

CISCO *Live!*

GO BEYOND

#CiscoLiveAPJC



Enhancing Collaboration

Webex and Microsoft Visibility with ThousandEyes and Meraki

Omer Ilyas
Technical Marketing Engineer Leader
BRKCOL-2071



#CiscoLiveAPJC

Cisco Webex App

Questions?

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

How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
- 3 Install the Webex App or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until November 15, 2024.



<https://ciscolive.ciscoevents.com/ciscolivebot/#BRKCOL-2071>

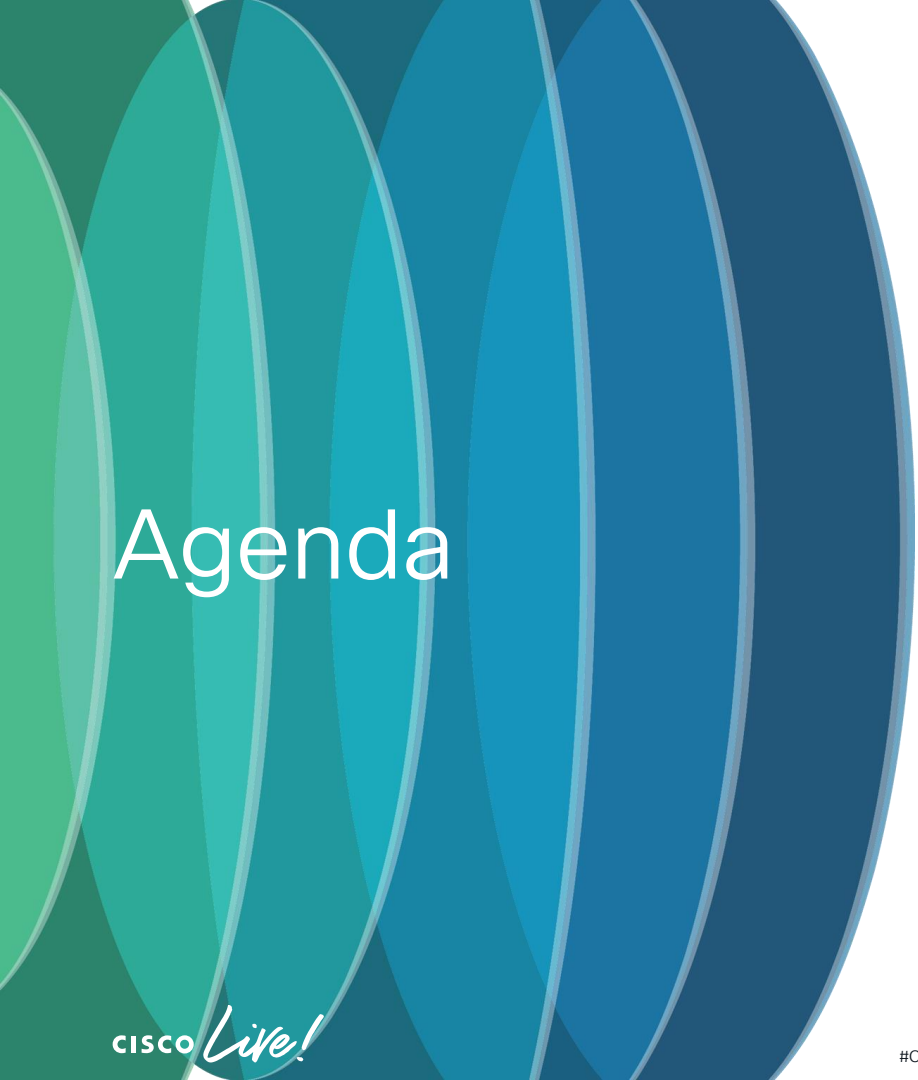


Safe Harbor Statement

This presentation contains “forward-looking” statements that involve risks, uncertainties and assumptions. If the risks or uncertainties ever materialize or the assumptions prove incorrect, our results may differ materially from those expressed or implied by such forward-looking statements. All statements other than statements of historical fact could be deemed forward-looking, including, but not limited to, any projections of financial information; any statements about historical results that may suggest trends for our business; any statements of the plans, strategies, and objectives of management for future operations; any statements of expectation or belief regarding future events, technology developments, or enforceability of our intellectual property rights; and any statements of assumptions underlying any of the foregoing.

These statements are based on estimates and information available to us at the time of this presentation and are not guarantees of future performance. Actual results could differ materially from our current expectations as a results of many factors, including but not limited to:

the unpredictable nature of our rapidly evolving market and quarterly fluctuations in our business; the effects of competition; and any adverse changes in our indirect channel relationships. These and other risks and uncertainties associated with our business are described in the company’s annual report on Form 10-K. The forward-looking statements in this presentation are made as of the date of the initial publication of this presentation, and we disclaim any obligation to update these statements at any time in the future.



Agenda

- Introduction
- ThousandEyes Agents
- Integrations
 - ThousandEyes and Webex
 - ThousandEyes and VIMT/Webrtx
 - ThousandEyes and MTR
 - ThousandEyes and Webex Calling
- Meraki + Webex
- Conclusion

