

The background features a vibrant, multi-colored abstract design. On the left, there are overlapping, wavy bands of color in shades of red, orange, yellow, and green. On the right, a bright white light source emits a series of colorful rays in shades of blue, green, and yellow, creating a sunburst effect.

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The bridge to possible

Thousand Eyes from a Network Engineers Perspective.

Uma Sankar Mohanty, Software Engineering Technical Leader

BRKXAR-2007

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Cisco Webex App

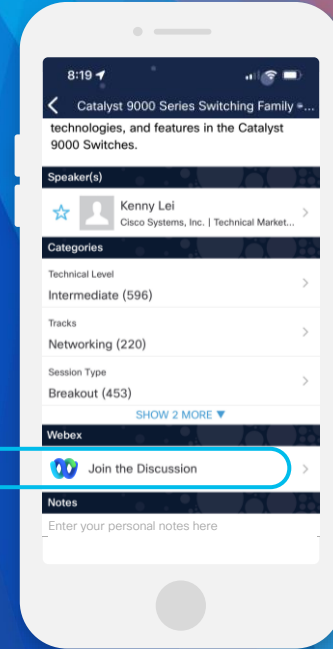
Questions?

Use Cisco Webex App to chat with the speaker after the session

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- 1 Find this session in the Cisco Live Mobile App
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Webex spaces will be moderated by the speaker until June 9, 2023.



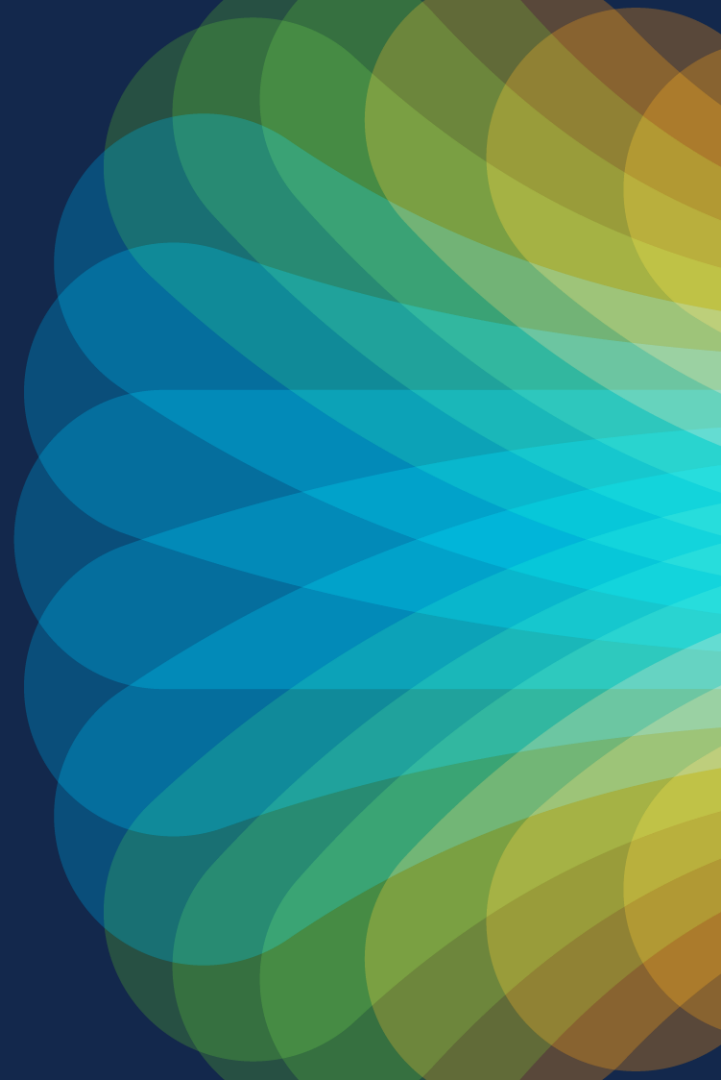
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Agenda

- The WW(What & Why) of ThousandEyes
- ThousandEyes Agents & Dashboard
- Use cases
- Key Takeaways
- Q & A
- Appendix

The WW(What & Why) of ThousandEyes



Session Objective :

This Session Focuses on :

- Brief Overview of Thousand Eyes platform.
- The Use cases cover some of the challenges faced by a Network Engineer & how Thousand Eyes could have helped in those situations.

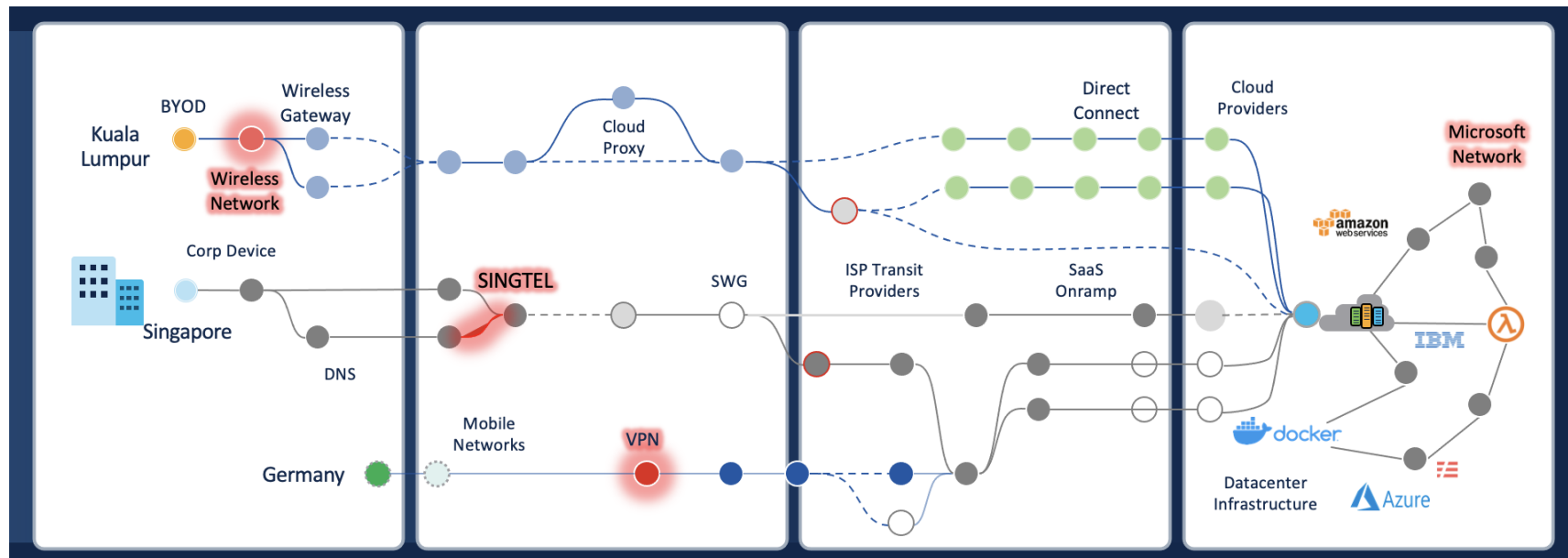
By the end, I hope everyone in this room gets a better understanding of the how we can use Thousand Eyes in our Troubleshooting approach to detect and resolve issues way faster than the traditional methods.

Session Non-Objective :

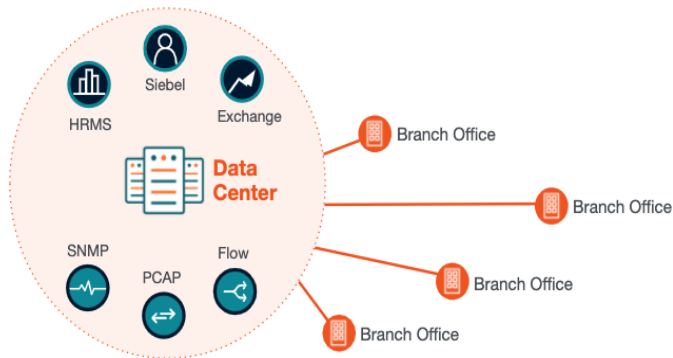
- We will not cover any ThousandEyes test configurations or deep dive on them.
- We will not focus on the Installation/Licensing of Thousand Eyes.

What Is ThousandEyes?

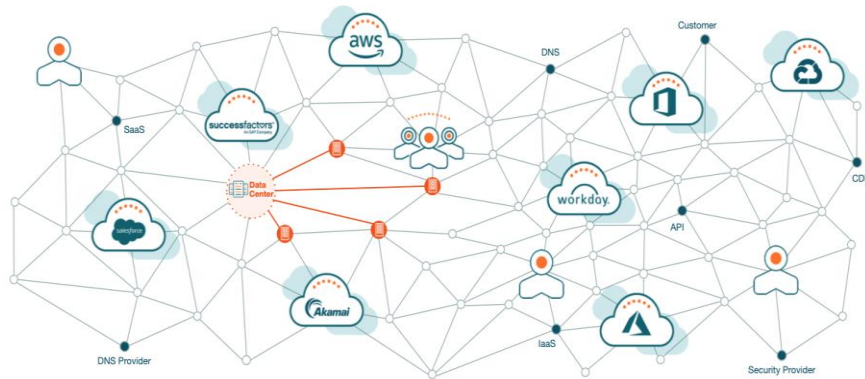
ThousandEyes allows you to visualize any network as if it was your own, quickly surface actionable insights, and collaborate and solve problems with your partners.



