

Peering into the Network

How ThousandEyes Keeps you Running

Mark Kasper – ThousandEyes Solutions Engineer



Agenda

1. What is the ThousandEyes Assurance Platform?
2. Core Capabilities
3. Understanding the Data
4. Enhanced Capabilities

What is Digital Experience Assurance?

An enterprise IT management discipline that empowers organizations with cross-domain insights, driving proactive and automated operations across every connected element that impacts user experience.

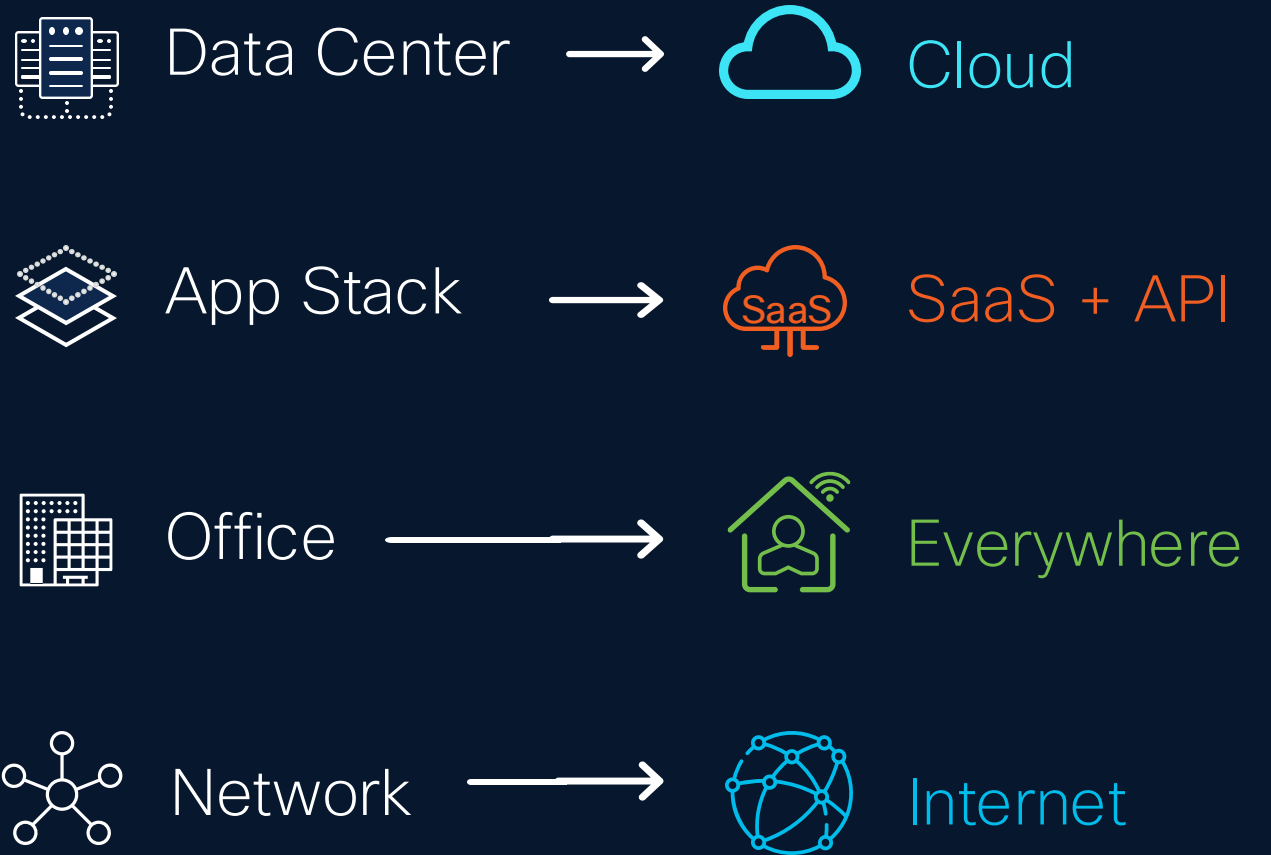


Digital Experience Assurance: Critical capabilities



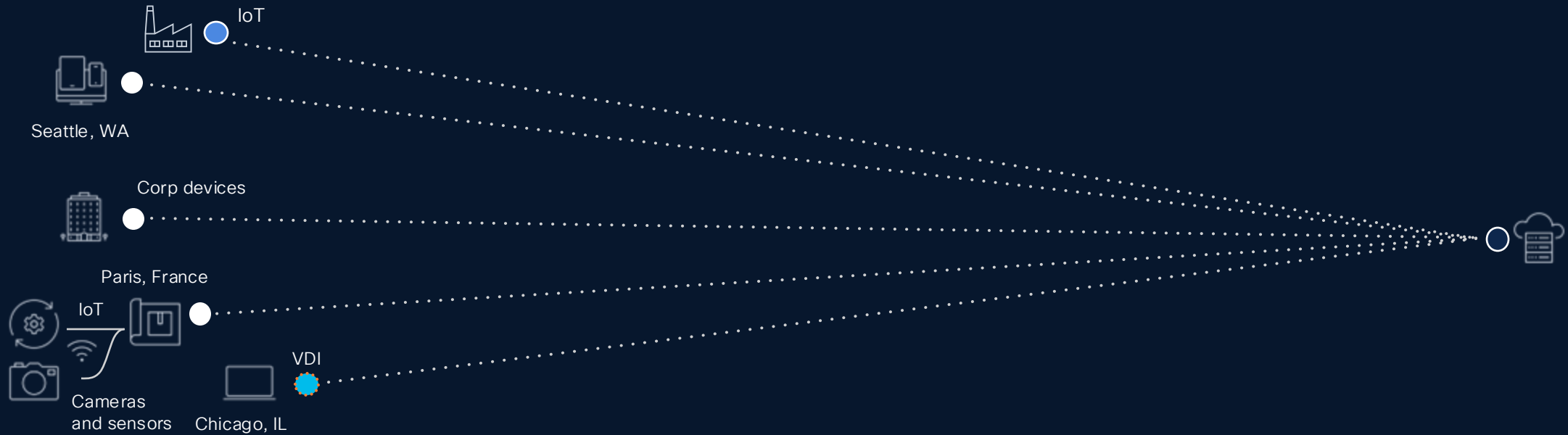
Visibility and control is **shifting**

External dependencies are **growing exponentially**

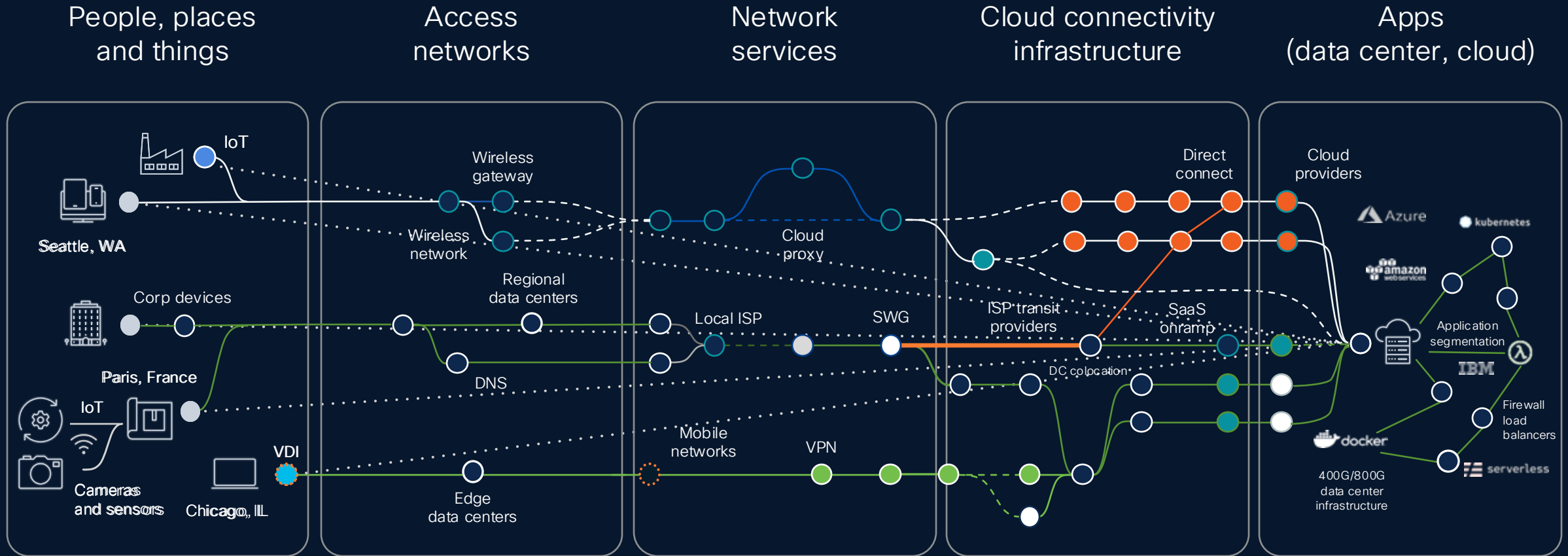


The Challenge

The Experience **You Want**

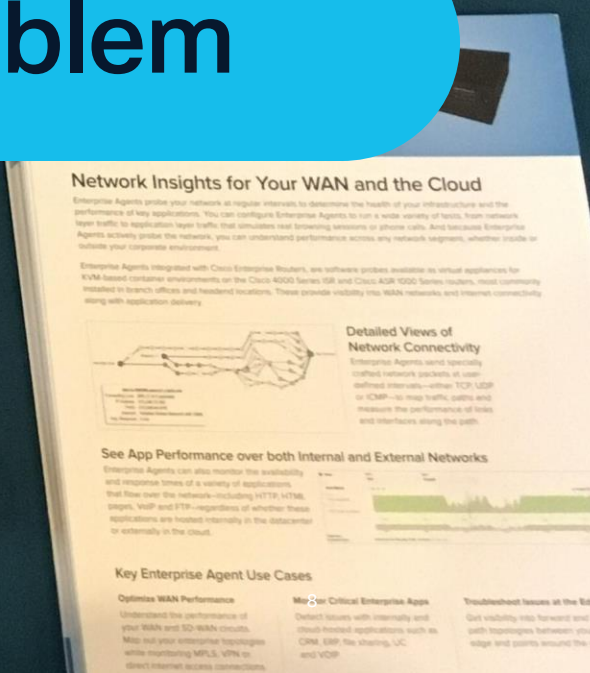
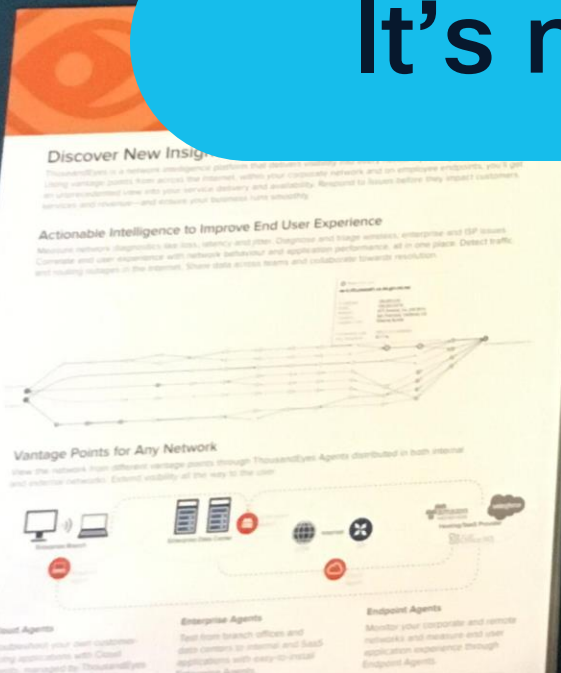


But the **Reality** Is...