Understanding Challenges of SaaS Applications

Cloud is the new Datacenter



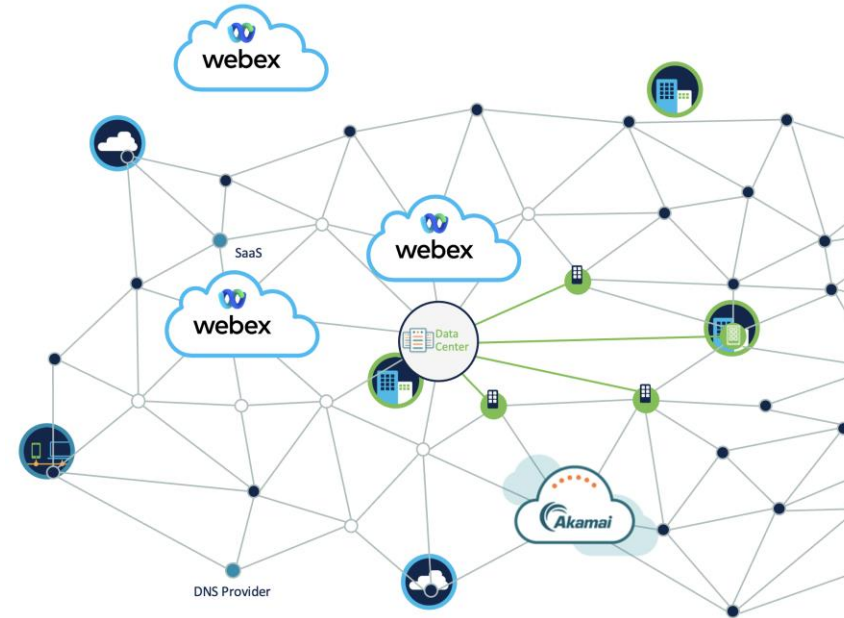
Internet is the new network



SaaS is the new application stack



Home is the new office



IT Network Challenges

The outcomes cloud for your network

Visibility

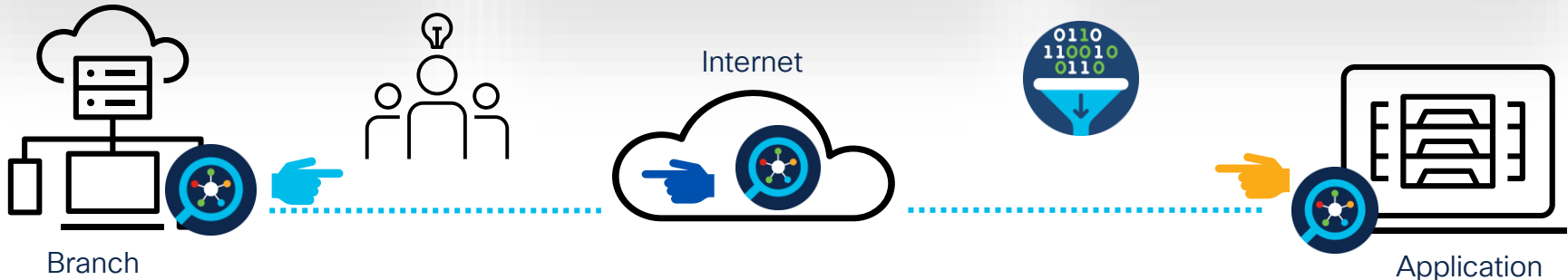
Cloud, internet, ISP and all start within your OWN network

Event Correlation

Data is collected from different sources but not centralised

Collaboration

Assumption based collaboration rather than evidence based



Hybrid work needs more than collaboration..