Why Does It Matter



THE WAY IT WAS



THE WAY IT IS

CLOUD is the new
DataCenter

INTERNET is the new
Network

SaaS is the new
App Stack

Operations Processes Change

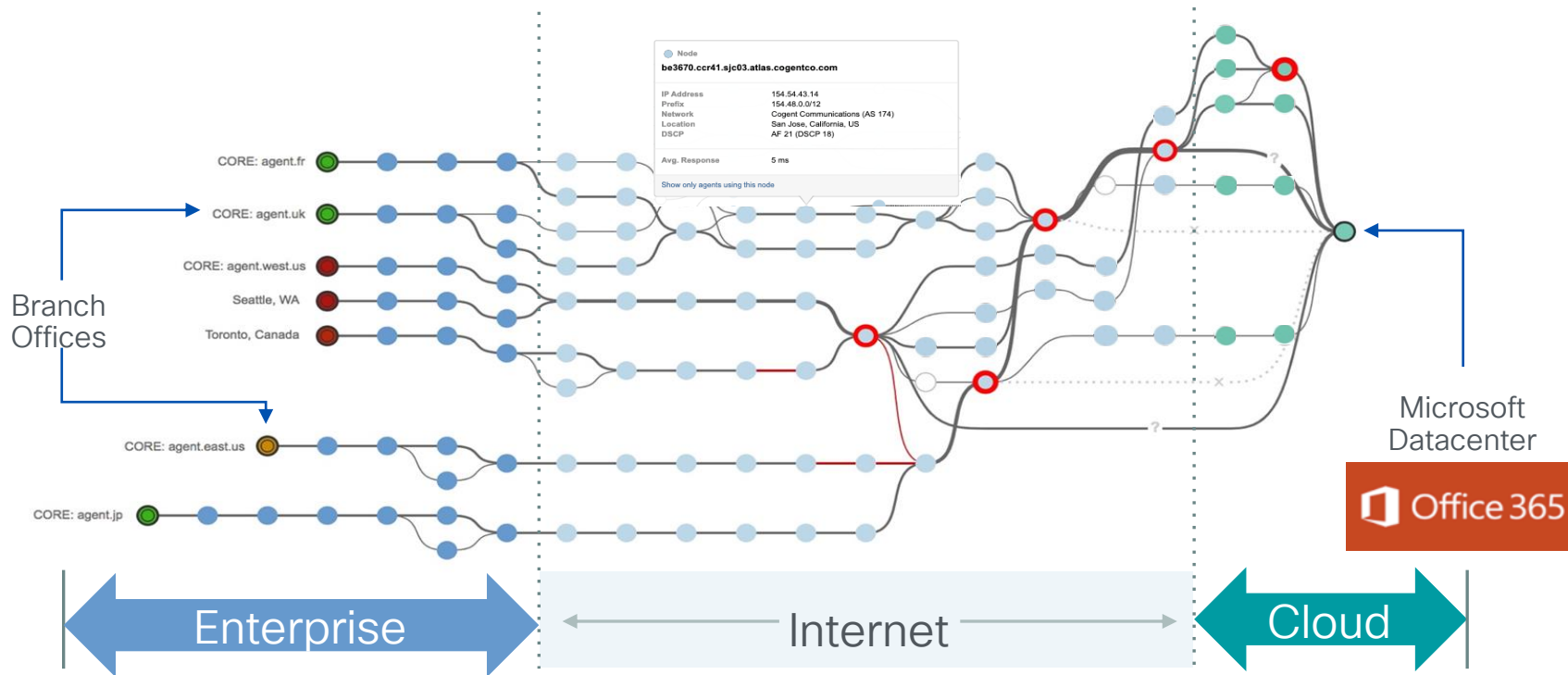
IT Assets You Control



IT Assets You Don't Control

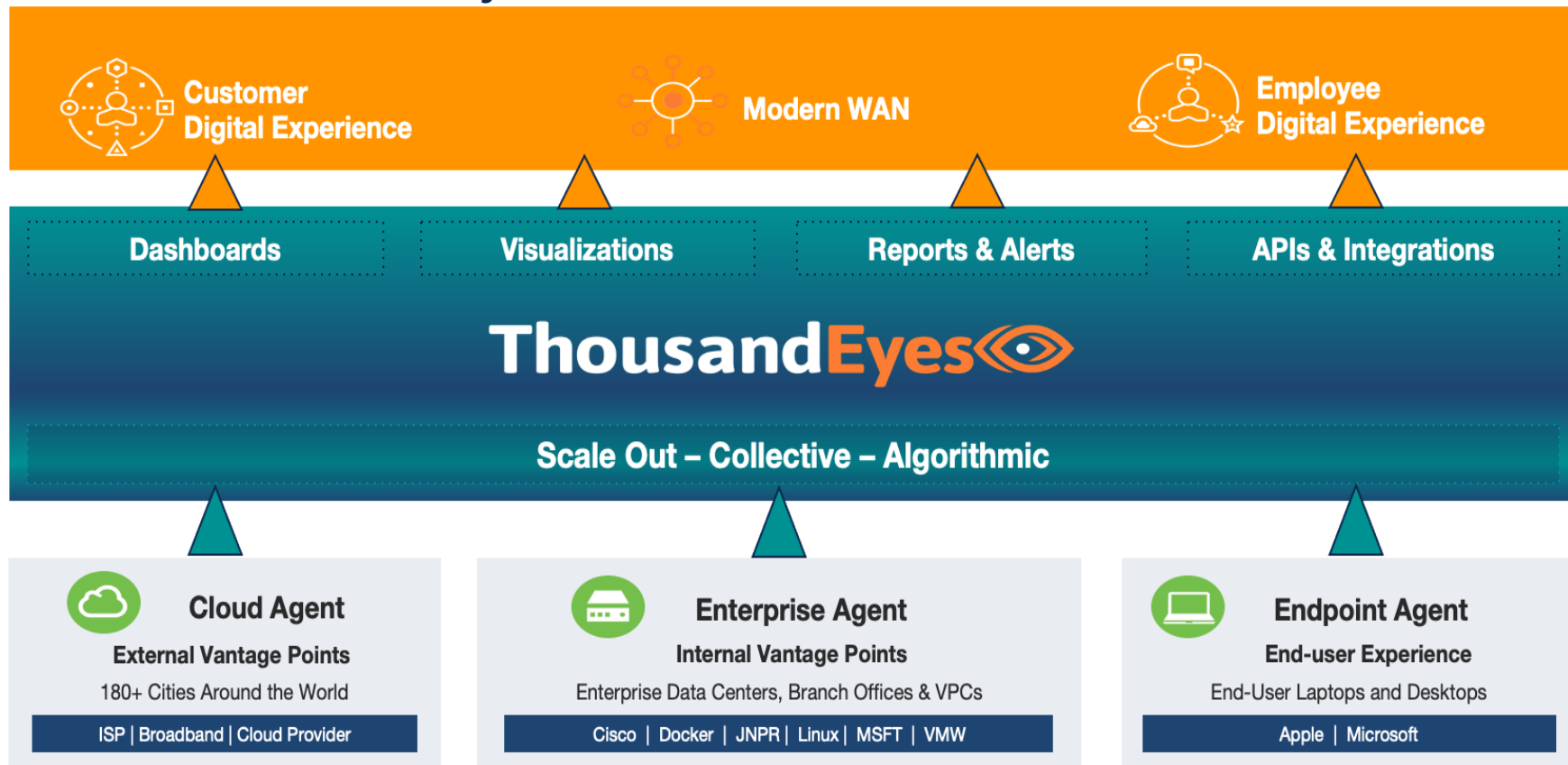


Correlated Visibility Into ALL Networks Availability, Performance and Change



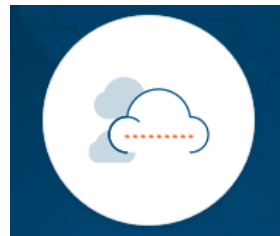
ThousandEyes Agents & Dashboard

The ThousandEyes Platform



Cloud Agent

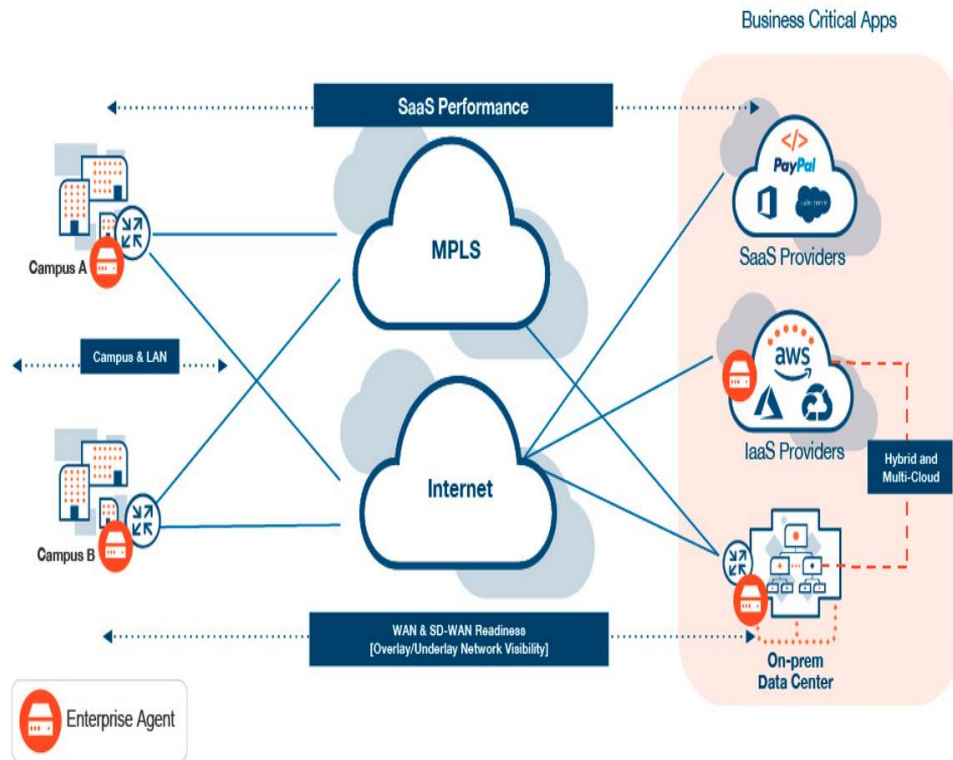
- Outside-In monitoring
- 370+ Locations
 - Tier 2 and 3 service providers, broadband, cloud
 - www.thousandeyes.com/map
- Commonly for customer/public facing applications
- The simplest way to see Global connectivity



