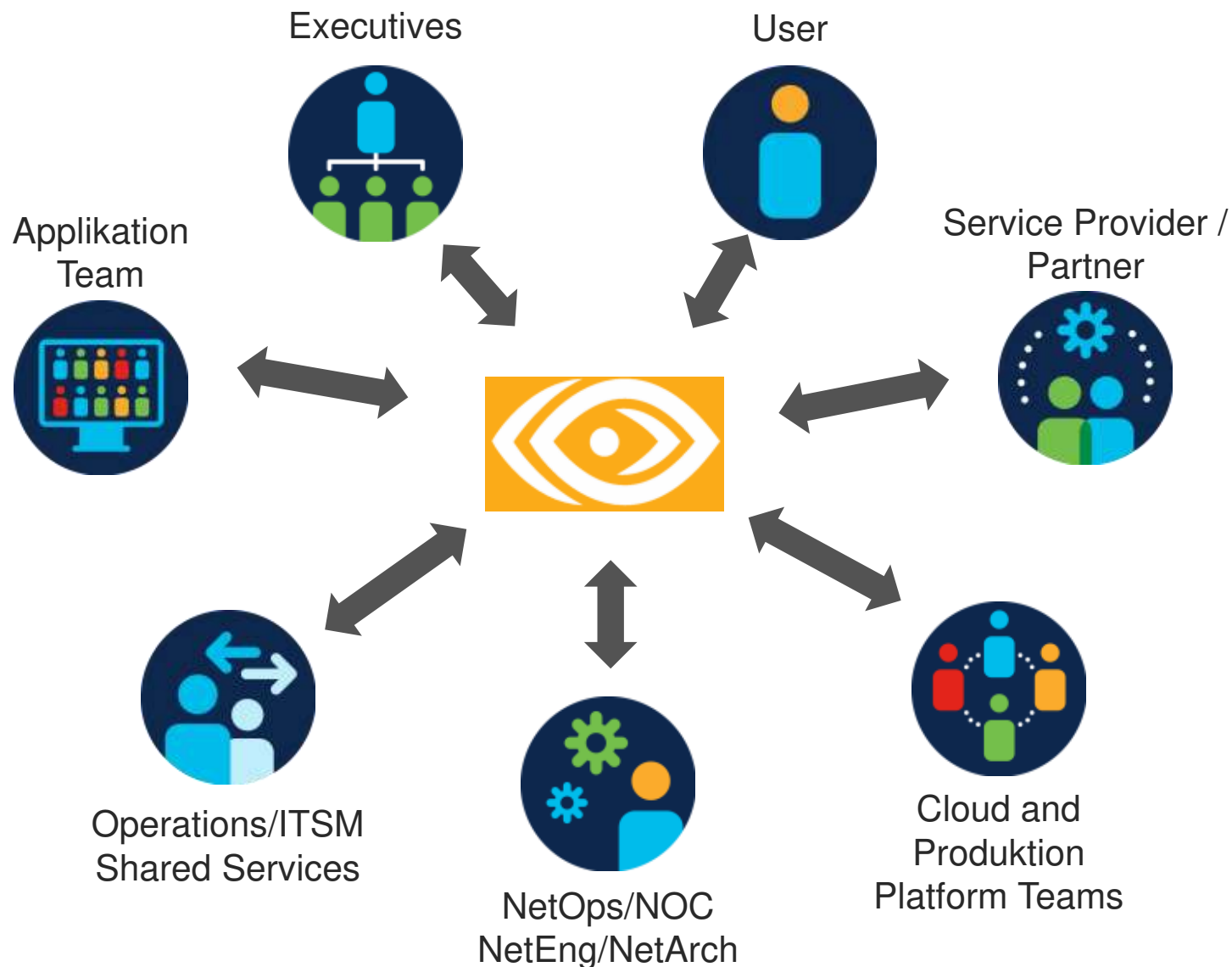
“Zu wem soll eskaliert werden?”

“Ist es das CDN? DNS?”

“Warum ist die Latenz so hoch?”

“Ist da ein Internet Outage?”

**“Hier sind die Daten!”**



Zu Risiken und  
Nebenwirkungen  
fragen Sie Ihren  
Sales Specialist...