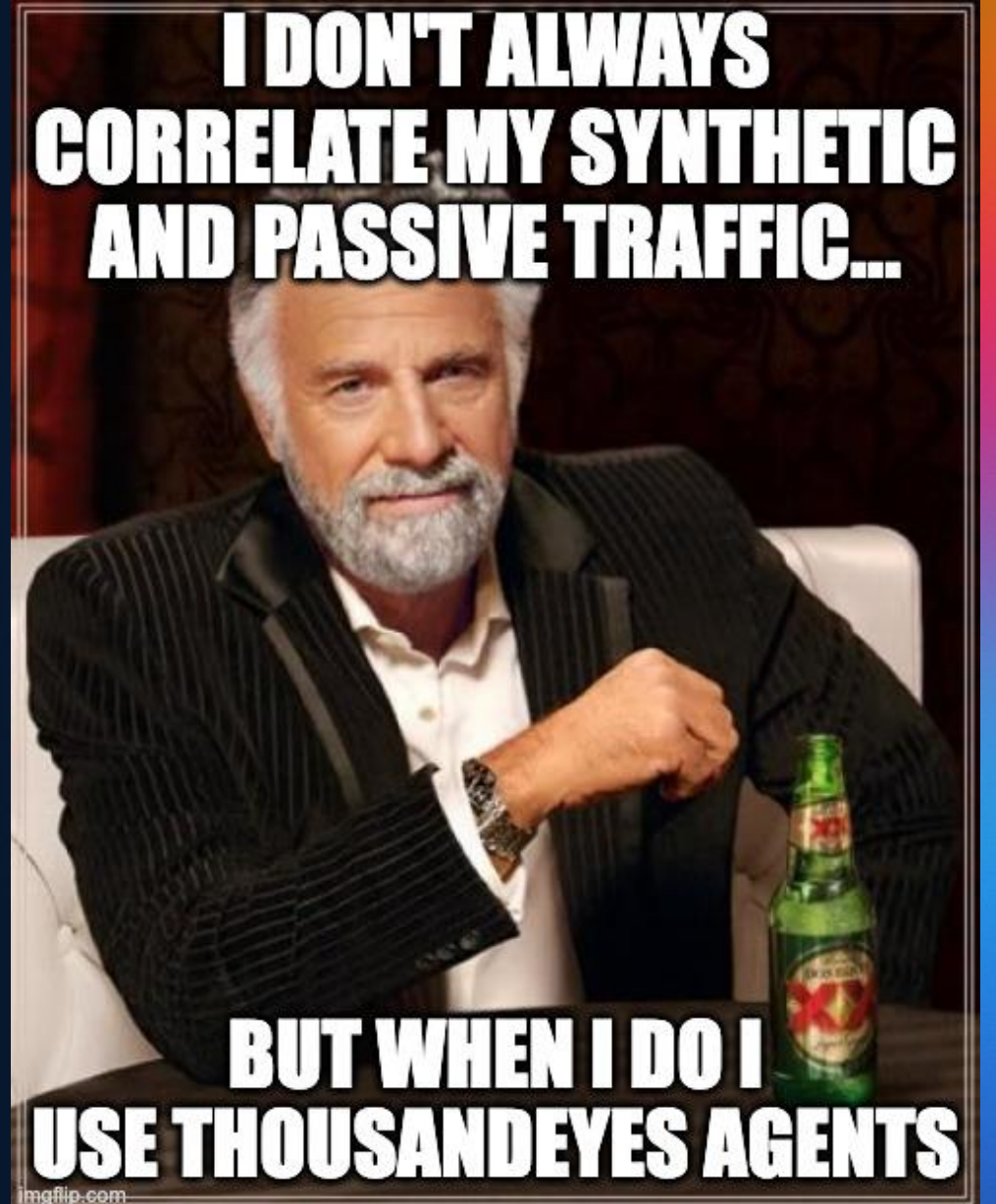




It's not your fault, but it is your problem



So how do we fix this?



How ThousandEyes Collects Data



Enterprise Agent

Lightweight agent deployed to customer sites and data center locations.



Cloud Agent

No installation required. > 400 POPs. Tier 1, 2 and 3 ISPs, broadband service providers and Cloud DCs.



Endpoint Agent

Pushed to end user laptop or desktop for last mile visibility.

Flexible Deployment Options

- OVA / Virtual Machine
- Linux Server
- Intel NUC / rPi
- Cisco Routing and Switching
- Docker
- AWS / Azure / GCP



End User Visibility

- Real user (browser) telemetry
- Automated session testing
- 24/7 scheduled testing



Cloud Agents

"Outside-in Visibility"

- Quickly gain visibility to internet facing applications, services and APIs
- Global points-of-presence everywhere our customers need visibility
 - 1,000+ Vantage Points
 - 270+ Cities
 - 69 Countries
- Presence in all major Cloud Providers: AWS, Azure, Google, Alibaba, Oracle



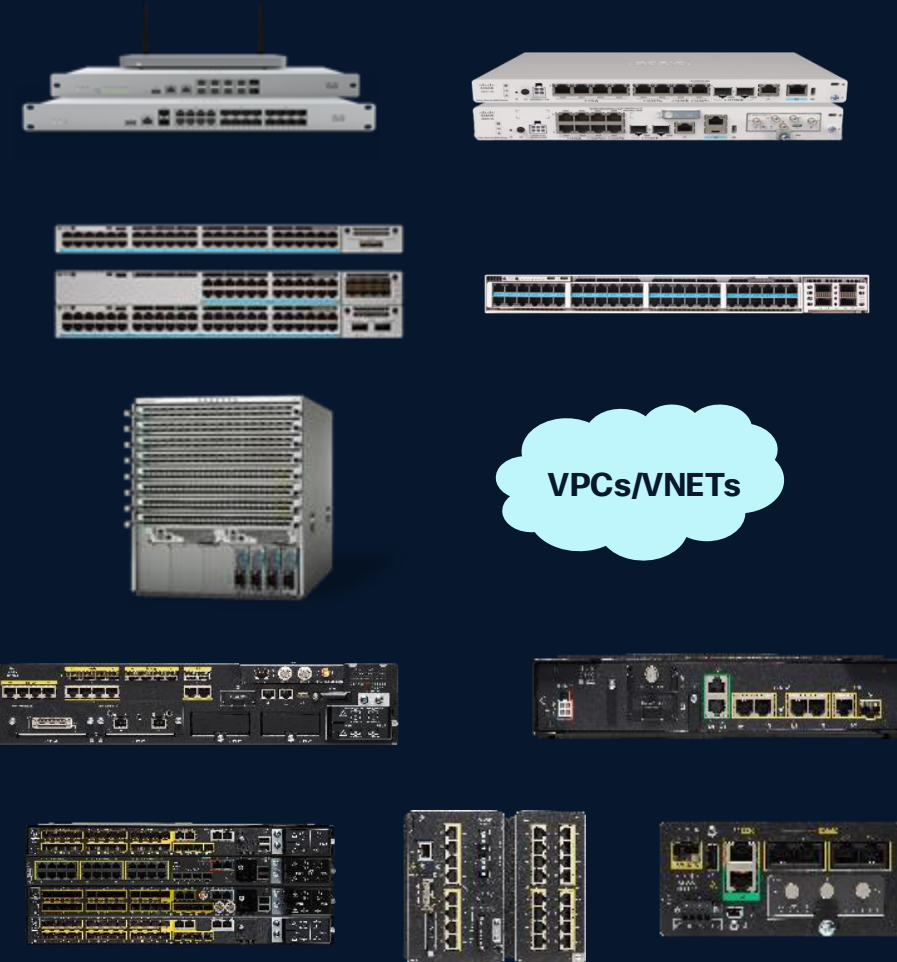
<https://www.thousandeyes.com/product/cloud-agents>