Cloud Agents World Map

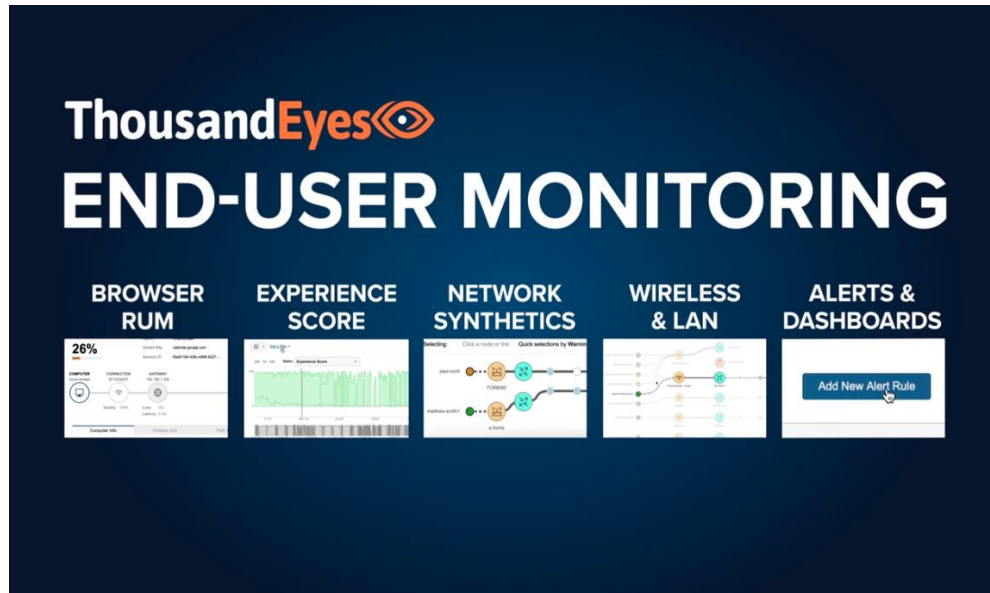
Enterprise Agent

- Inside-Out monitoring (on-prem)
- Deployment Options
 - OVA / Physical Appliance
 - vmware VirtualBox Microsoft Hyper-V
 - Linux Package/NUC/rPI
 - ubuntu® redhat. CentOS
 - Docker
 - Cisco ASR1k / ISR4k /CAT9K
- Commonly for internal applications, SaaS and Site-to-Site
- Get Visibility into all segments of your Enterprise Network.



Endpoint Agent

- Last-mile monitoring
- Extends network and service visibility in a way that is agnostic to the location of the user
- Deployment Options
 - Operating Systems
 - 🍏 Windows 7 / 8/ 8.1 / 10
 - 🍏 Mac OS X 10.9 / 10.10 / 10.11
 - Browsers
 - 🌐 Google Chrome 41+
 - 🌐 Internet Explorer 11+
- Gain Visibility from any Employee to any Application over the network



Dashboard

The Dashboard page is the starting point when we log in to the ThousandEyes Platform



Dashboard

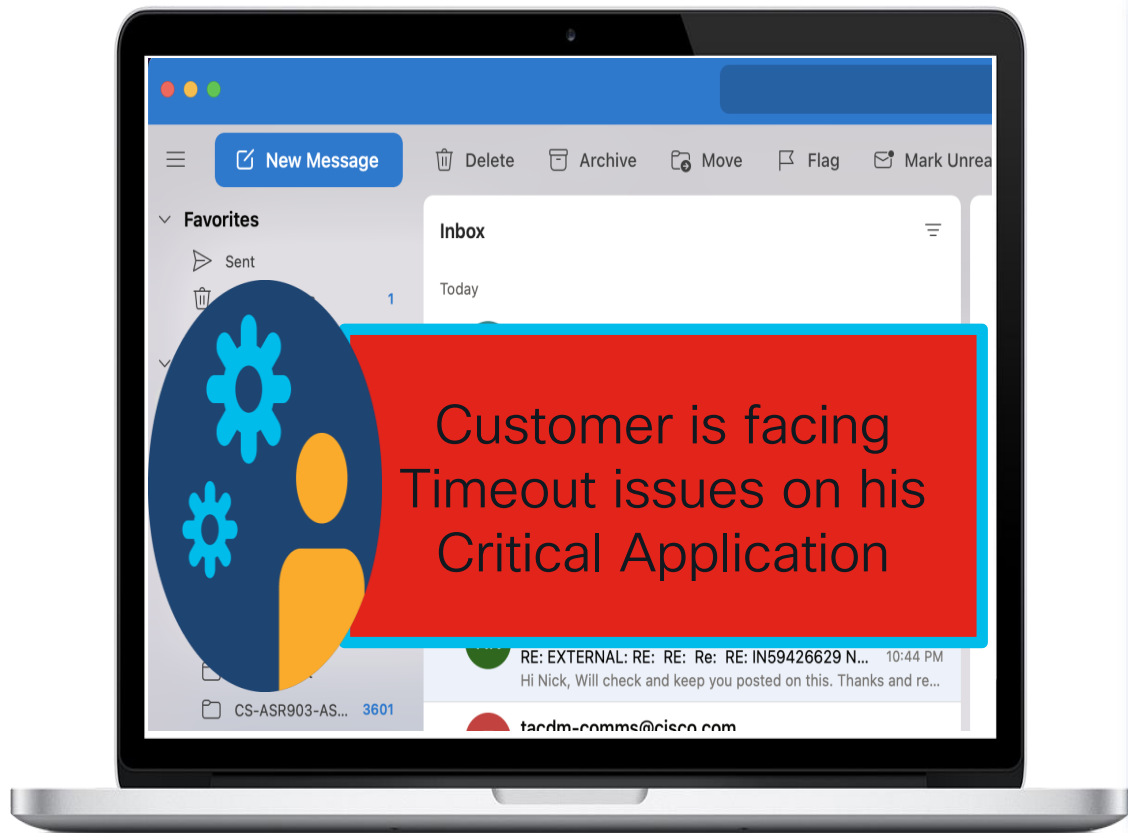
Quick and easy customizable options provided to build your own Dashboard.



Use case #1

Application Issues

“Let’s Blame the Network Engineer”



Data Gathering :

- Application url – <https://login.microsoftonline.com>
- Criticality – Severe Impact
- Users Affected – All Users
- Site Location – Cincinnati Office
- Any recent changes in the Network – No
- Any other application in same site.. – No
- Any other Site having the same issue – No
- Engage with one of the User :
 - Exact Issue – Operation timed out !!
 - Past Performance – Not Sure
 - Issue Start time – ~10:40 AM

Initial Triage :

- Edge Device on site is Healthy.
- No Drops or anomalies noticed on the device.
- Need to involve ISP
- Need to Involve Application Team(Microsoft)

Customer Sentiment :



- Customer getting Impatient
- Lot of time Elapsed but no clue on the Root Cause
- Involving ISP or Application Team will cause more delays



Mr. ISP

Initial Triage Report :

- No Drops reported on the PE devices
- No Global outages
- No path changes observed
- Issue must be beyond the ISP boundary
 - Customer network
 - Application

Customer Sentiments :

- Bad to Worse
- Loses trust in Mr. U
- Demands further escalation to Accounts/Sales
- Won't Involve Application team without further escalation

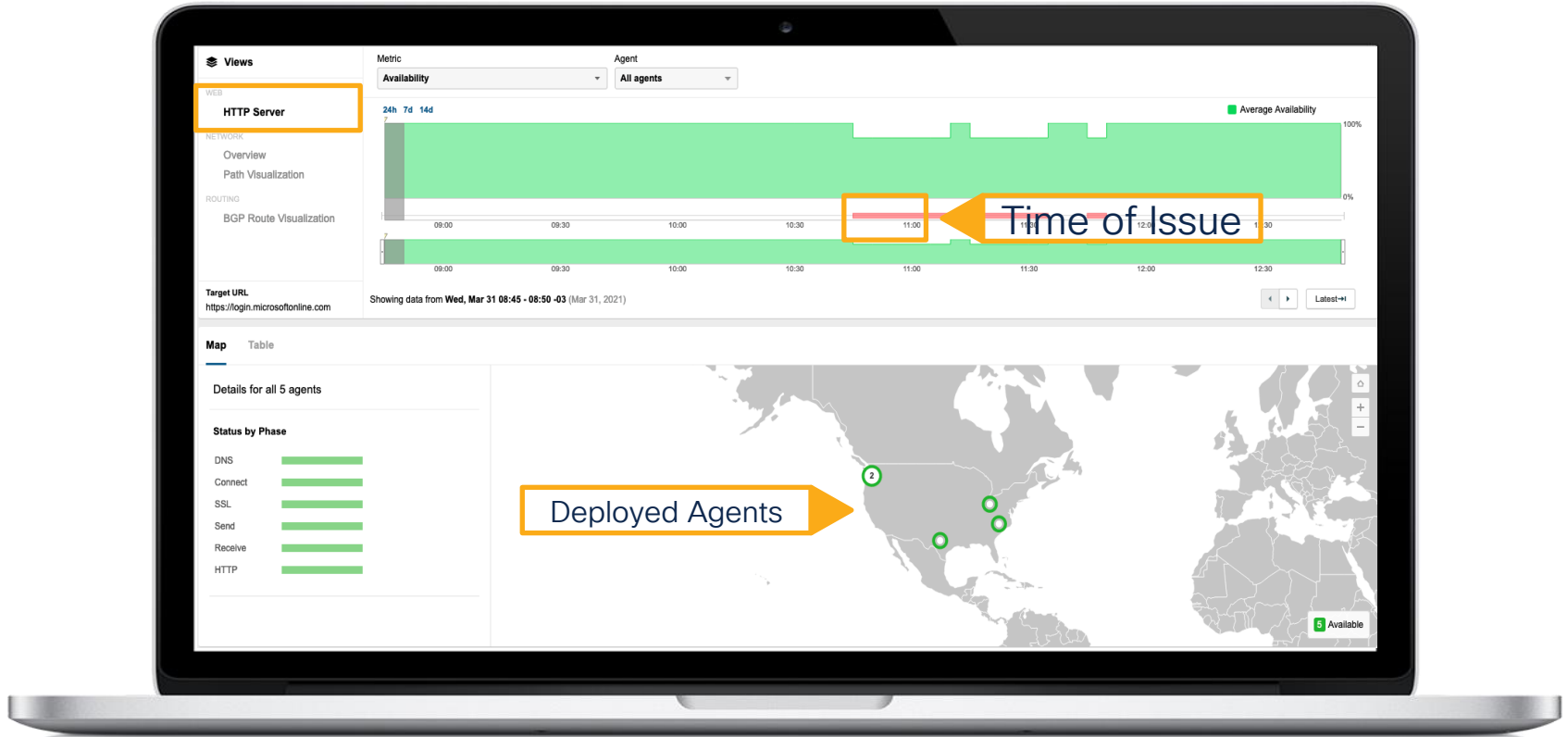
"Blame The Network Engineer"