Kostenlose Testversion anfordern –  
[www.thousandeyes.com/signup](http://www.thousandeyes.com/signup)



Besuchen Sie unsere Website –  
[www.thousaandeyes.com/de](http://www.thousaandeyes.com/de)

ThousandEyes News Blog –  
[www.thousandeyes.com/blog](http://www.thousandeyes.com/blog)



Sprechen Sie mit Ihren Cisco &  
ThousandEyes Account Teams



**ThousandEyes** 

Thrive in a connected world™



**ThousandEyes**

ThousandEyes is  
now part of Cisco.

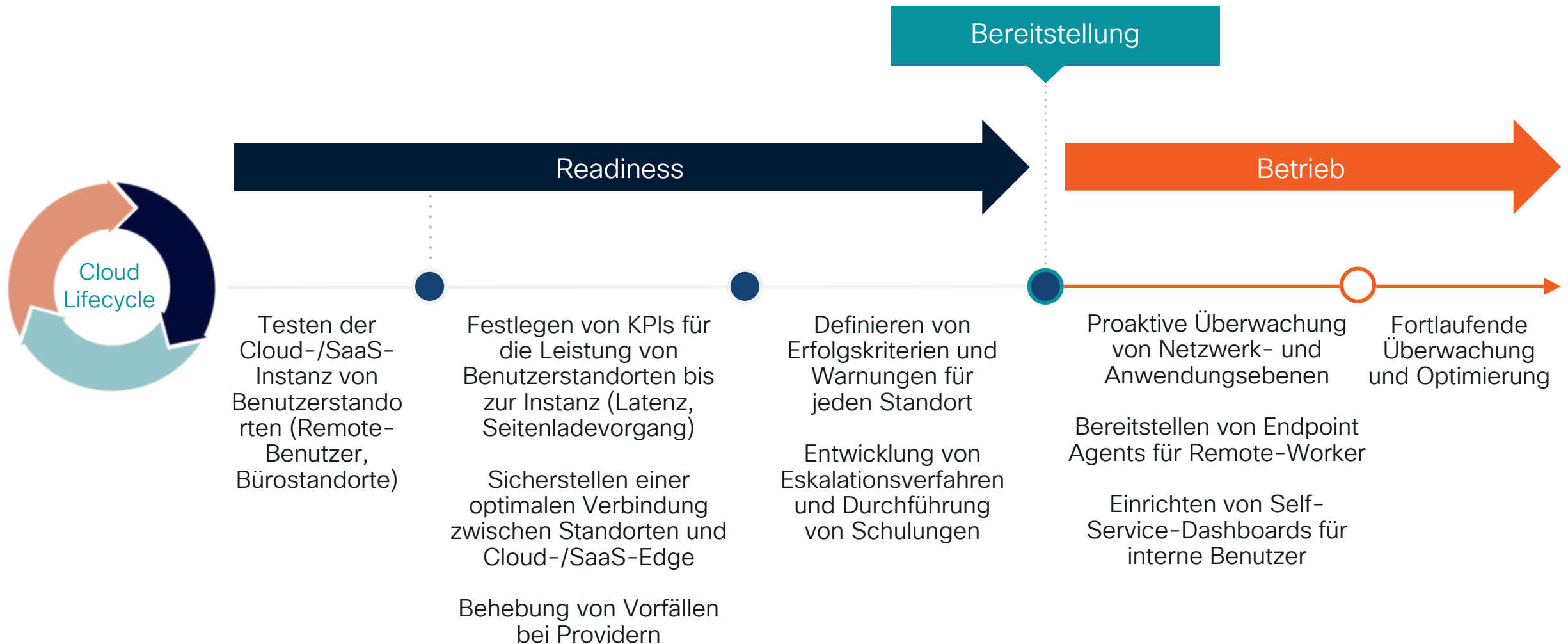




# Backup Slides



# Implementierung eines Cloud Readiness Lifecycle



# Webex Cloud Agents

## Path Visualization

8 hops 13 hops

Showing: 1 of 1 Test ▾ 2 of 3 Agents ▾ (Show All) Hide IP Address labels ▾

Grouping: Agents by Agent ▾ Interfaces by IP Address ▾

Highlighting: Forwarding Loss > 10 % ( 0 nodes ) ▾ Link Delay > 100 ms ( 2 links ) ▾