Enterprise Agents

"Inside-out Visibility"

- Same technology as Cloud Agents (lightweight LINUX based agents)
- Strategically deployed at key points within **networks customers own and control**: campus, branch, data centers, and virtual environments like private clouds (VPCs, VNets, etc)
- Integrated across the Cisco networking portfolio to allow customers to quickly and easily gain visibility
- Available in many other form factors as needed



Endpoint Agents

"Inside-out Visibility"

- Monitor end-user experience from employee laptops/desktops/Android and Cisco devices
- Extends visibility into the last mile from wherever users choose to work
- In-depth visibility into performance of the application, local connectivity, end-to-end network path and device
- Embedded in Cisco Webex devices, IP phones and new Wi-Fi 7 Access Points



Test Types

Enterprise and Cloud Agents

Network Layer Tests:

- Agent-to-Server Test (using ICMP or TCP): Measures network performance and path between an agent and a target device.
- Agent-to-Agent Test (using TCP or UDP): Measures network performance between two ThousandEyes agents, useful for bi-directional throughput and connectivity between sites.

BGP Tests:

- BGP Route Visualization: Provides visibility into BGP path changes within a network.
- Private BGP Monitors: For internal BGP data collection.
- Use cases include monitoring prefix reachability, detecting route leaks or hijacking, and validating DDoS mitigation.

DNS Layer Tests:

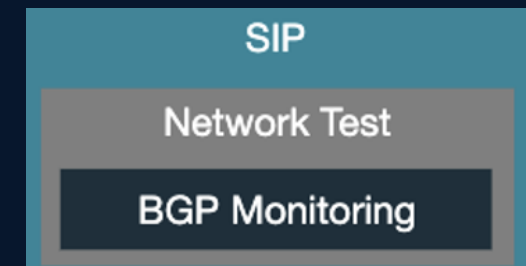
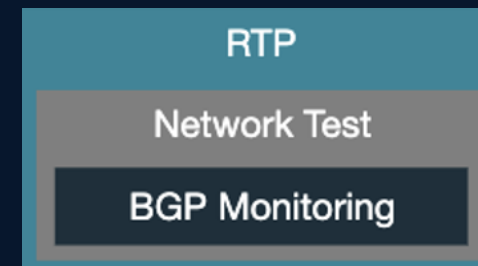
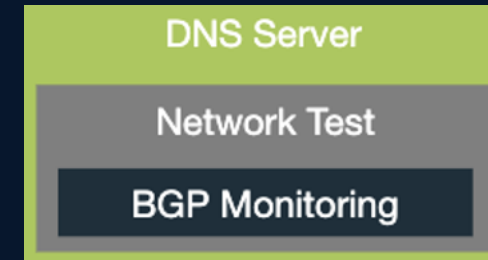
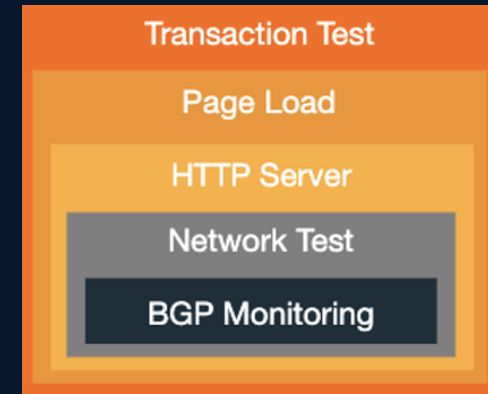
- DNS Server Test: Validates DNS records and measures DNS server performance.
- DNS Trace Test: Validates DNS delegation from parent to child zones.
- DNSSEC Test: Verifies DNSSEC digital signatures for authenticity.

Web Layer Tests:

- HTTP Server Test: Measures availability and performance of HTTP services.
- Page Load Test: Uses a Chromium-based browser to measure in-browser site performance and page load times.
- Transaction Test: Emulates user interactions with websites using scripted steps (e.g., form entry, button clicks).
- FTP Server Test: Supports FTP, FTPS, and SFTP protocols to verify FTP server availability and performance.

Voice Layer Tests:

- SIP Server Test: Checks availability and registration of SIP VoIP servers.
- RTP Stream Test: Measures quality of real-time transport protocol voice streams between agents.
- Voice Call Test: Combines SIP and RTP tests to simulate full voice calls.



Types of Tests

Endpoint Agent Tests

Dynamic Test: Automatically monitor real-time application sessions. Tailored for dynamic services like collaboration (Zoom, Webex, Teams).