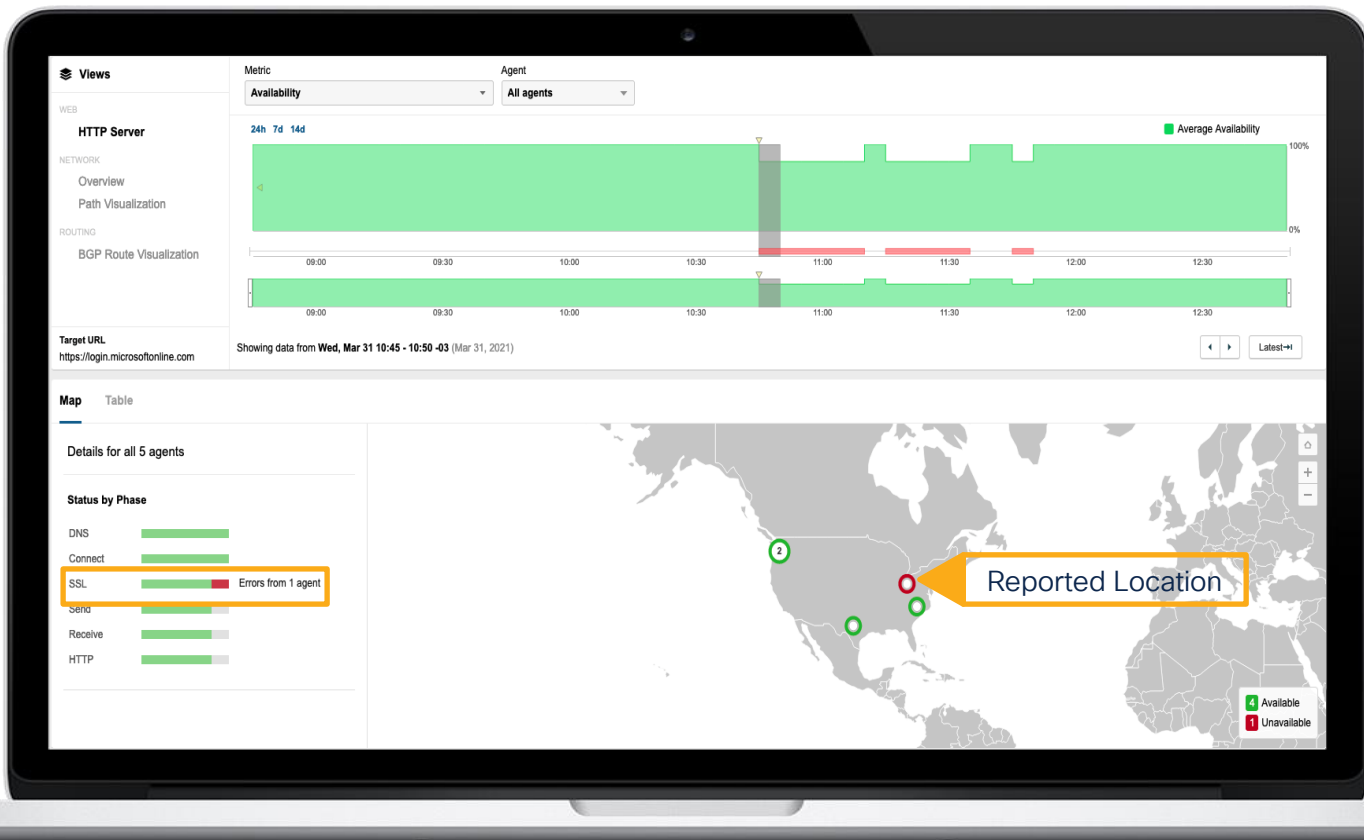


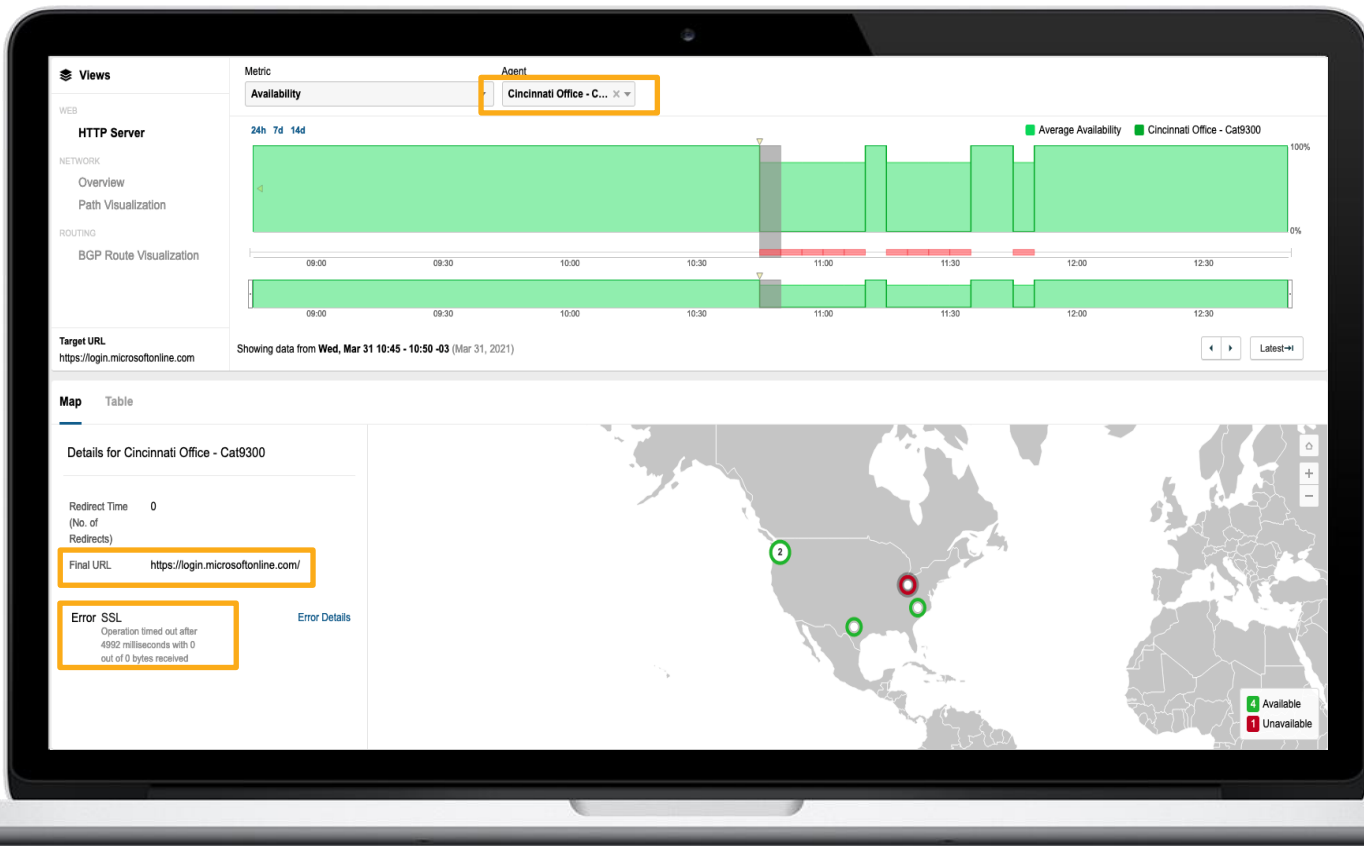
Courtesy : Google Images

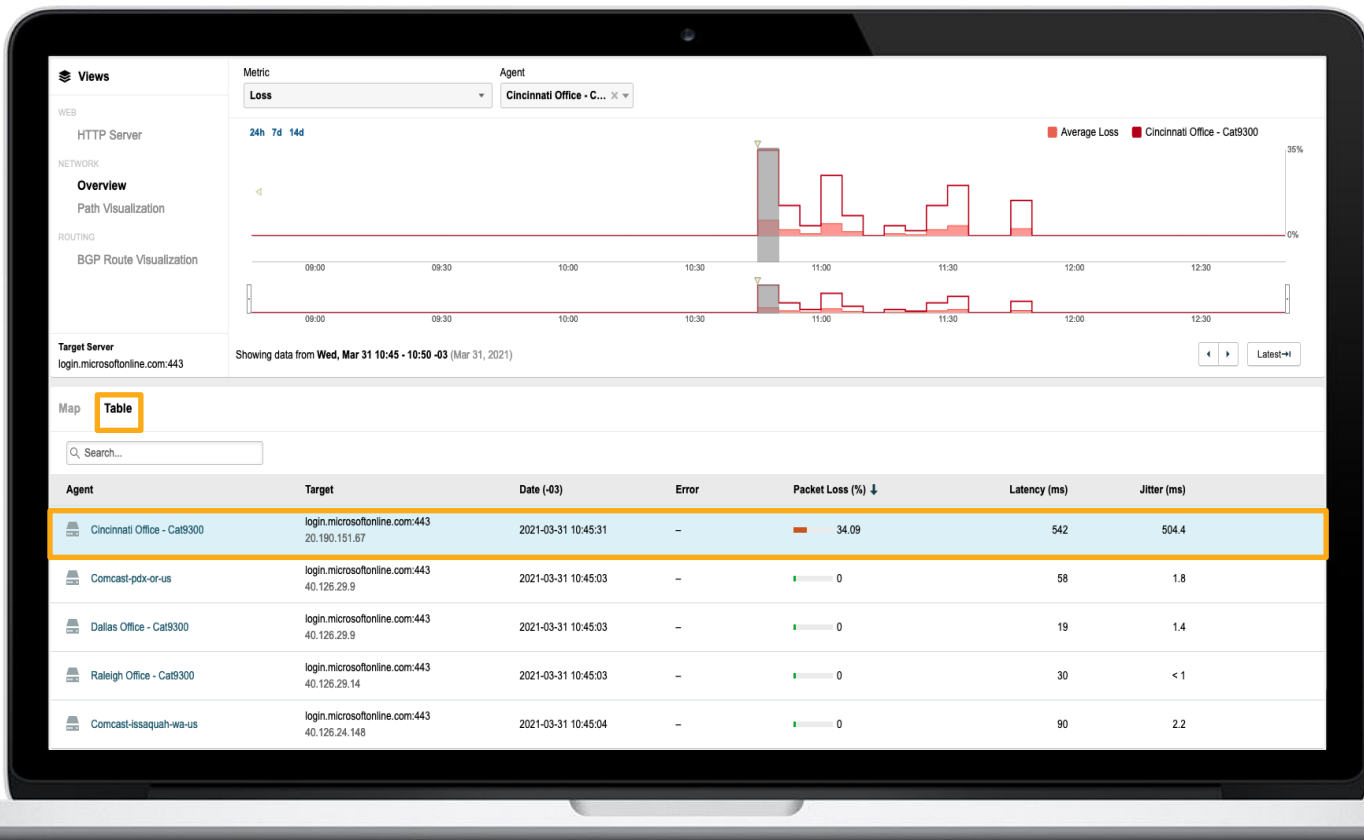


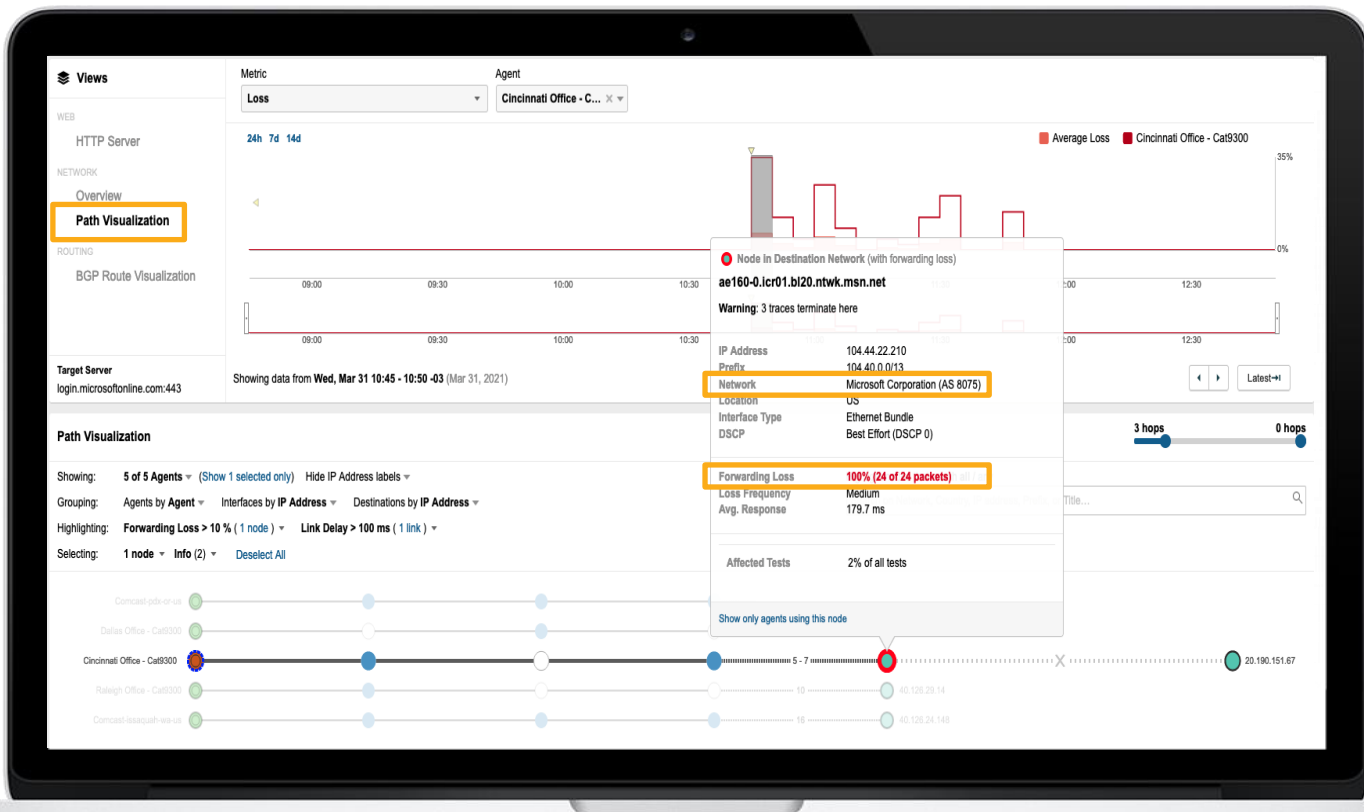