Networking



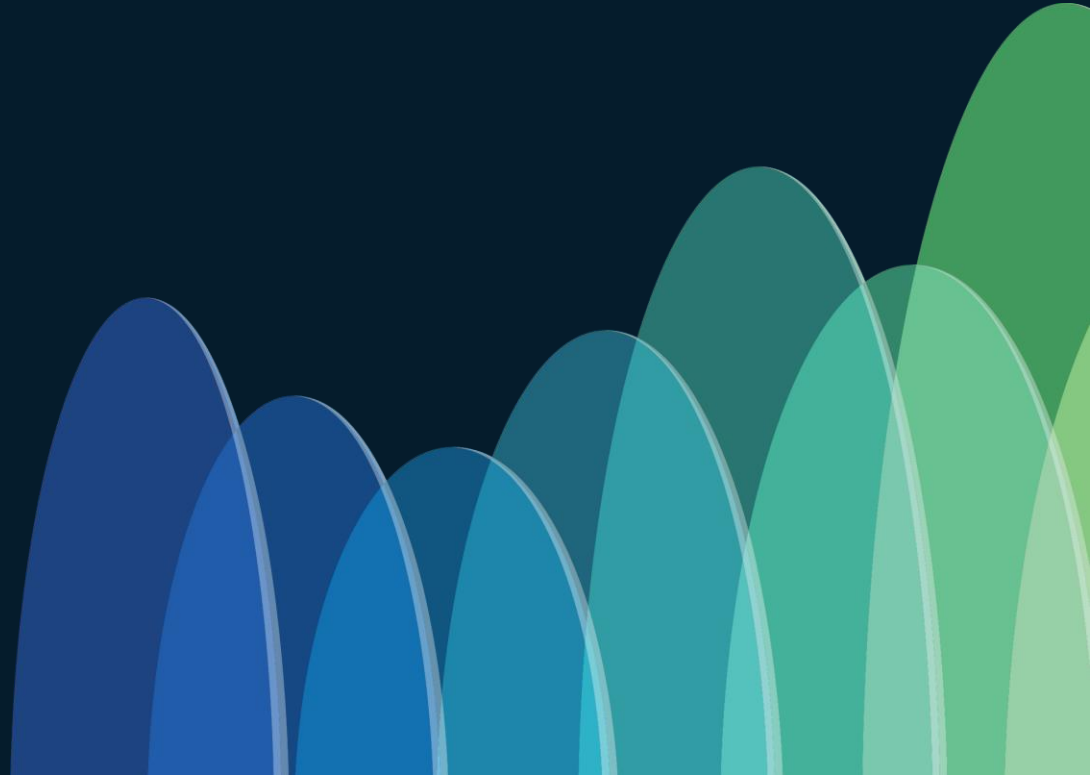
Collaboration



Security

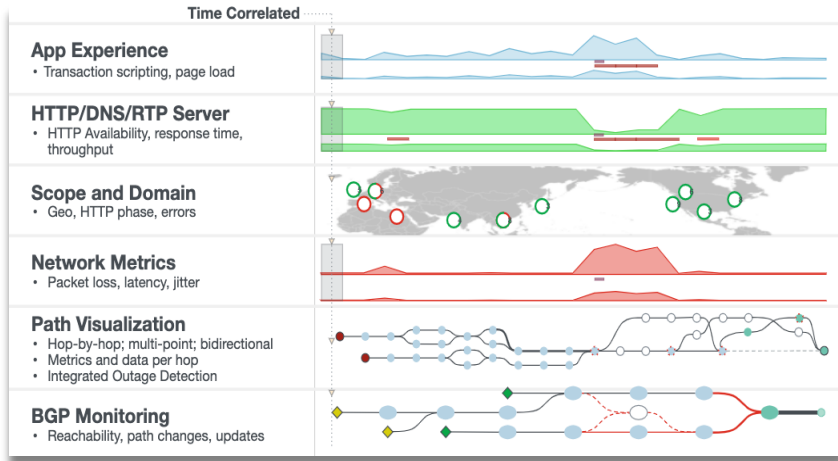


ThousandEyes Introduction



ThousandEyes – Delivering Network Intelligence

A SaaS based I/internet and cloud intelligence solution



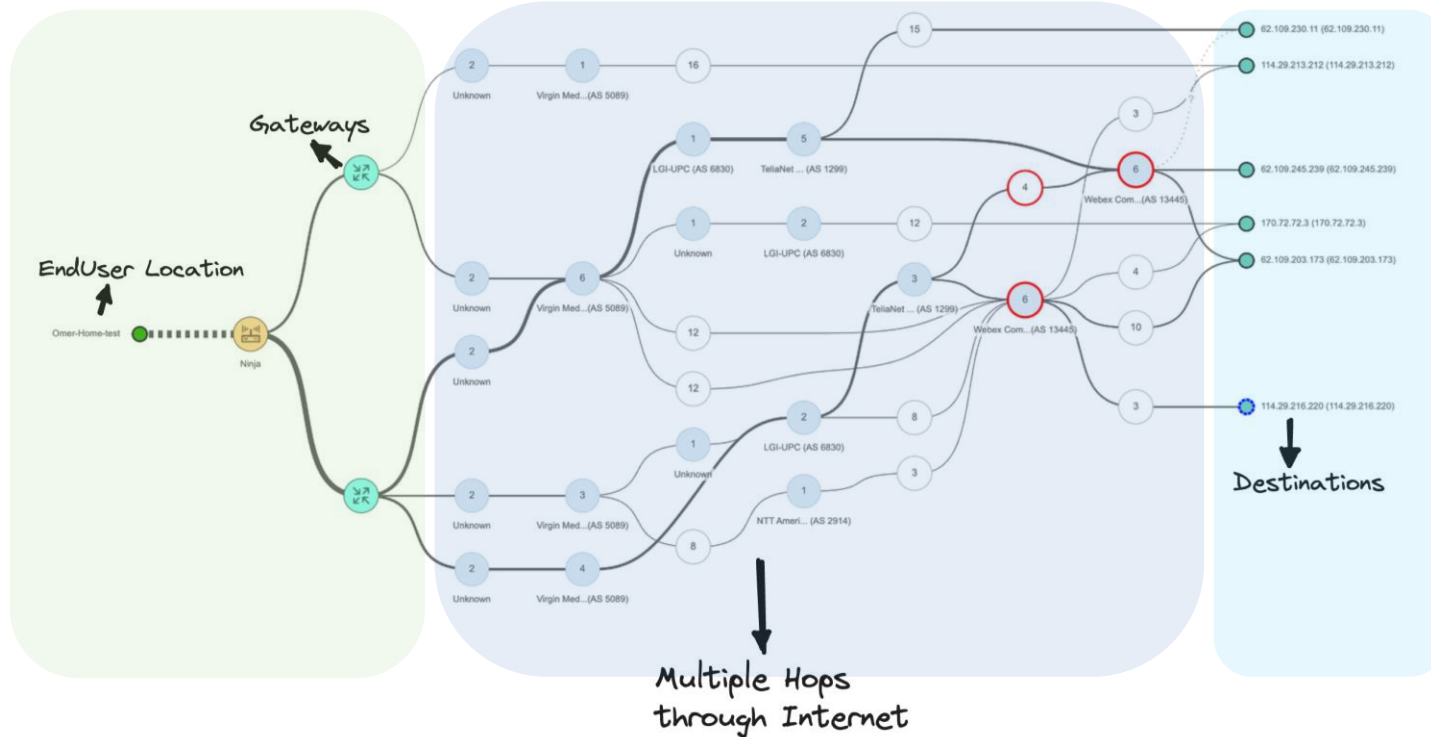
Superior Network Experience

Collective Intelligence

Interactive Collaboration

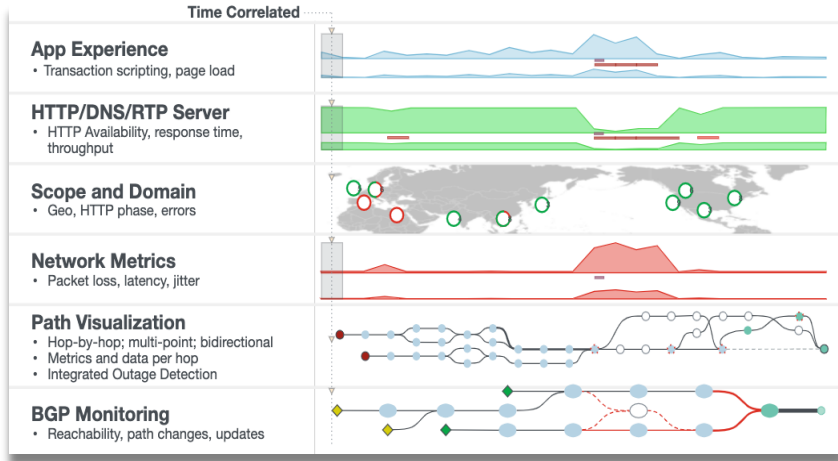
ThousandEyes - Delivering Network Intelligence