Selecting: 2 nodes ▾ Info (1) ▾ Deselect All

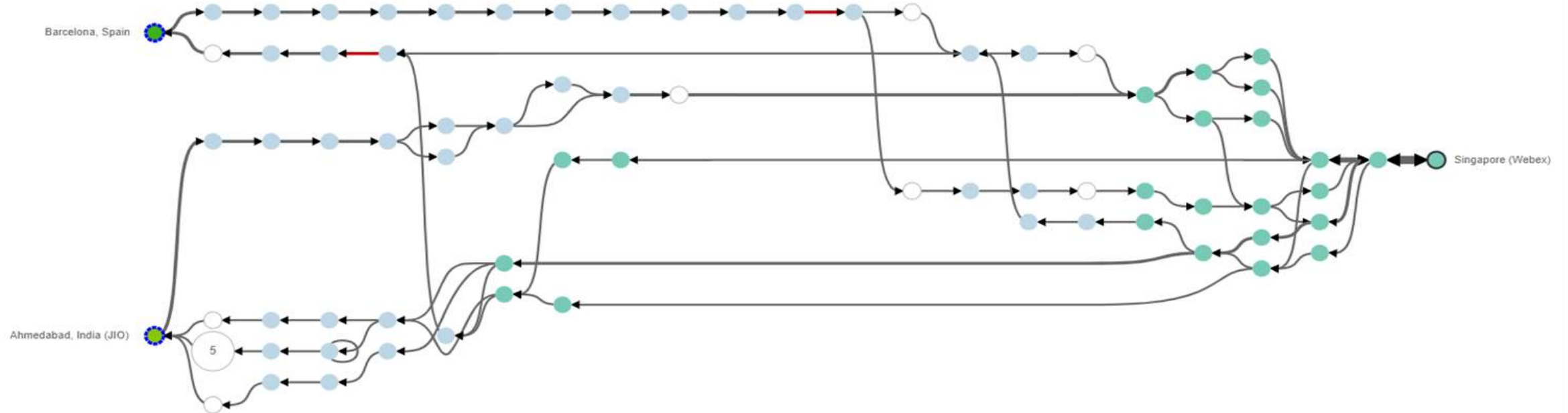
Highlight nodes that match all / any

Search on Network, Country, IP address, Prefix, or Title...



< Undo

Menu ▾



- Overview
- Alerts center

Actions

- MONITORING
  - Webex experience
  - Analytics
  - Troubleshooting**
  - Reports
- MANAGEMENT
  - Users
  - Workspaces
  - Devices
  - Apps
  - Account
  - Organization settings
- SERVICES
  - Messaging
  - Meetings
  - Calling
  - Contact Center
  - Connected UC
  - UCM Cloud
  - Hybrid

Participant Details - Frank Brown



**Network Path** 17:46 - 17:47

⚠ We detected 1 node with quality issue, click each end point to view details.

Network	Node	IP address	Prefix	Avg. Response	Location
Road Runner LLC	lag2.runnarlc.com	173.39.242.73	173.39.0.0/16	214 ms	Dallas, Texas
Road Runner LLC	aag3.runnarlc.com	173.39.241.101	173.39.0.0/16	32 ms	Dallas, Texas

ThousandEyes

Equipment and Networks

Client: Webex Meeting 42.5.3.9  
 Platform: Mac 12.3.1  
 Join From: Webex App 42.7.0.22227  
 Connection: wifi  
 Media Node: Dallas, Texas  
 Local IP: 10.140.202.176/28  
 Public IP: 173.38.241.77/30  
 Audio Transport: UDP  
 Video Transport: UDP  
 Share Transport: UDP  
 Audio Codec: Opus (Sending)  
 Opus (Receiving)  
 Video Codec: H.264 BP (Sending)  
 H.264 BP (Receiving)  
 Share Codec: H.264 BP (Receiving)  
 Microphone: External Microphone  
 Speaker: External Headphones  
 Camera: Cisco Webex Desk Camera  
 Noise Removal: 38 minutes  
 Virtual Background: On