ThousandEyes Changes the Game !!!











Use Case #2

Asymmetric Routing

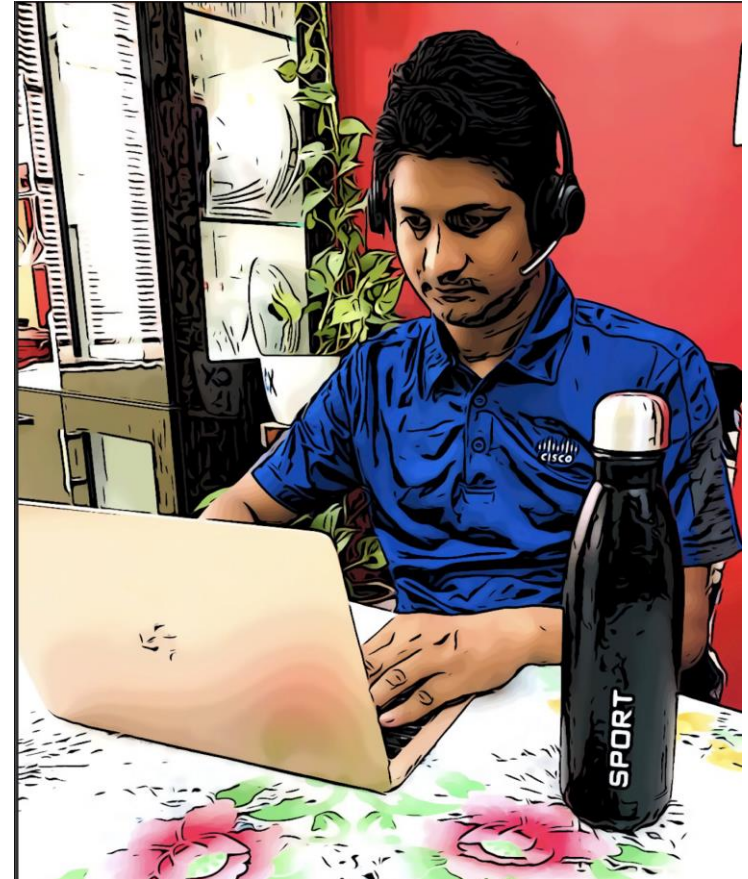
“Can we be a little Proactive !!”