A SaaS based I/internet and cloud intelligence solution



ThousandEyes – Delivering Network Intelligence

A SaaS based I/internet and cloud intelligence solution



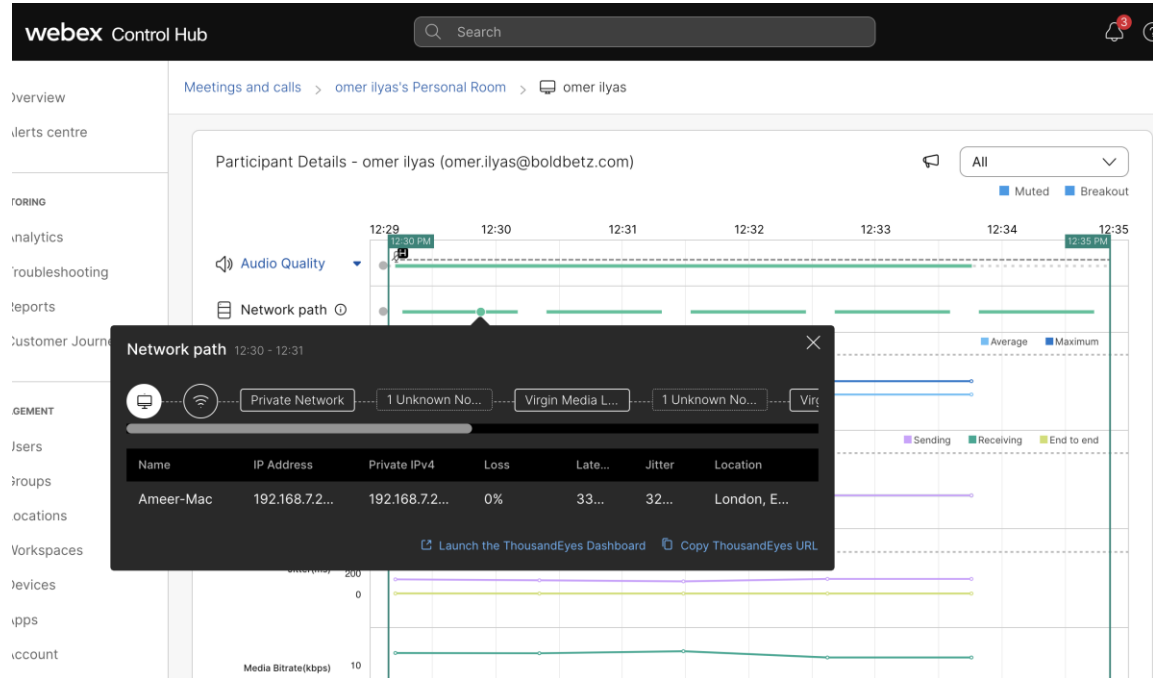
Superior Network Experience

Collective Intelligence

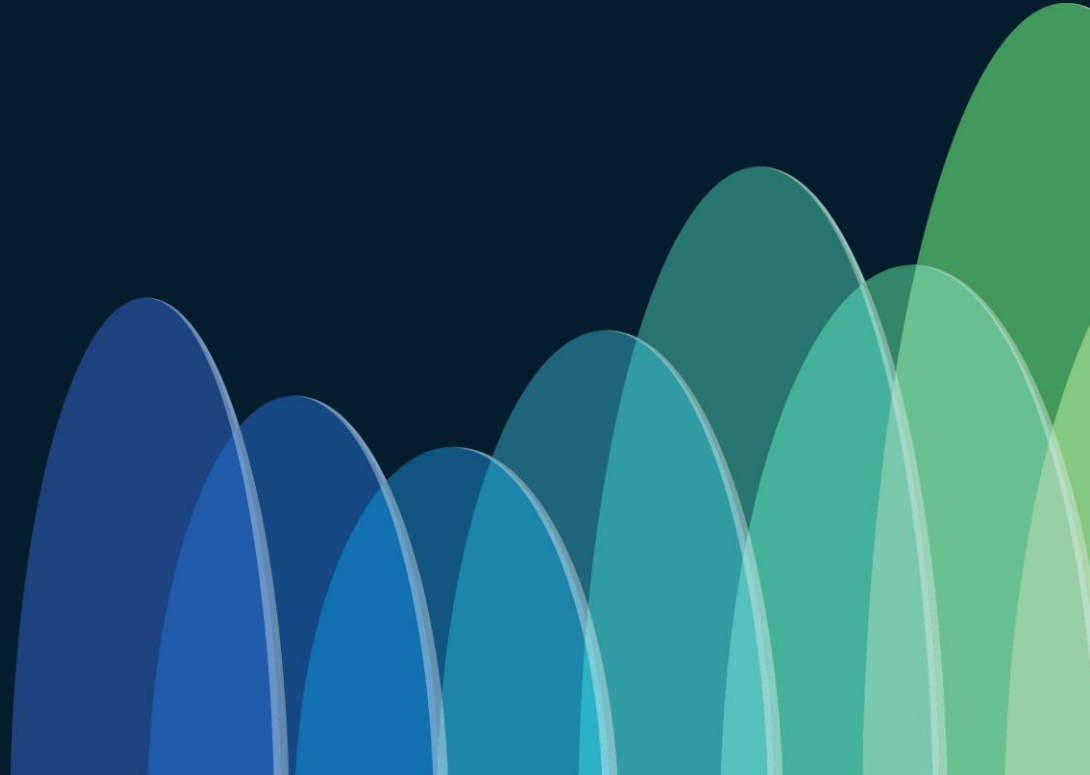
Interactive Collaboration

Why ThousandEyes and Webex/Microsoft?

- Real-time media streams like audio and video are very sensitive to network conditions
- ThousandEyes provides IT teams network **visibility** between user locations and Webex services
- Rapidly **identify problem domains** (application, network, or third-party)
- Leverage insights from ThousandEyes and Webex Control Hub to optimise performance and ensure exceptional Webex user experiences



ThousandEyes – Agent Types



ThousandEyes Agents



 Cloud Agents

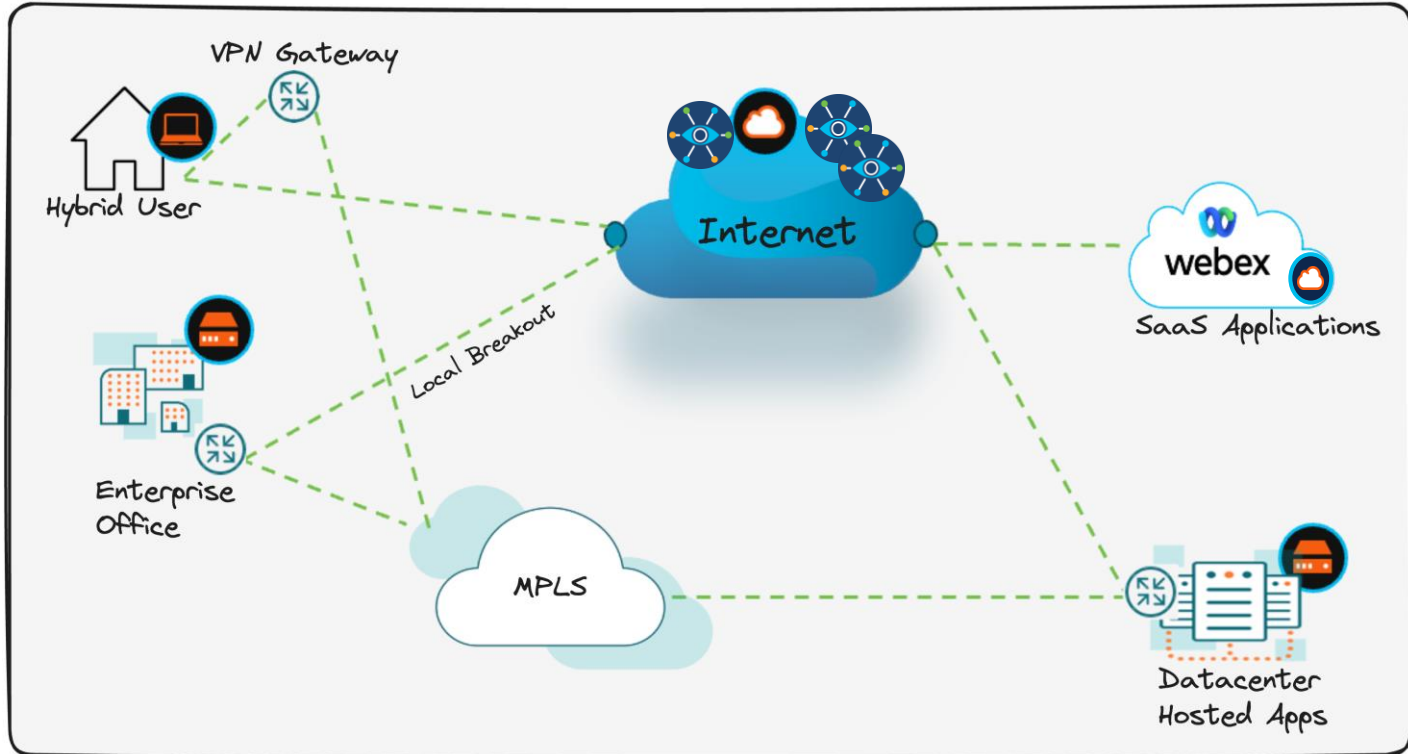
 Enterprise Agents

 Endpoint Agents

Agents / Vantage Points

Cloud Agents

Cloud Agents for Extended bidirectional Visibility

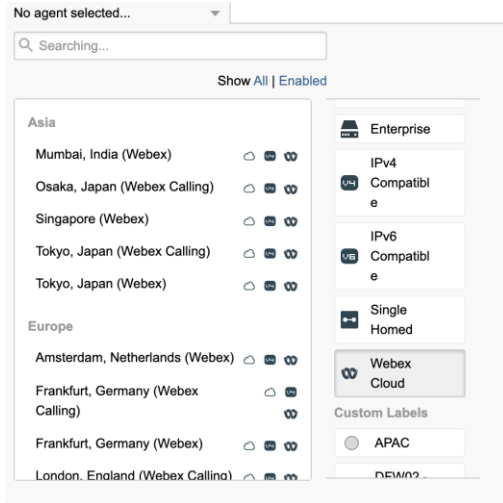
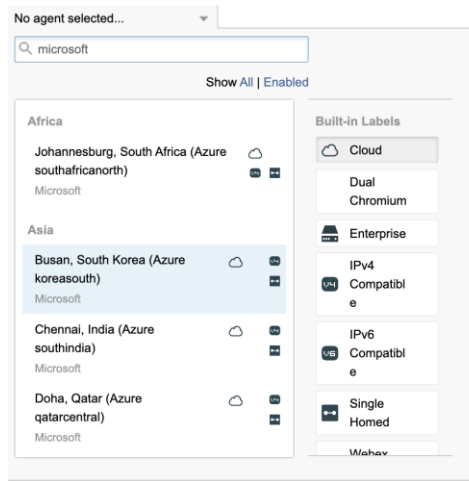
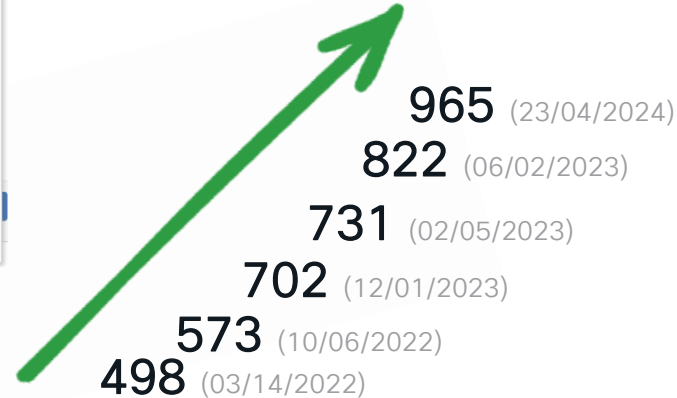