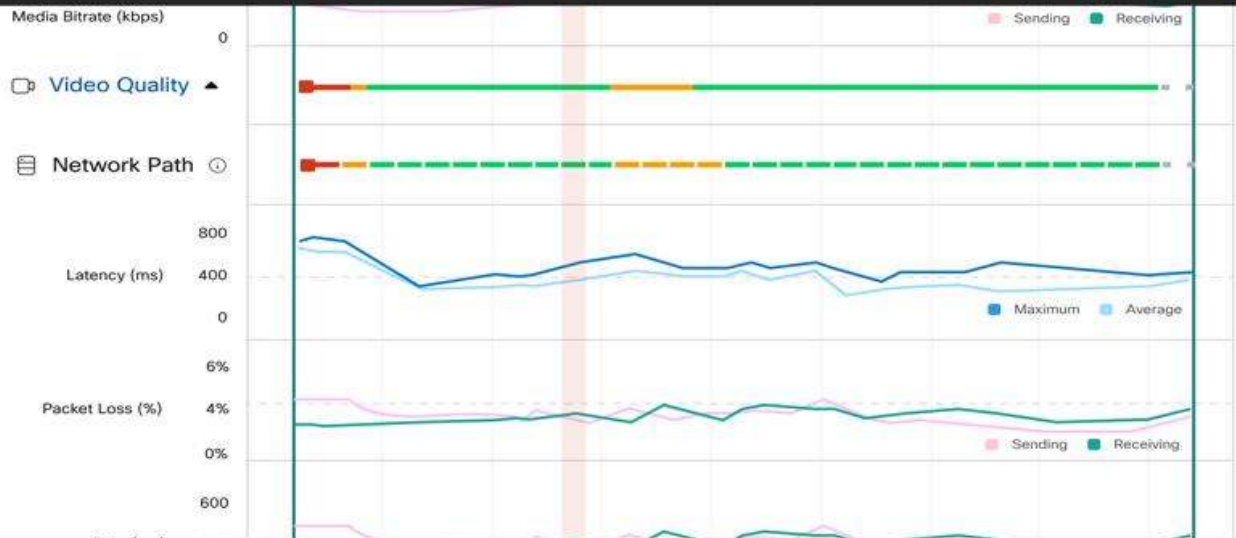


Chart Legend

- Indicators**
- Host
  - Sharing
  - Change
  - Mute
- Signal Quality**
- Good
  - Fair
  - Poor
  - Not Available
  - Not Used
- Join Meeting Time**
- Good
  - Fair
  - Poor
- Exit Meeting**
- Normal
  - Abnormal

# Predictive network assurance for digital **experience** transformation

## Cisco ThousandEyes WAN Insights

### Forecasts conditions

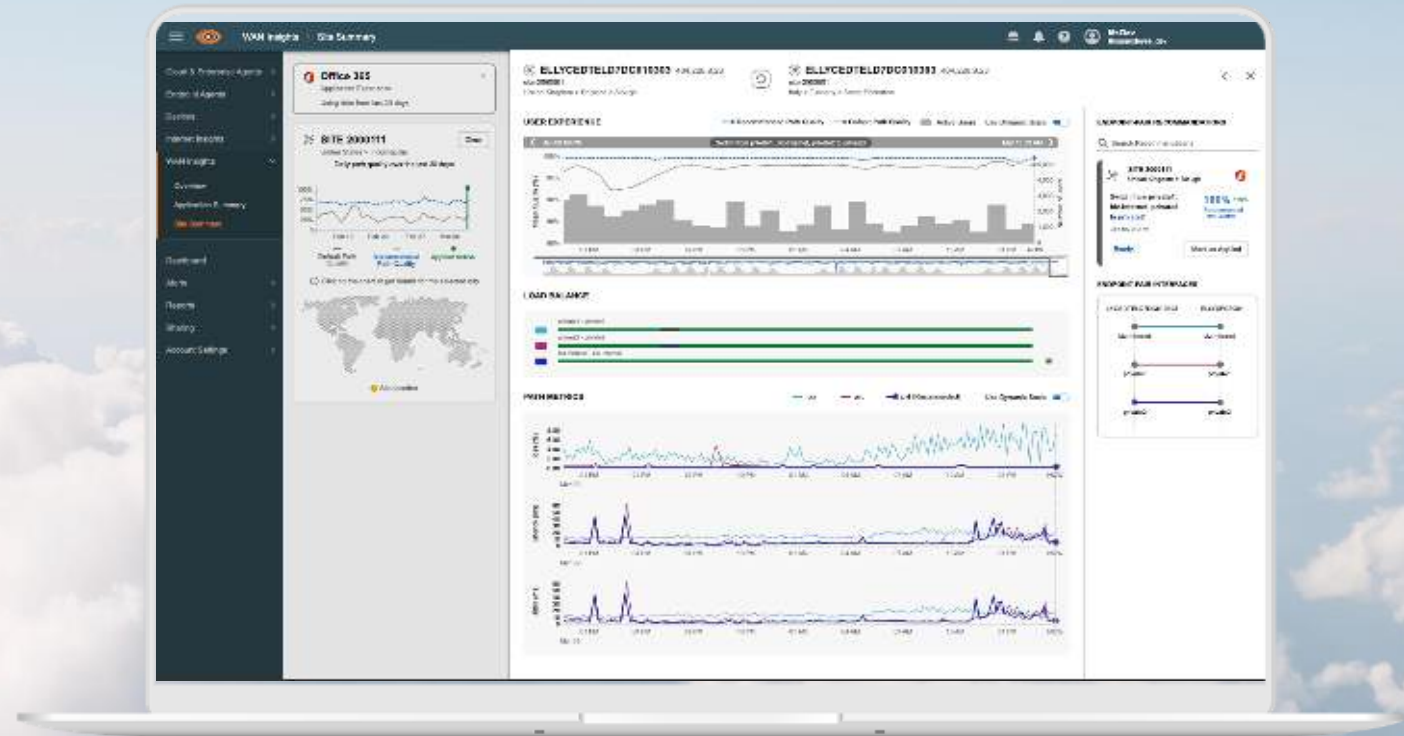
*Identifies expected issues based on predictive analysis*