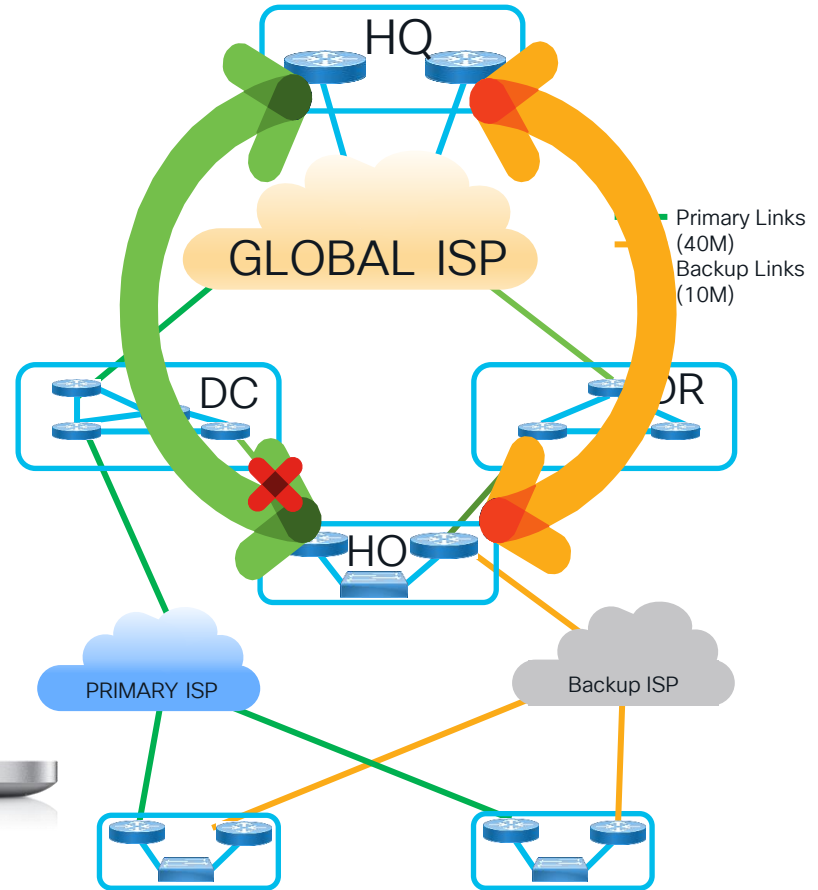
Mr. U – Working on a weekend

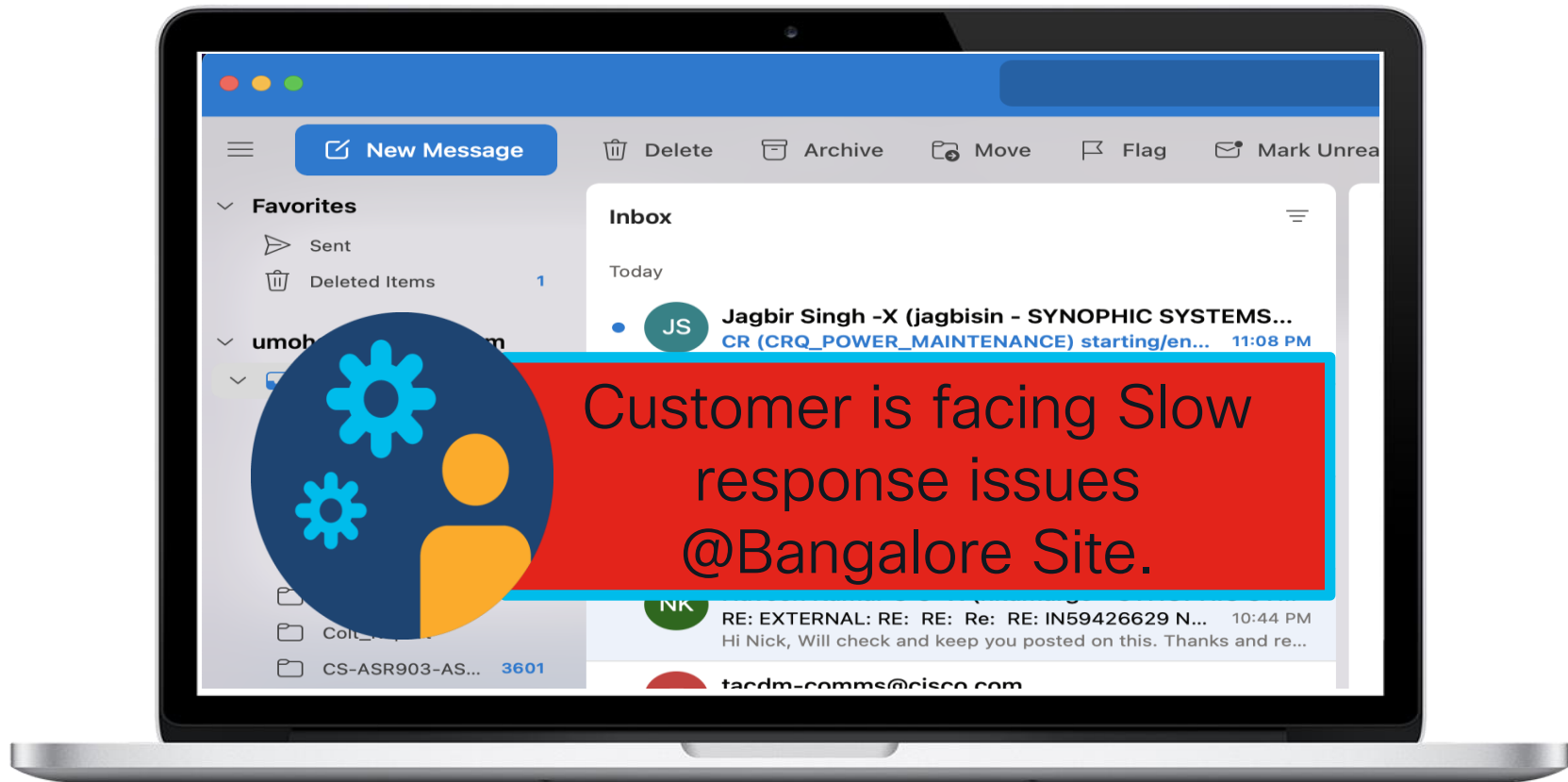
Proactive alert – EIGRP Down
between DC & Head Office site
(Bangalore)

Root Cause – ISP link is down.

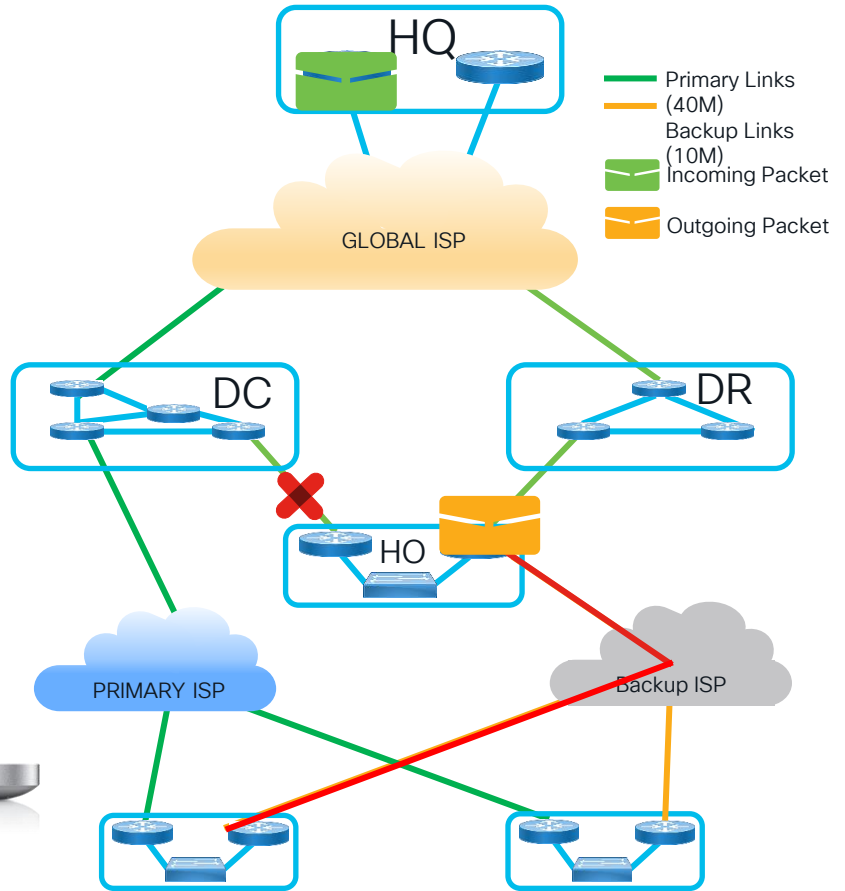


- HO Site reachable.
- Branch sites reachable.
- Situational Awareness sent to customer.





- Initial Triage :
 - Back up ISP link showing Drops
- Root Cause : Asymmetric routing
 - Missing Distribute list on HO Site
- Urgent Change Request raised to fix.