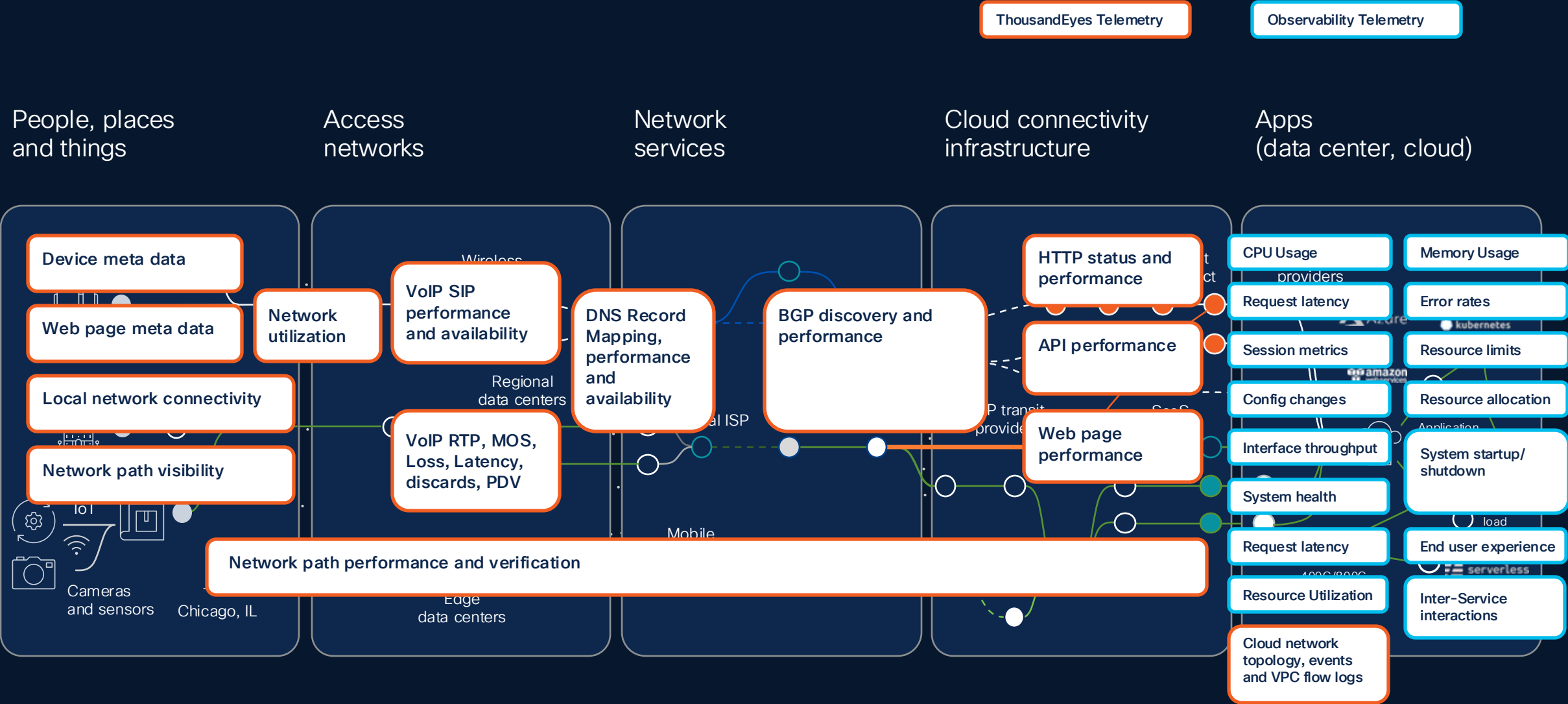
Scheduled Test: HTTP and Agent to Server (TCP/ICMP) tests performed at regular intervals

Real User Monitoring: Utilizes **browser extension** to capture JavaScript performance metrics on actual user experiences with pre-selected web applications

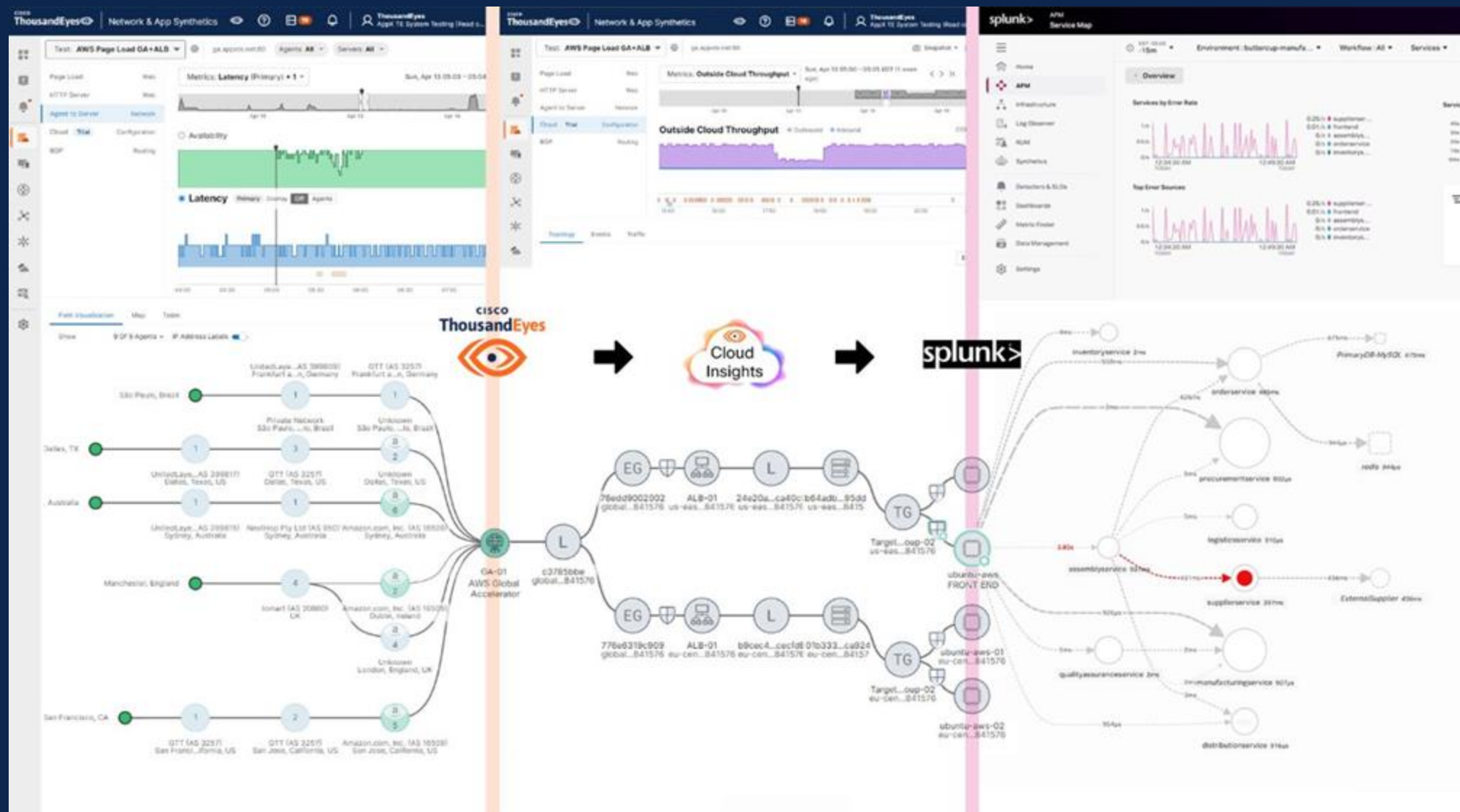
Local Network: Continuously monitor Wi-Fi, default gateways, VPN's, security proxies, and DNS



What is ThousandEyes Assurance?