Cloud Agents

Cloud Agents for Extended bidirectional Visibility

Webex Cloud DC

Microsoft Azure DC



Cloud Agents

Cloud Agents for Extended bidirectional Visibility

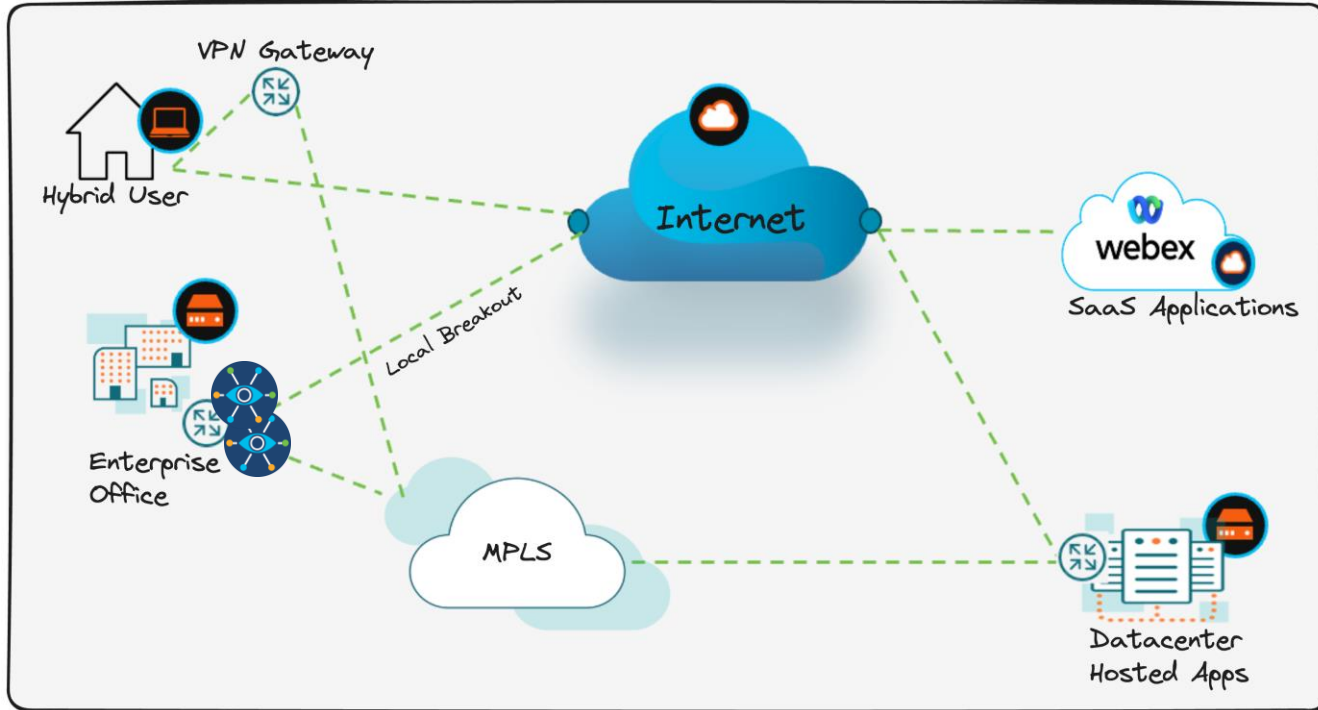
- ThousandEyes provides and manages Webex cloud agents at several Webex data centres responsible for serving customer traffic.
- These agents are available for general use by all ThousandEyes customers and are a tool to better monitor and troubleshoot your Webex performance.
- Webex Cloud agents can **NEVER** be used as a source for tests.



Visualisation of forward and reverse network paths to isolate problem areas

Enterprise Agents

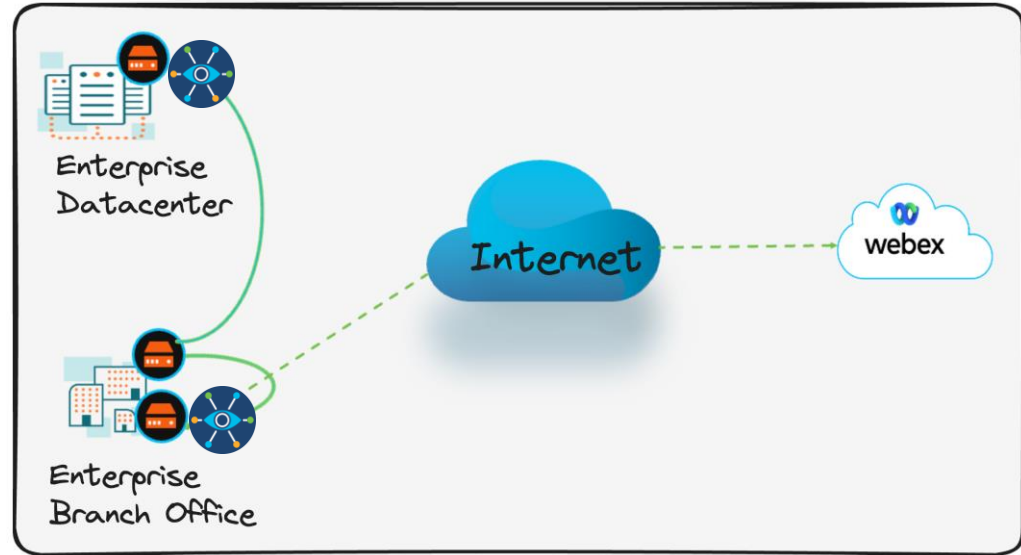
Enterprise Agents – Monitoring Internal and External Networks



Enterprise Agents

Enterprise Agents – Monitoring Internal and External Networks

- Ability to monitor, benchmark, and troubleshoot from your network to Webex cloud performance.
- Connect Enterprise Agents to Cloud Agents located in the Cisco Webex Cloud globally to perform bi-directional network performance testing.
- Manage and access via the ThousandEyes Dashboard.