Courtesy : Google Images



Time spent since the Proactive alert was seen



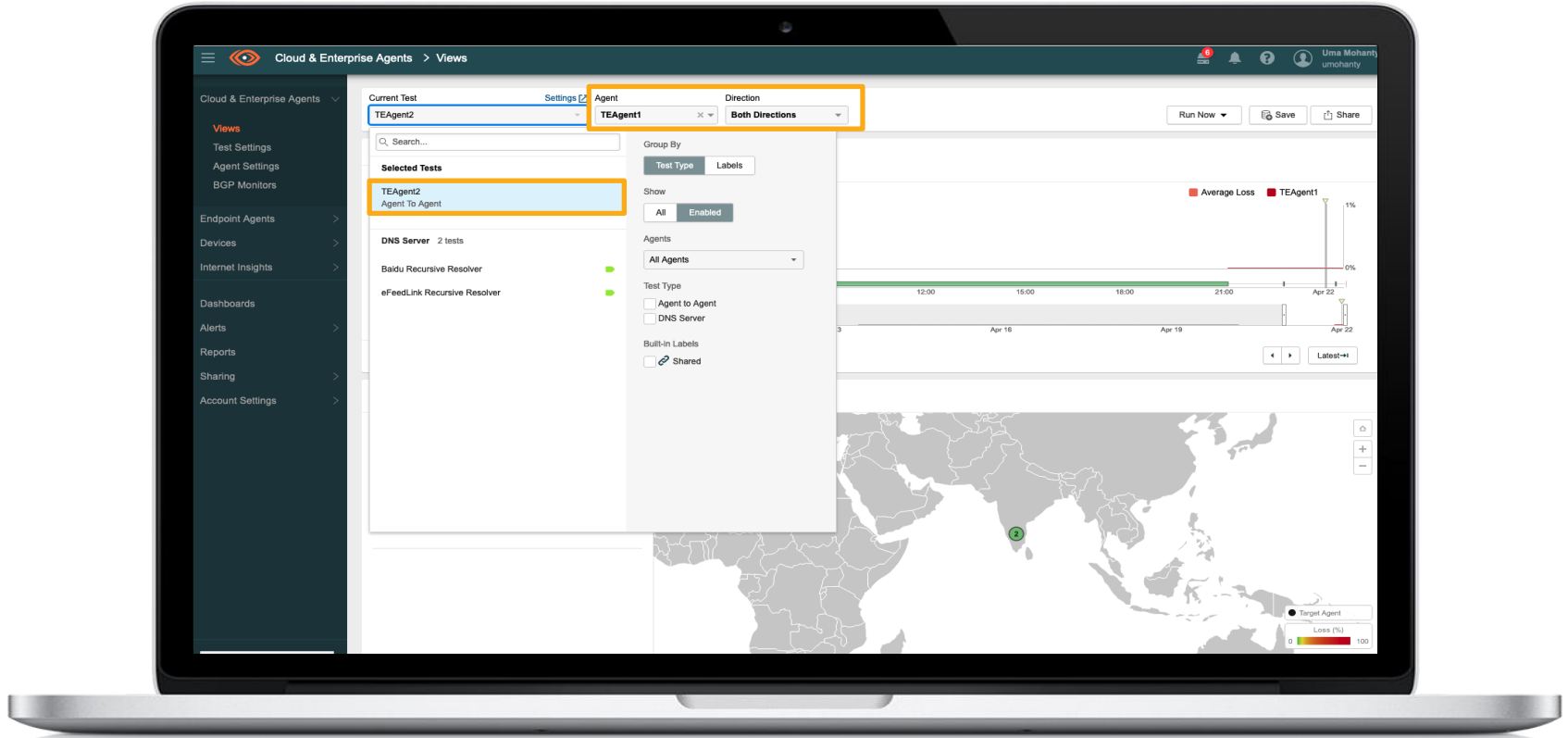
Customer losing revenue

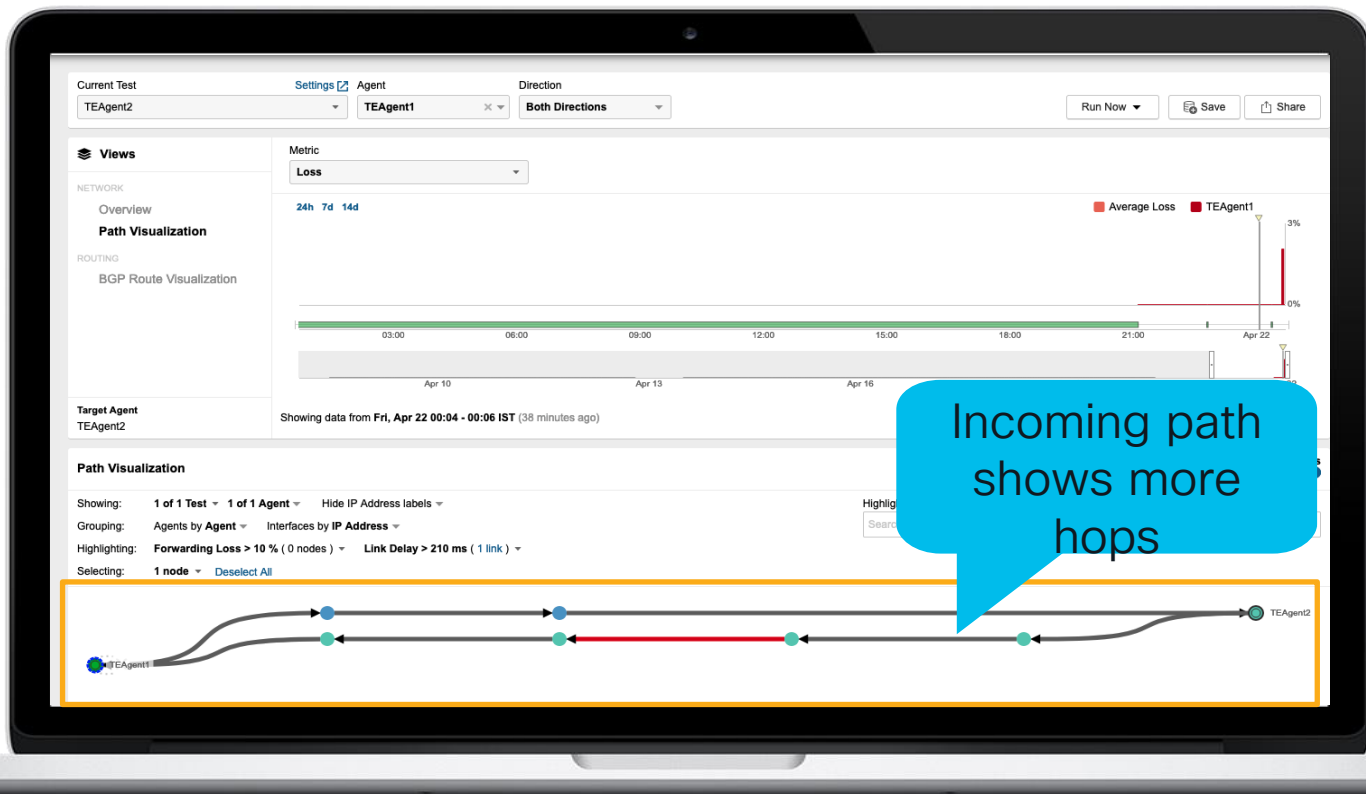


Waiting for Issue to Occur

"Can we be a little Proactive"

ThousandEyes Changes the Game !!!







Use Case #3

Chronic Carrier Issues
“Escalate With Proof”

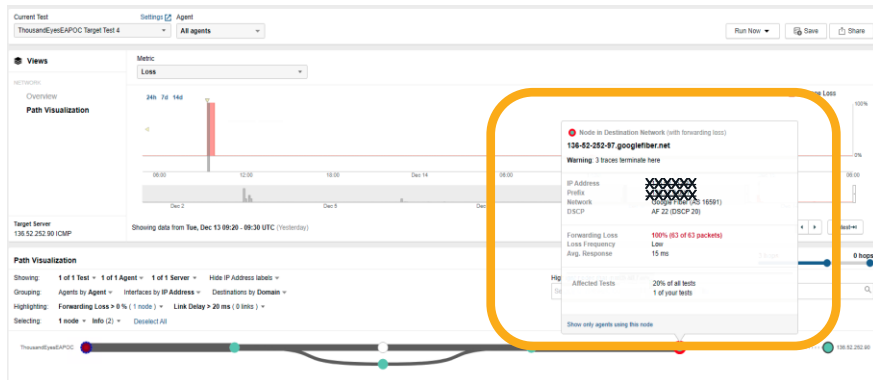
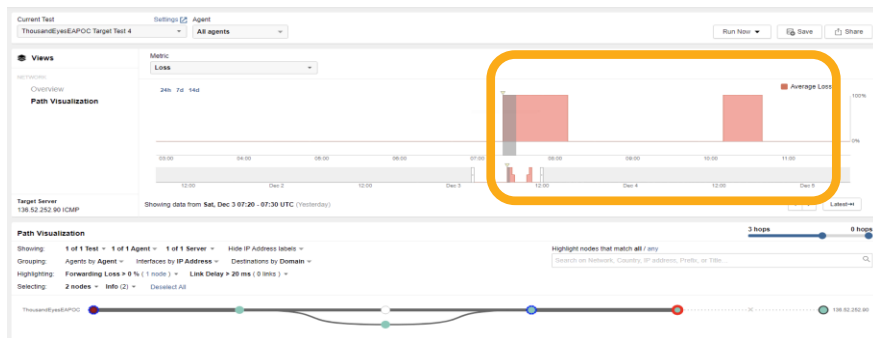
Chronic Issues :



Courtesy : Google Images

- Frequent Packet loss issues seen
- Short lived outage of 10-20 mins Intermittently.
- No Record of Past performance of the link.
- Only proof was Protocol flaps seen on the device logs.
- No concrete evidence if it was ISP or edge device related issue.

Escalation to Carrier:



- Gather data & Escalate to proper Stakeholders.
- Test shows the exact time when the issue occurred.
- Convincing ISP was easier with proof.

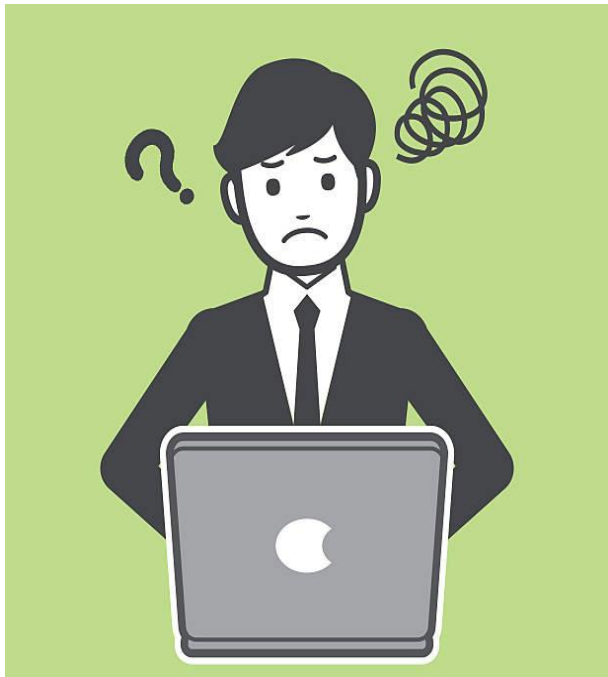
Permanent Fix

- ISP changed the path in their NLD(National Long Distance) network.
- More stabler circuit and Happy Customer 😊

Use case #4

Major Outage
“Correlation becomes easy”