End-to-End Visibility (really)



Common Questions

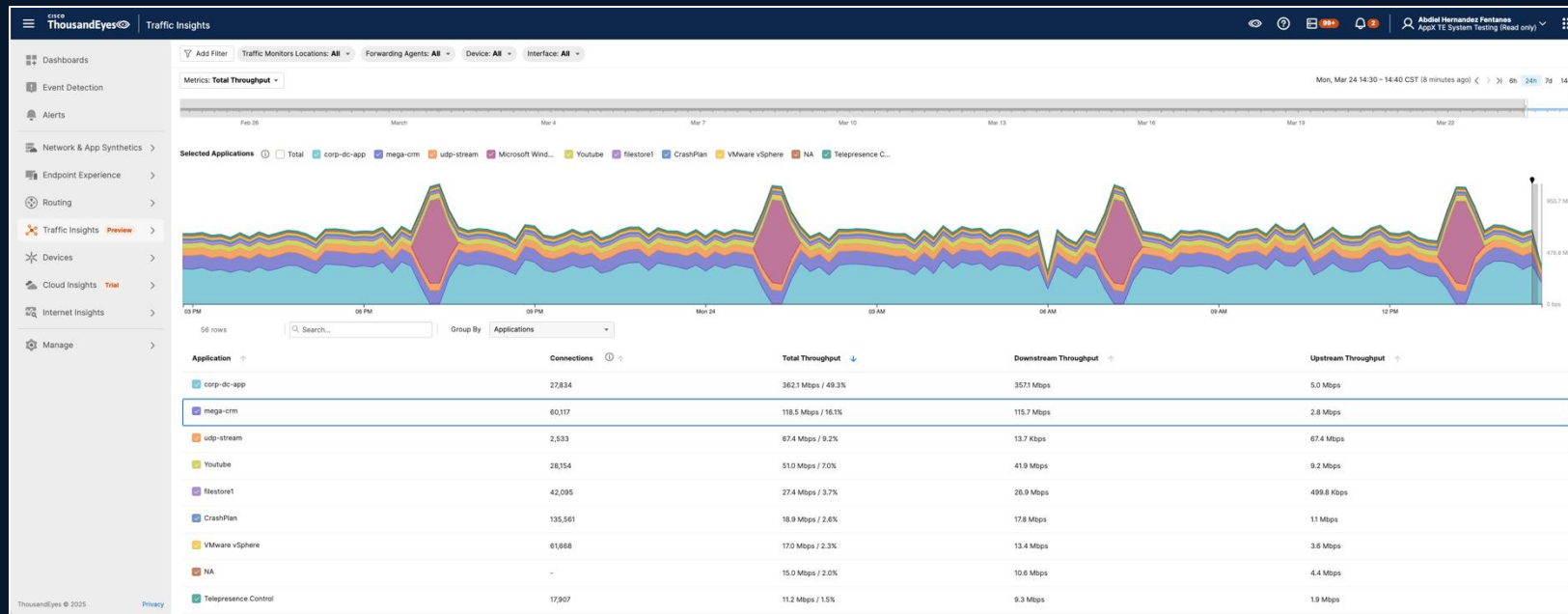
- Do I need an Enterprise Agent on every switch / router / AP?
 - No, typically only a handful or even one Enterprise Agent per physical site is sufficient.
- Will the Enterprise Agent degrade the performance of network device?
 - No, docker containers in the network devices limit the ability for the Enterprise Agent to use more than allocated resources. In the event of device congestion, processing traffic takes precedent.
- Are there any special firewall rules needed to allow this to function?
 - The Enterprise Agent is designed to simulate client traffic. With a few exceptions, if the agent mimics the same network placement it's emulating, firewall traversals shouldn't be an issue. If the firewall or proxy does impede testing, there are steps we can take to mitigate the issue with minimal or even no changes to the security policy.
- Do I need an Enterprise Agent on my application servers?
 - No, ThousandEyes agents only behave as clients. From an application's point of view they are just another client that needs service.

Demo

What's New?