Enterprise Agents

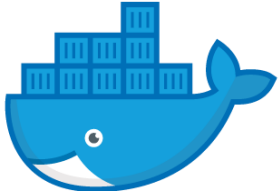
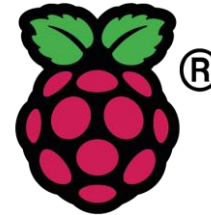
Enterprise Agents – Monitoring Internal and External Networks

	With Browser Bot	Without Browser Bot
CPU Count	2	2
RAM	2 GB	1 GB
Hard disk Space	20 GB	20 GB
Network Interface	Required	Required
Internet Connection	Required	Required

Enterprise Agents are Linux software deployed by an enterprise and used to test targets from inside of your network

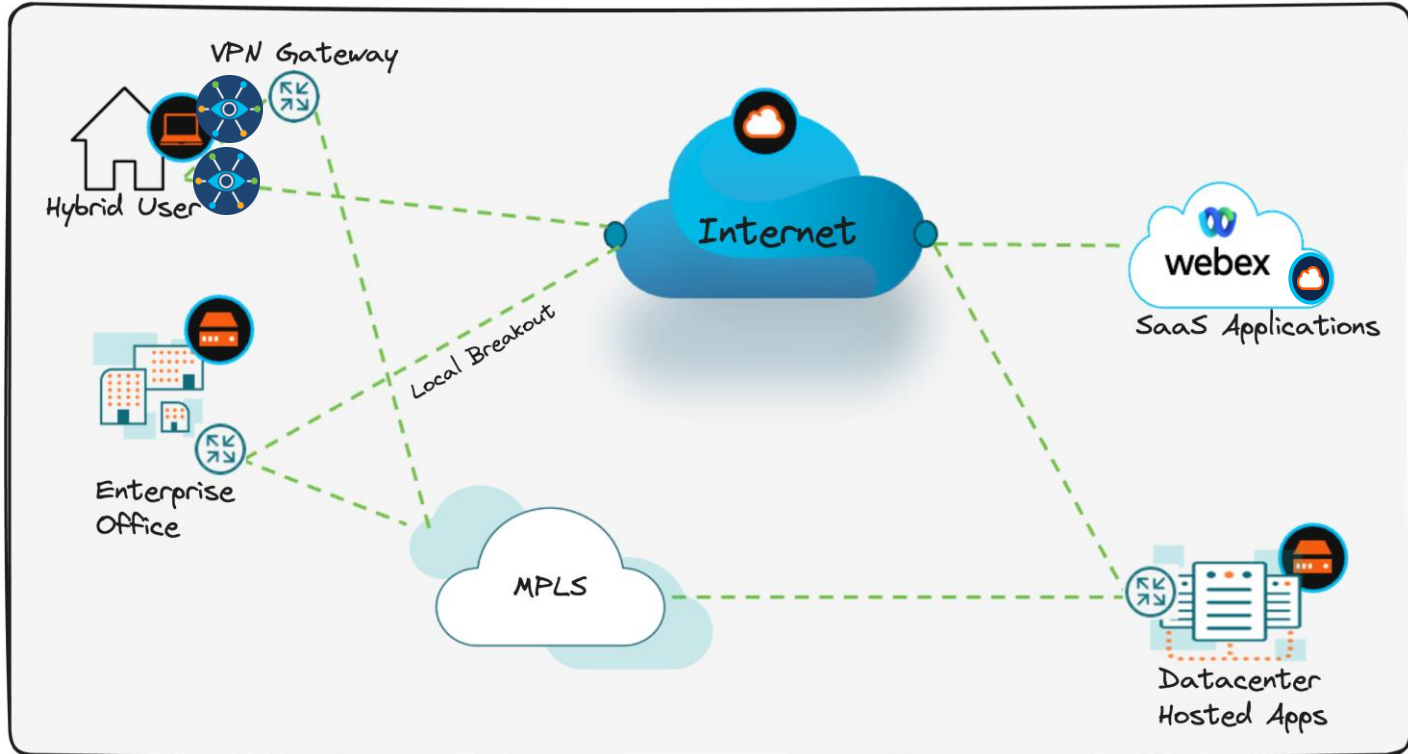
Enterprise Agents

Enterprise Agents – Monitoring Internal and External Networks



Endpoint Agents

Endpoint Agents – Visibility from end-user perspective



Endpoint Agents

PC/MAC– Hop by Hop visibility for your meeting



Endpoint Agent

(Recommended) Full featured endpoint agent.

Endpoint Agent Pulse

Endpoint agent not including support for browser-based data collection.

Windows

Windows 10 or higher. Browser Session Data requires Google Chrome 41+, Internet Explorer 11+ or Microsoft Edge 79+

SHA256:bbf14c75e6d20dd16589f...
SHA256:516a6eae2d2b8bbc74f85...



MSI (x64): [Download](#)



MSI (x86): [Download](#)

Mac

macOS 11 (Big Sur) or higher. Browser Session Data requires Google Chrome 41+ or Microsoft Edge 79+

SHA256:169579d1cf5f03623598c...



PKG (x64): [Download](#)



Customized Installers (Deprecated)

We are deprecating customized agent installer for a more streamlined experience

Agent Reinstallation Key

No agent reinstallation key

[Regenerate New Key](#)

The agent reinstallation key is unique for the entire account. As explained [here](#), using this key in the installation process will merge new agents with the corresponding existing agents, if they share the same hostname.

Connection String

S3FD77CY+VOrk+4fbgjBd2VdQJW4cHlnb1gBG5sxCu7TQf02hV7p8w0yKjll/OgHvAIBLcLQQ4ByZRPK5.

[Copy](#)

The connection string is needed during agent registration

Endpoint Agents									
Proxy Settings Agent Labels Advanced Agent Settings									
Add a filter									
Search by Name or Hostname				11 Endpoint Agents					
☐	Name	Agent Version	Browser Extension	Current Location	Last Contact	Public IP Address	Private IP Address	Last Modified	
☐	SEP048D97C8501E	1.181.0	–	Cary, North Carolina, US	11 minutes ago	173.38.117.76	10.116.174.70	3 days ago	
☐	SEP845A3EC21784	1.188.0	–	Santa Clara, California, US	5 hours ago	128.107.241.179	10.17.220.36	6 days ago	
☐	SEP845A3EC21009	1.188.0	–	Santa Clara, California, US	19 hours ago	128.107.241.171	10.17.220.137	6 days ago	
☐	SEP845A3EC2153B	1.188.0	–	Arlington, Virginia, US	2 days ago	173.79.44.155	192.168.0.31	6 days ago	
☐	MALEK-LAPTOP MALEK-LAPTOP\Columbus-TSW-2	1.195.1.100	–	Watford, England, UK	19 hours ago	82.36.211.68	192.168.7.45	14 days ago	
☐	SEP8C29D21778BF	1.181.0	–	London, England, UK	21 hours ago	82.36.211.68	192.168.7.165	14 days ago	
☐	SEP548DEC7E88D	1.181.0	–	London, England, UK	7 hours ago	82.36.211.68	192.168.0.30	14 days ago	
☐	Ameer-Mac olys	1.195.1.100	–	London, England, UK	2 hours ago	82.36.211.68	192.168.7.248	14 days ago	
☐	SEP845A3EC21096	1.188.0	–	Piano, Texas, US	12 days ago	72.163.2.243	10.99.17.250	22 days ago	
☐	GQEO-M-KH52 ggeo	1.195.0	–	London, England, UK	37 minutes ago	195.27.35.158	10.50.178.169	65 days ago	
☐	SUGOGINE-M-7XNV sugogine	1.193.1	–	Cary, North Carolina, US	1 hour ago	173.38.117.76	10.151.225.83	115 days ago	

Endpoint Agents

RoomOS Agents – Hop by Hop visibility for your meeting

ThousandEyes Agents

Will be released with the RoomOS software channel-Works for [Cloud register / On prem and Edge enabled](#) devices.

Test Supported

Dynamic tests will run every 60 sec when meetings are in progress.

Problem Solving

Aims to mitigate the complexities of troubleshooting RoomOS devices.