### Recommends actions

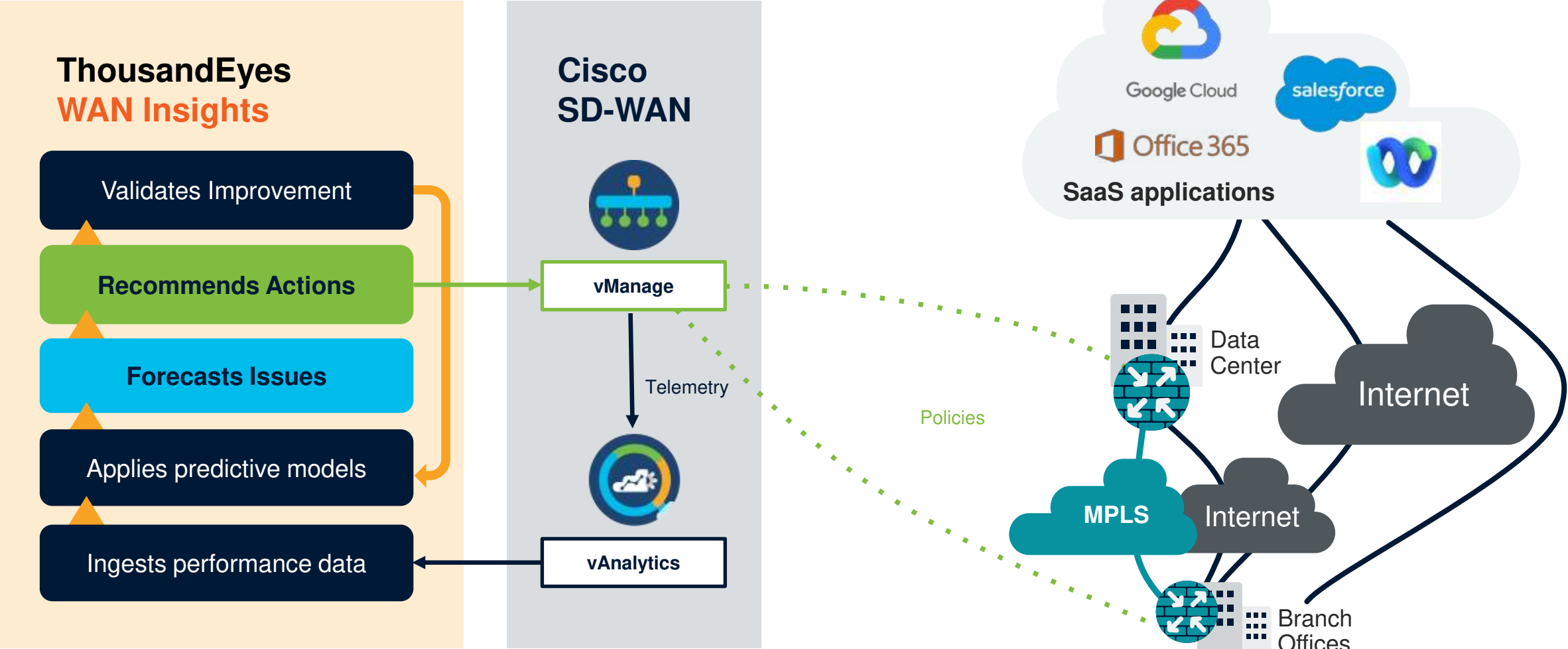
*Provides specific steps to improve application experience*