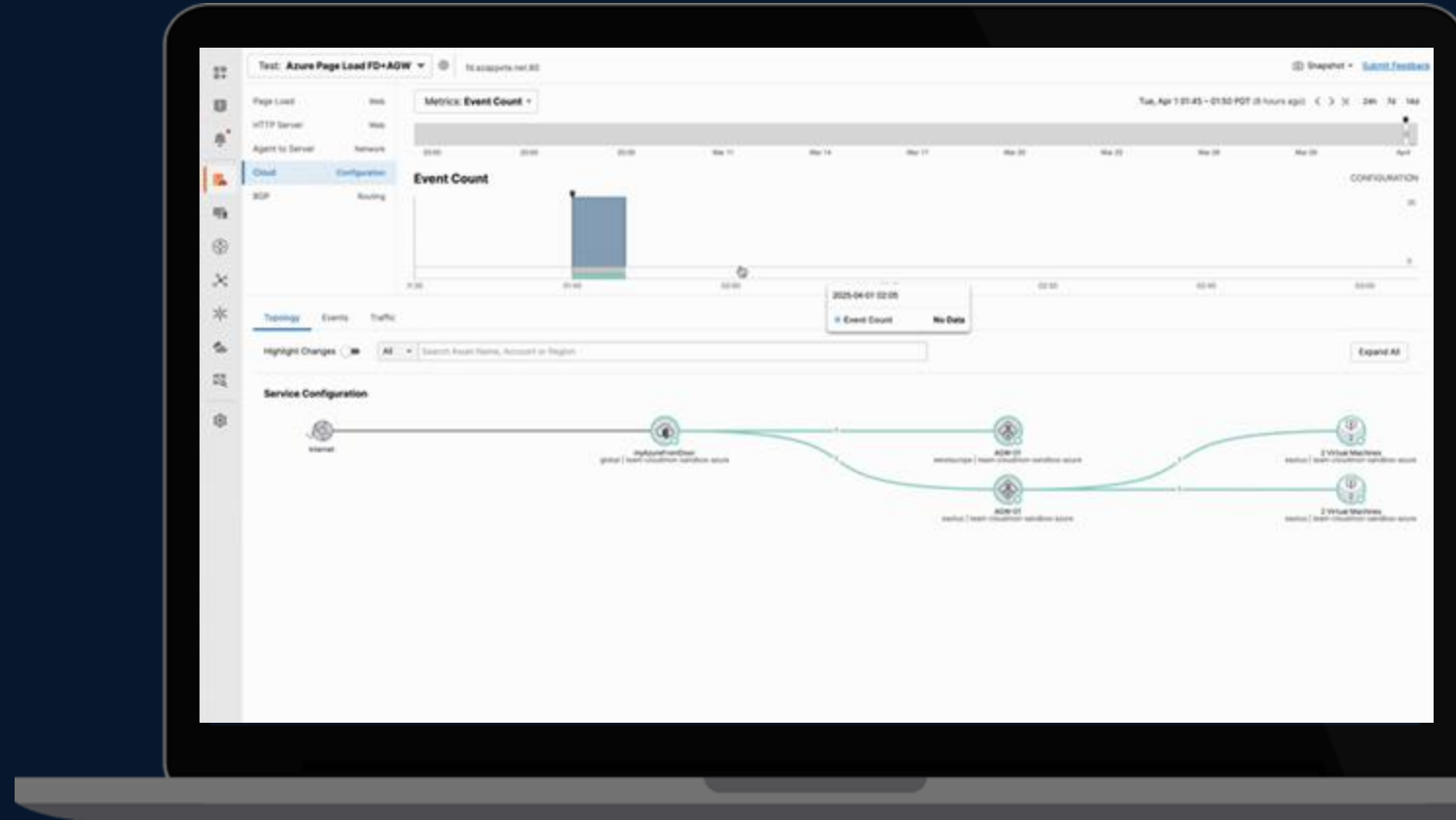
Traffic Insights enhances Assurance with Flow analytics

- Enterprise Agent – now enhanced with flow forwarding
- Automatic correlation of traffic metrics (NetFlow, IPFIX) and network synthetic data
- Single pane of glass visibility into "owned" networks – complements visibility into "unowned"
- Dashboards/reporting, alerts



Multi-cloud Assurance with Cloud Insights for AWS and Azure

- Unlock Cloud Potential with Automated Discovery
- Enhance Performance with AI-Driven Insights
- Accelerate Root Cause Analysis with Visual Topology
- Ingests AWS VPC flow logs and display traffic in pre-built dashboards.
- Enable traffic views filtered by cloud account, region, zone, VPC, or application for flexible insights.
- Correlate configuration changes with digital experience to quickly identify root causes.