Simplification

Simplifies the problem-solving process and enhances overall device performance.



Supported Devices (Webex Cloud)

Cisco Room Series

*Except for Navigator

Cisco Desk Series

* Except for Desk Camera

Cisco Board Series

Cisco Codec (Pro /EQ)



RoomOS device firmware must be RoomOS 11.7.1.6 16945c93906 or higher.(DX/SX/MX products) are out of scope at this time

Endpoint Agents

RoomOS Agents vs ThousandEyes [Agent Version Alignment](#)



ThousandEyes version

1.198

1.195.1

1.181.0

1.175.0

1.171.0

1.169.1

1.167.0

1.165.0



RoomOS version

11.19.1

11.17.1

11.12.1

11.10.1

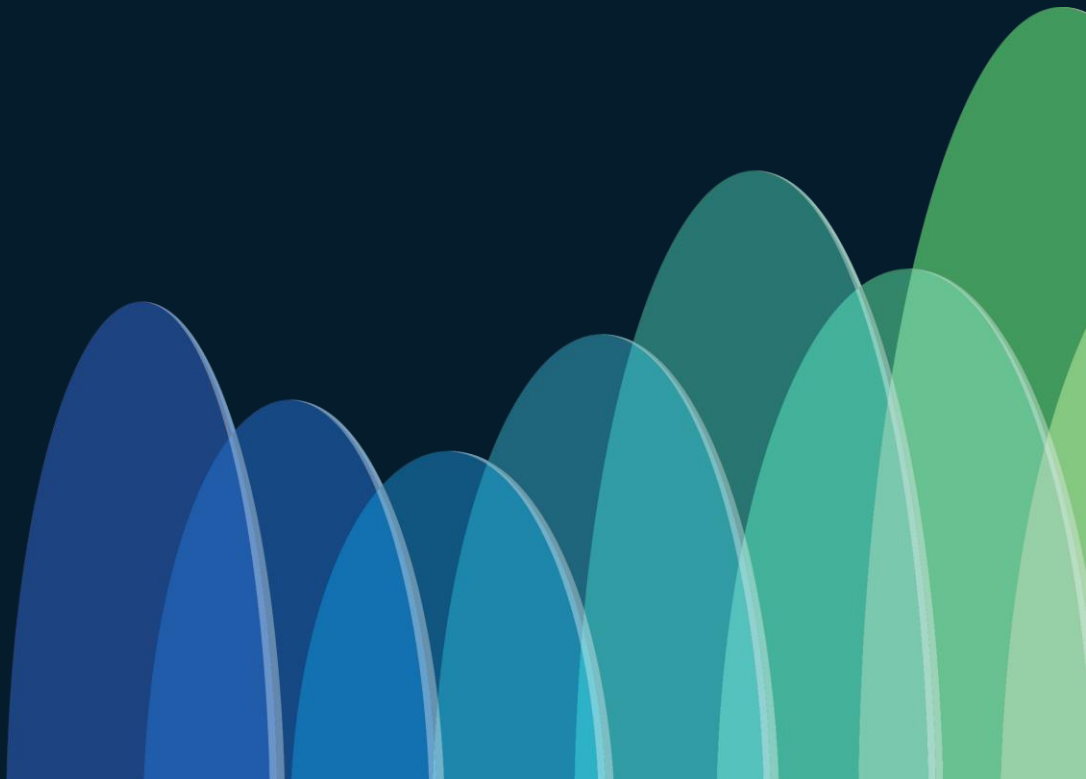
11.10.0

11.9.1

11.8.1

11.7.1

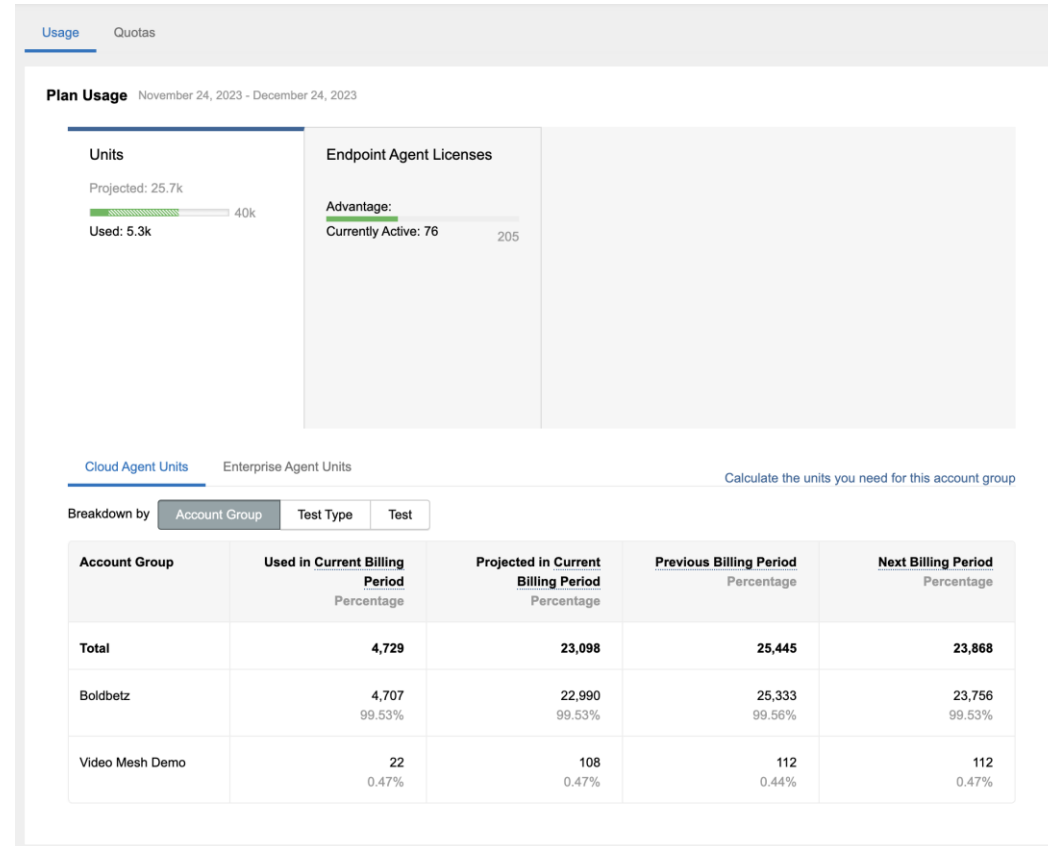
ThousandEyes – License Overview



Usage Based

Cloud and Enterprise License

- [ThousandEyes unit consumption](#) is directly proportional to the resources consumed by the test configuration
- Tests from [cloud](#) and [enterprise agents](#) consume units based on test type, number of agent vantage points selected, and the interval.
- [ThousandEyes Test Calculator](#)
- Enterprise agents consume half the units compared to cloud agents



Endpoint Agent Licensing

Advantage or Essential

- One ThousandEyes endpoint Agent license (either essential or advantage) is needed
- **Advantage** – This license allows you to run a maximum of **10 concurrent tests** on an agent and retain the test data for **30 days**.
- **Essentials** – This license allows you to run a maximum of **4 concurrent tests** on an agent and retain the test data for **14 days**.