### Improves experience

*Sustained improvement over a longer period of time - promotes continuous improvement.*

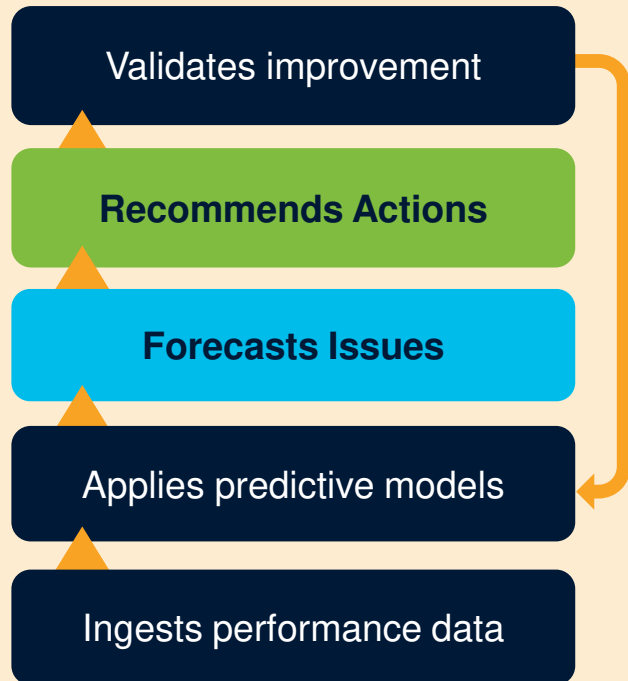


# Predictive optimization with Cisco SD-WAN for improved user experience



# Stop *reacting* to issues. Start *preventing* issues.

## ThousandEyes WAN Insights



Predictive modeling to forecast issues and recommend actions to prevent degraded user experience

Tune SD-WAN routing policies per site to avoid performance issues and measurably improve user experience

Gain operational efficiency with data-driven insights and success validation



# We Help Companies Like These Manage Digital Experiences

SOFTWARE AND SERVICES	FINANCIAL SERVICES	RETAIL AND ECOMMERCE
HEALTHCARE	MEDIA AND ENTERTAINMENT	EDUCATION
COMMUNICATIONS	CLOUD INFRASTRUCTURE	TECH HEAVYWEIGHTS



# The Modern IT Operations Stack

# Pre-Cloud IT Operations Visibility Architecture

## Monitoring Category

## IT Management Domain

Presentation Layer		All
IT Service Management		All
APM		Internally Developed Apps & Services
IT Infrastructure Mgmt (SNMP)		Internal Data Center & WAN infrastructure
Network Perf Mgmt & Diagnostics (Flow/PCAP)		
Network Capacity Mgmt (Flow)		
Log Mgmt		All

# Critical Visibility Gaps Emerge in the Cloud


Monitoring Category		IT Management Domain
Presentation Layer		All
IT Service Management		All
APM		Internally Developed Apps & Services
<b>Missing Visibility</b>		<div style="border: 2px solid red; padding: 10px; text-align: center;"> <p><b>Digital Experience</b>  <b>ISP, DNS, CDN, DDoS. CASB providers</b>  <b>SaaS providers</b>  <b>SD-WAN Internet transport</b>  <b>Internet Routing</b></p> </div>
Cloud-Specific Mgmt (e.g. CloudWatch)		
IT Infrastructure Mgmt (SNMP)		
Network Perf Mgmt & Diagnostics (Flow/PCAP)		
Network Capacity Mgmt (Flow)		Internal Data Center & WAN infrastructure



# Modern IT Ops Visibility Architecture

## Monitoring Category

## IT Management Domain

Presentation Layer		All
IT Service Management		All
APM		Internally Developed Apps & Services
		