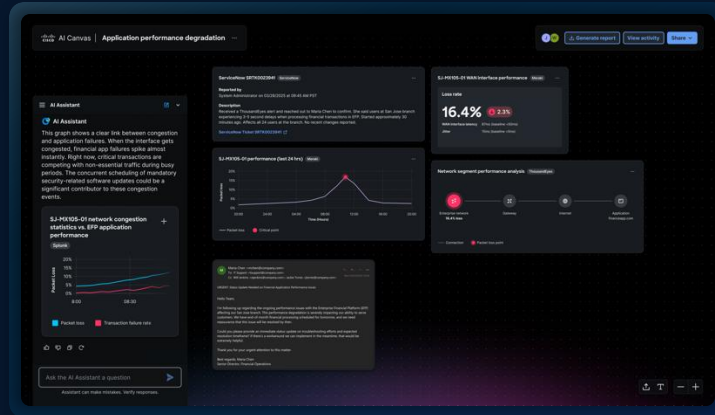


Demo

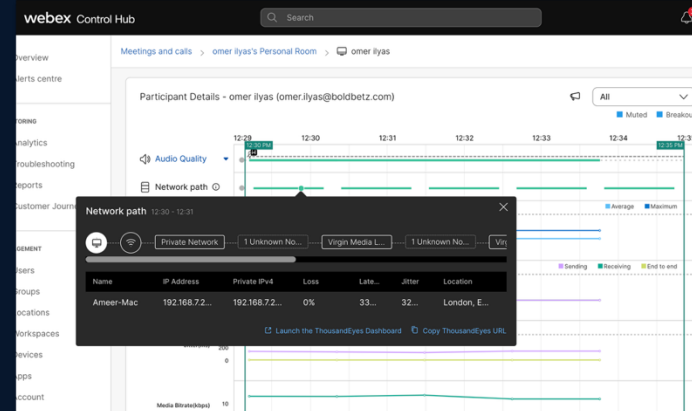


Integrations

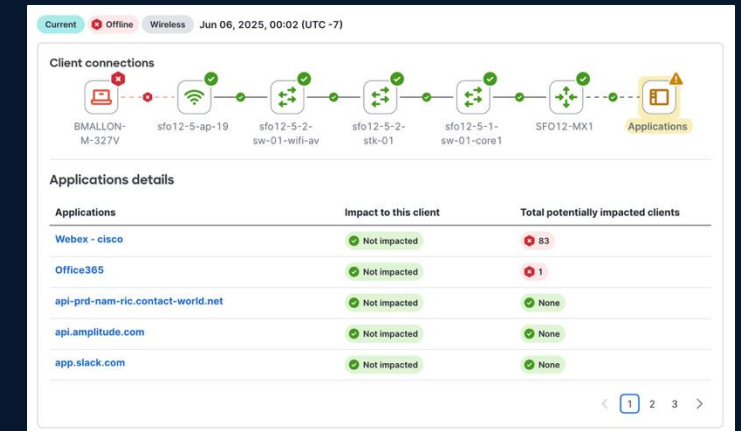
AI Canvas



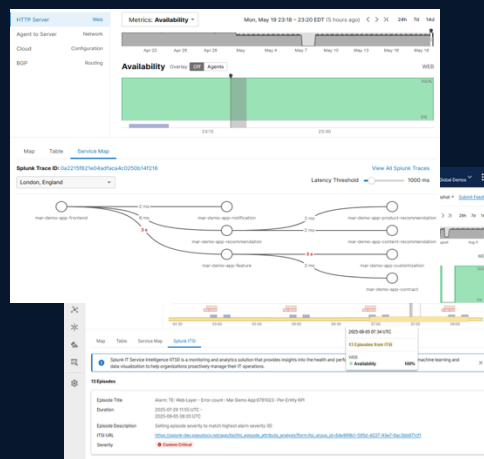
Webex Control Hub



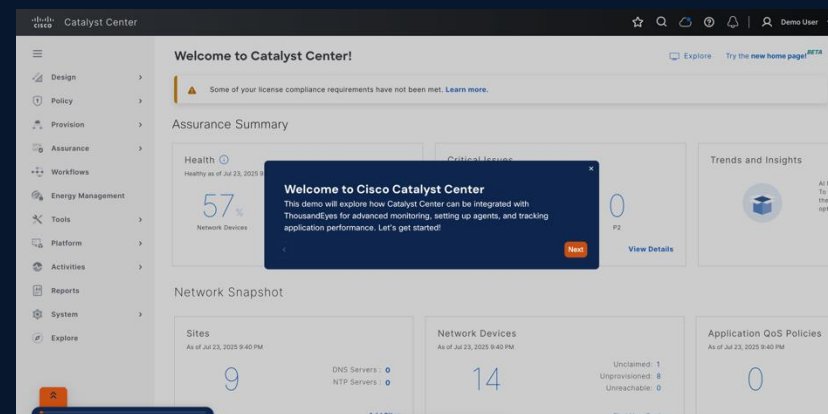
Meraki Dashbaord



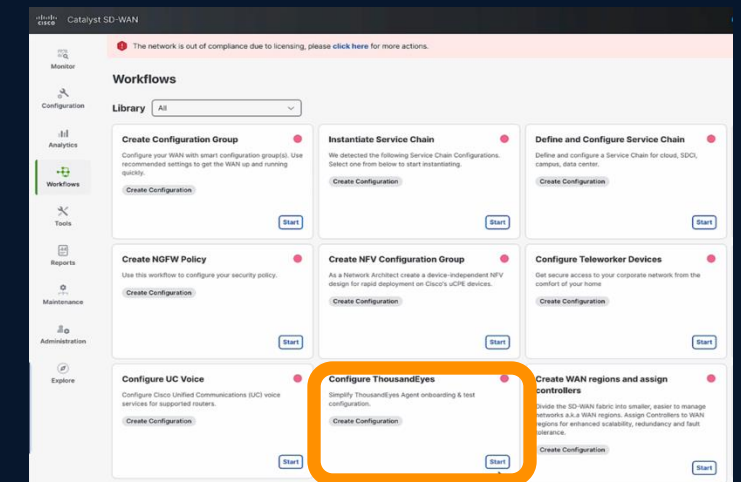
Splunk



Catalyst Center

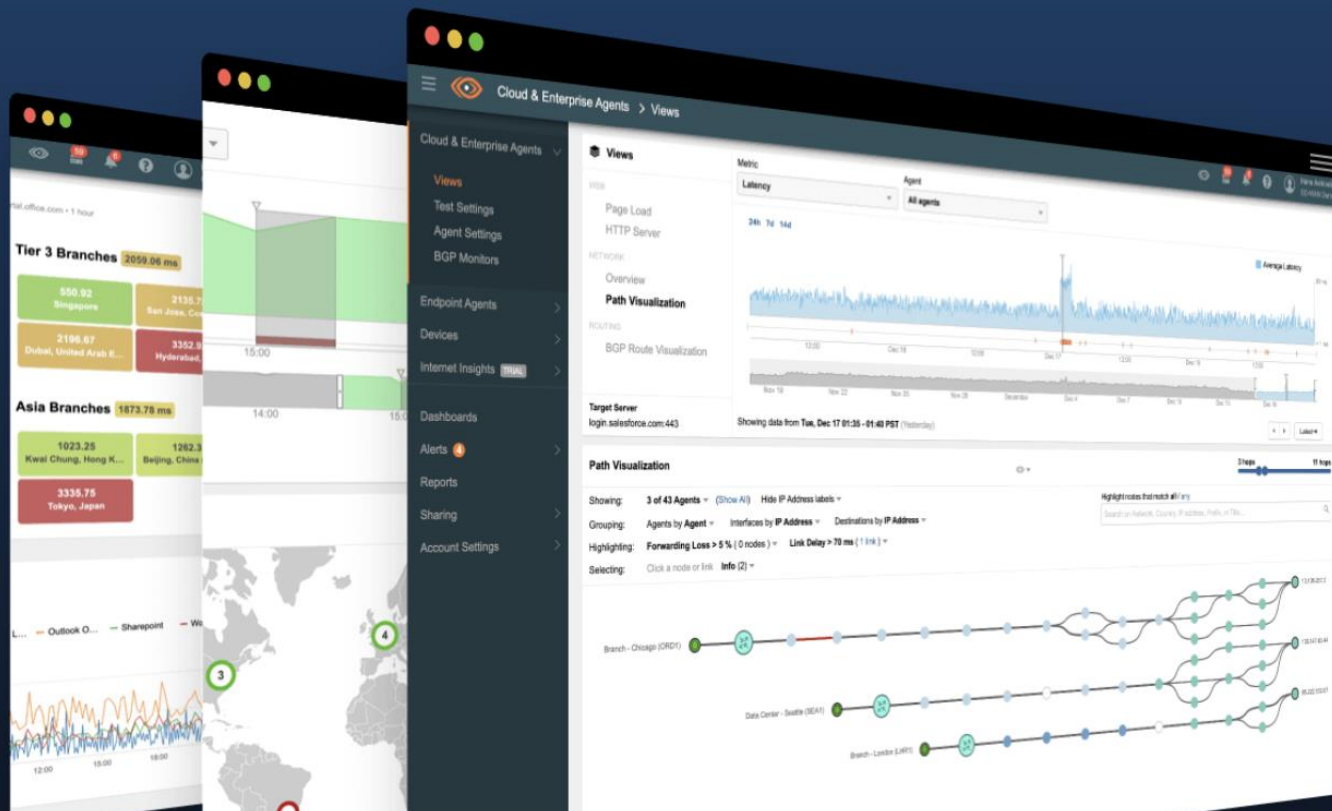


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