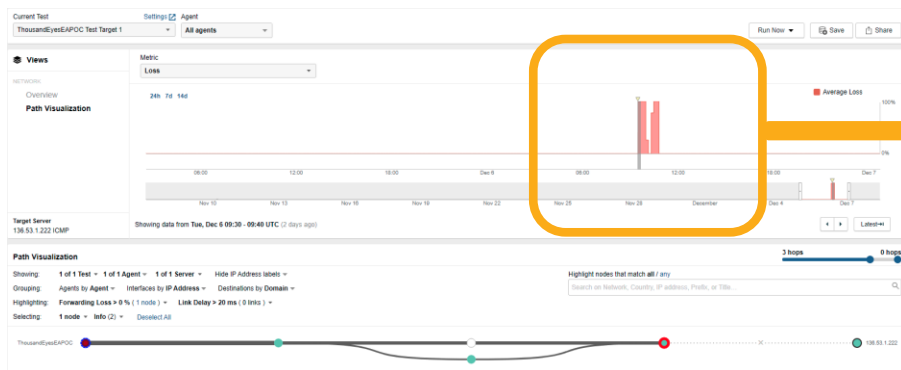
Major Outage within ISP :



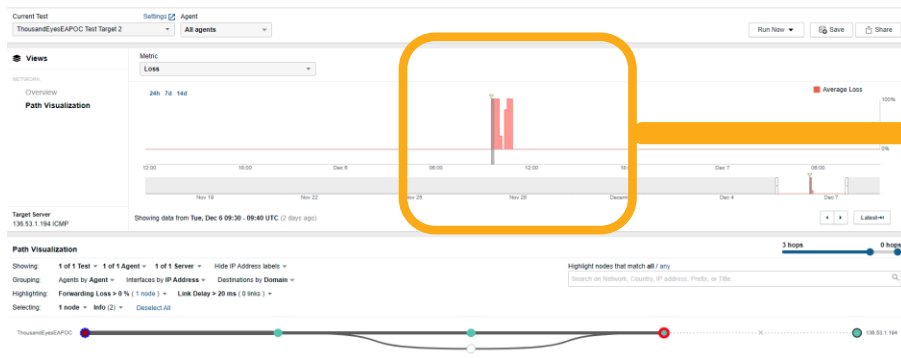
Courtesy : Google Images

- Worst Nightmare for Network Engineers.
- So many alerts and so less time !!
- How do I correlate ?
- Issues at site or ISP related ?

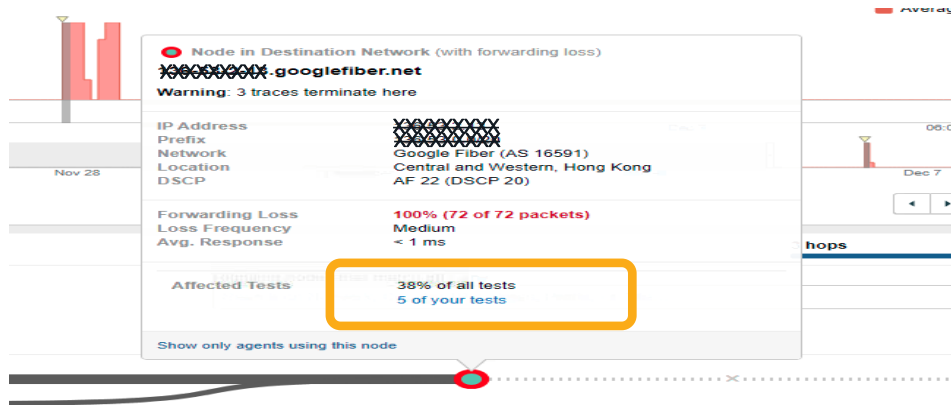
Correlation made Easy :



Target Test 1 showing 100% packet loss @0930 UTC



Target Test 2 showing 100% packet loss @0930 UTC



- Single click shows the number of Tests affected.
- Automatic Correlation.
- Easy to narrow down the issue towards ISP from.

Quick Action & RCA

- Issue reported to ISP & Escalated.
- RCA : The link aggregation (LAG) connectivity between provider edge Router and Metro aggregation device was flapping.
- Traffic re-routed through alternate LAG

Affected Tests using XXXXXXXXXX

Test Name	Test Type	Account Group
HY2 - BG7 - Sify -ICMP- XXXXXXXXXX	Agent to Server	Net-Int-Dev
HY2-BG7-Sify-XXXXXXX	Agent to Server	Net-Int-Dev
ThousandEyesEAPOC Test Target 2	Agent to Server	Net-Int-Dev
HY2-K1-Sify-XXXXXXX	Agent to Server	Net-Int-Dev
HY2 - K1 - Sify -ICMP-XXXXXXX	Agent to Server	Net-Int-Dev



Courtesy : Google Images



Rapid Detection, Isolation & Response



Giving Customer the Global view



Even a small glitch on network is accounted.



Hit the Bullseye !!

Key Takeaways

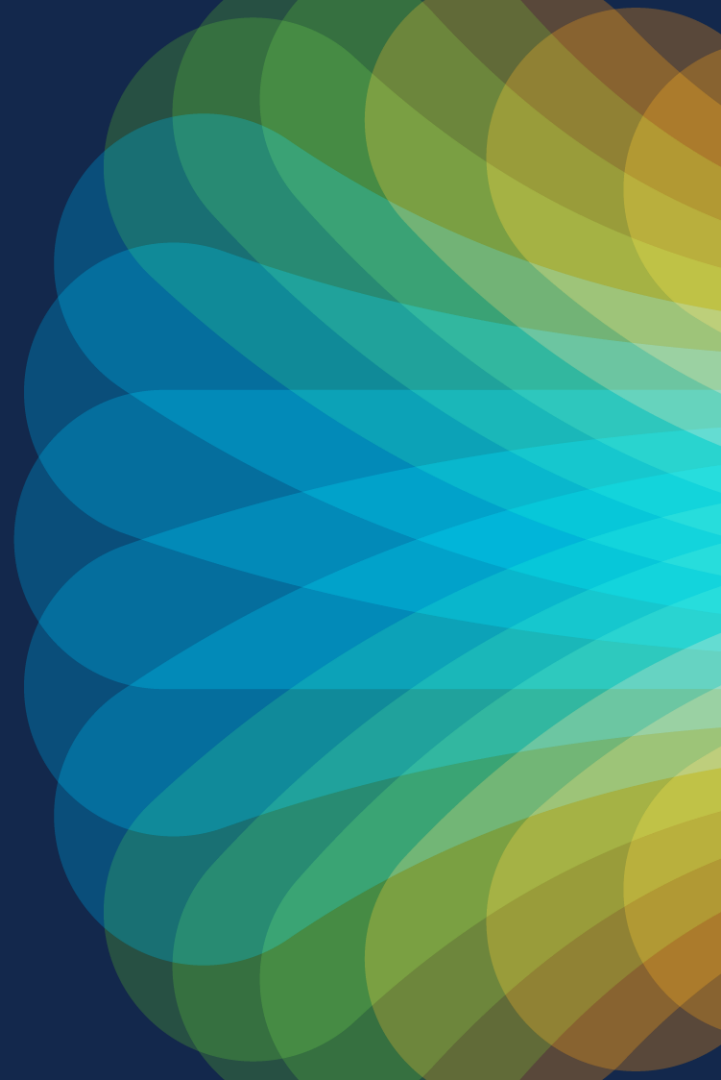


Key Takeaways

- What is ThousandEyes ?
 - ThousandEyes allows you to visualize any network as if it was your own, helps to build an approach and solve network issues with ease.
- Why ThousandEyes ?
 - Correlated Visibility Into ALL Networks, Availability, Performance and Change.
- ThousandEyes Platform :
 - Cloud Agent
 - Enterprise Agent
 - End-Point Agent
- Dashboard :
 - Customizable Widgets to build your own dashboard.
- Use Cases :
 - Let's Blame the Network Engineer
 - Can we be a little Proactive
 - Escalate with Proof
 - Correlation becomes Easy



Q & A



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These points help you get on the leaderboard and increase your chances of winning daily and grand prizes

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- Book your one-on-one Meet the Engineer meeting
- Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs
- Visit the On-Demand Library for more sessions at www.CiscoLive.com/on-demand



The bridge to possible

Thank you

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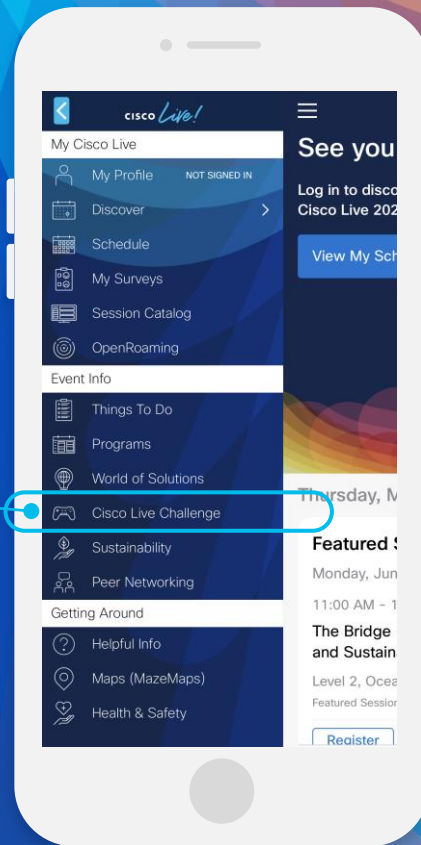
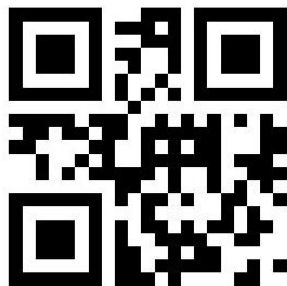
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- 3 Click on View Your Badges at the top.
- 4 Click the + at the bottom of the screen and scan the QR code:



The background is a vibrant, abstract graphic. It features a series of overlapping, wavy bands of color in a rainbow spectrum, transitioning from red and orange on the left to yellow and green on the right. On the right side, there is a bright, multi-colored sunburst or starburst effect that radiates outwards, creating a sense of energy and movement. The overall composition is dynamic and celebratory.

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