Cloud-Specific Mgmt (e.g. CloudWatch)		<b>Digital Experience</b> ISP, DNS, CDN, DDoS, CASB providers SaaS providers SD-WAN Internet transport Internet Routing
IT Infrastructure Mgmt (SNMP)		
Network Perf Mgmt & Diagnostics (Flow/PCAP)		
Network Capacity Mgmt (Flow)		Cloud Infrastructure
Log Mgmt		Internal Data Center & WAN infrastructure
		All



# ThousandEyes Collective Intelligence



**Billions**

Daily Path  
Measurements

**Thousands**

Digital  
Services

**20K+**

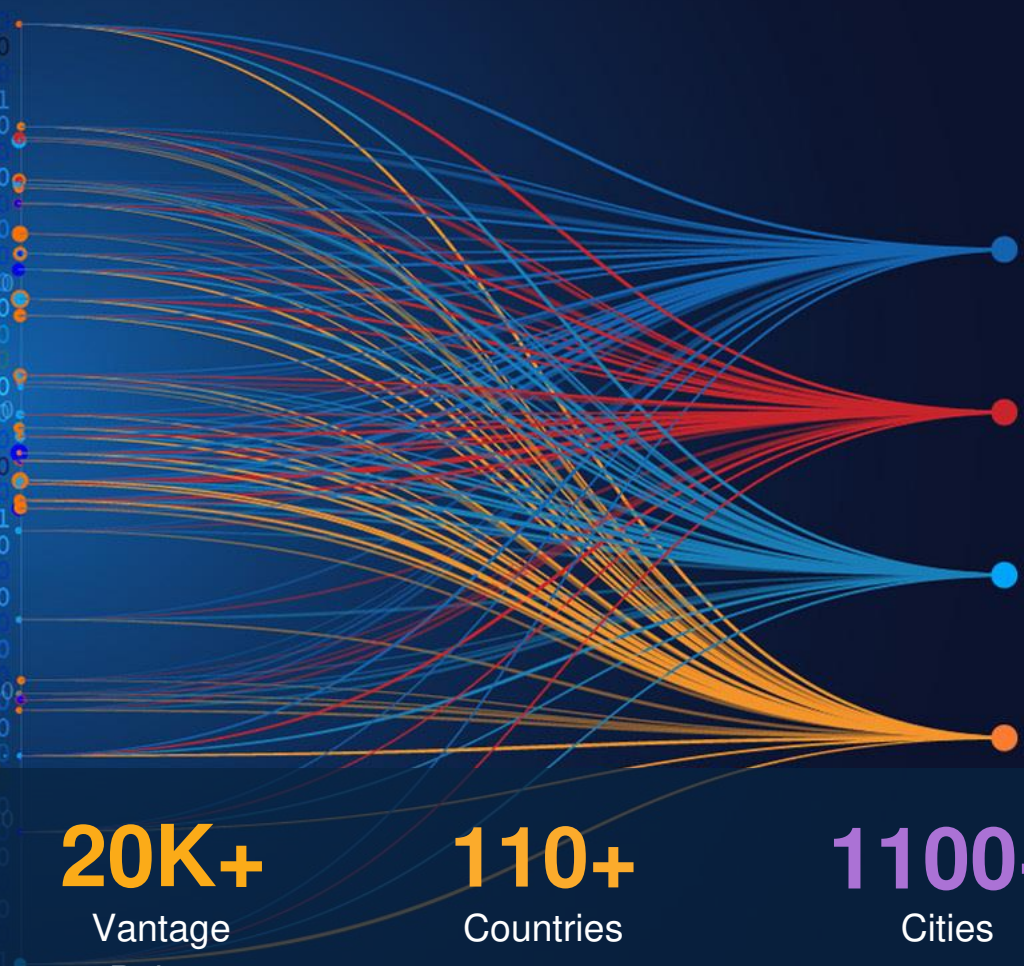
Vantage  
Points

**110+**

Countries

**1100+**

Cities



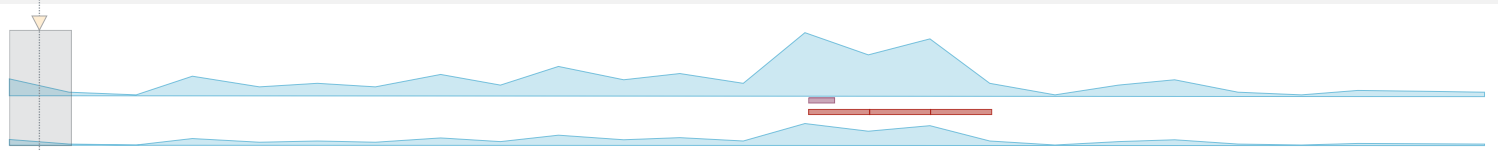


# Most Correlated Visibility In One View

Time Correlated

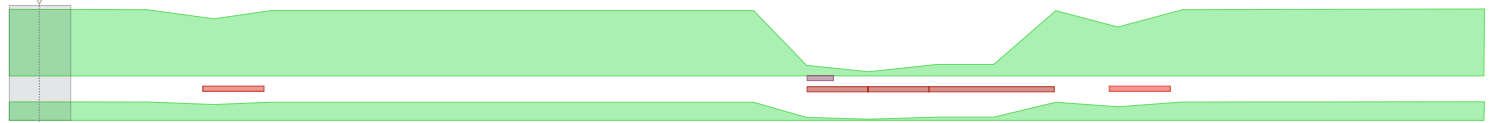
## App Experience

- Transaction scripting, page load



## HTTP/DNS/RTP Server

- HTTP Availability, response time, throughput



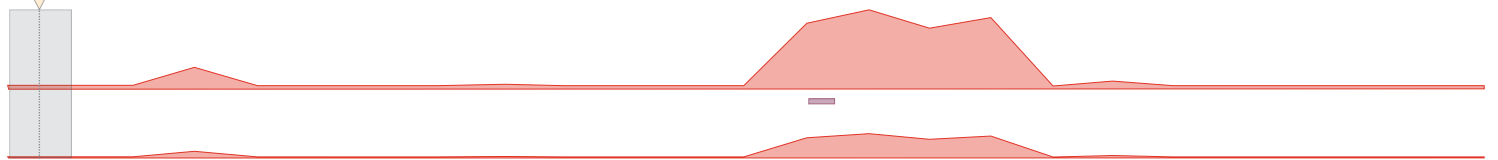
## Scope and Domain

- Geo, HTTP phase, errors



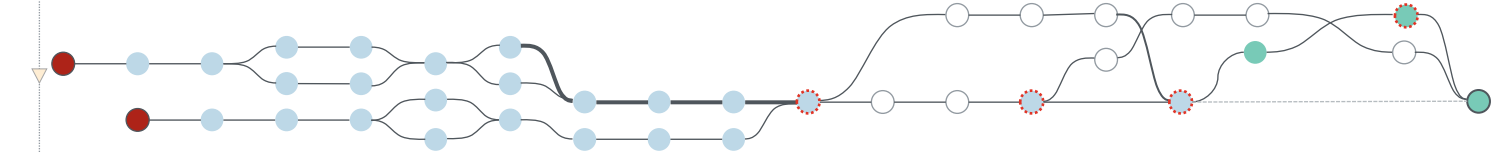
## Network Metrics

- Packet loss, latency, jitter



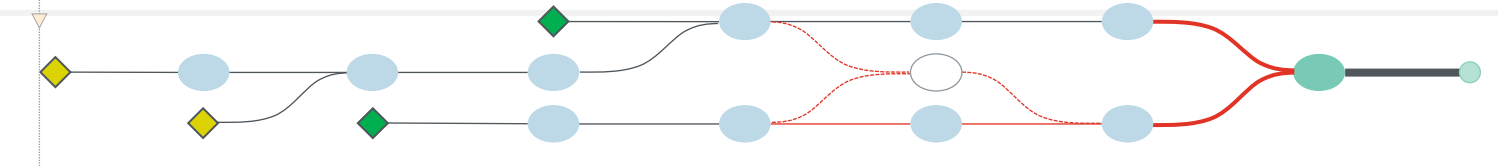
## Path Visualization

- Hop-by-hop; multi-point; bidirectional
- Metrics and data per hop
- Integrated Outage Detection



## BGP Monitoring

- Reachability, path changes, updates



# Use Cases

## Customer DX



Websites & Apps



DNS Services



CDN providers



DDoS Security



BGP Routing



ISP



## Modern WAN



SD-WAN



Cloud Security



Network Devices



Endpoints / LAN



## Employee DX



IaaS Providers



SaaS Providers



UCaaS/Collaboration



VoIP