The screenshot displays the ThousandEyes Account Settings interface. At the top, the navigation bar includes the Cisco logo, 'ThousandEyes' branding, and 'Account Settings'. A dark header bar contains an 'Upgrade' button, a help icon, a notification bell with a '2' badge, and a user profile for 'Omer Ilyas Boldbetz'. Below the navigation, the 'Usage' tab is selected, showing 'Plan Usage' for the period 'July 24, 2023 - August 24, 2023'. The 'Units' section indicates 'Used: 1.2k (28k projected)' with a progress bar and a 'Plan: 30k' label. The 'Endpoint Agent Licenses' section shows 'Advantage License' with 'Currently Active: 49' and a 'Plan: 205' label. Below these sections is a table summarizing the license usage across different account groups.

Account Group	Advantage License	Agent Count
Total (currently active)	49	49
Boldbetz	49	49

At the bottom of the page, there is an 'Organization Deletion' section with a warning message: 'To permanently delete your account, click the Delete button.' and a red 'Delete' button.

Managing Licenses

- The total number of licenses available in your Plan, currently Active licenses, and licenses used in each Account Group is shown in the Plan Usage, Endpoint Agent Licenses section on the Account Settings > Usage and Billing

Plan Usage August 24, 2024 - September 24, 2024

Units
Projected: 26.5k
Used: 14.9k / 40k

Endpoint Agent Licenses
Advantage:
Currently Active: 5 / 205

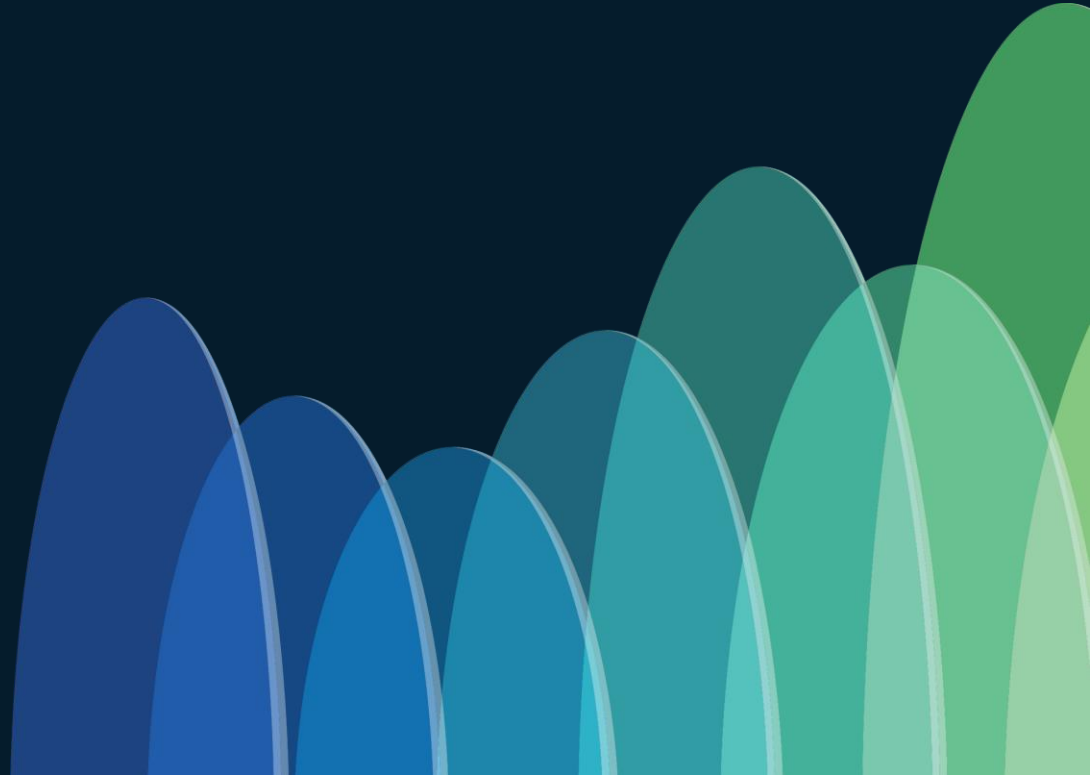
Enterprise/Cloud Agents (points to Units)
Endpoint Agents (points to Endpoint Agent Licenses)

Usage and Billing

Breakdown by: **Account Group** | Test Type | Test

Account Group	Used in Current Billing Period Percentage	Projected in Current Billing Period Percentage	Previous Billing Period Percentage	Next Billing Period Percentage
Total	13,219	23,852	23,852	23,852
Boldbetz	13,207 99.91%	23,830 99.91%	23,830 99.91%	23,830 99.91%
Video Mesh Demo	12 0.09%	22 0.09%	22 0.09%	22 0.09%

Endpoint Agents – Dynamic Test version 2.0

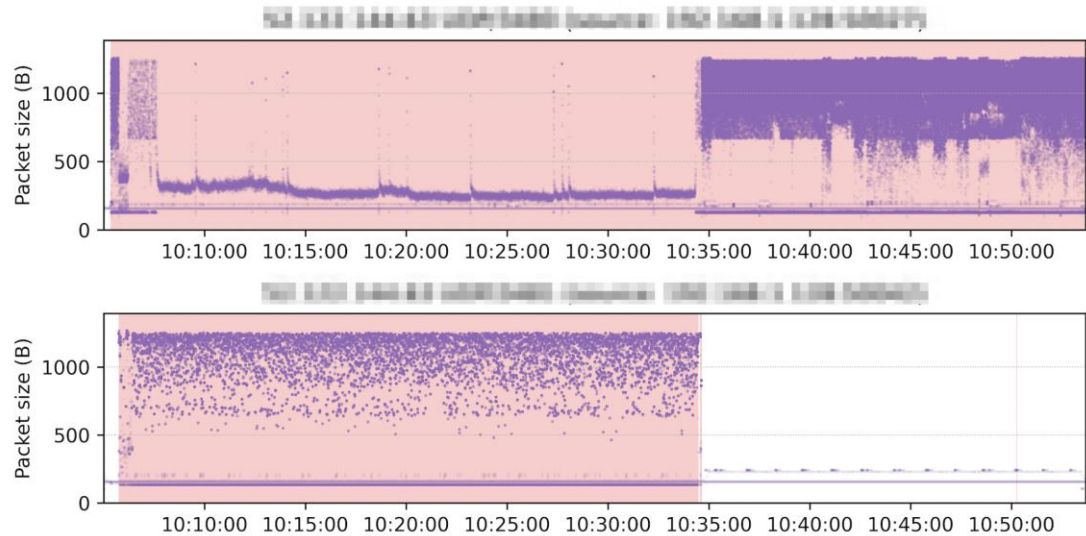


Dynamic Tests version 2.0

Media Stream Detection

More Accurate session detection:

- A new algorithm to identify media traffic so the agent can focus only on that traffic, leveraging the Media flow detection, instead of the existing protocol-based detection
- Higher accuracy on detection of TCP/UDP traffic from the session
- Opens the door to supporting the WebRTC -based collaboration application in the future



Endpoint Agent

Monitor the Collaboration experience with Dynamic Tests

Single Dynamic test for all Webex session types:

- Quick start with Webex Application Monitoring template
- Webex Dynamic test 2.0 will support more sessions:
 - [Webex Meeting](#)
 - [Webex Calling](#)
 - [Webex video integration for Microsoft Teams \(VIMT\)](#)
 - [On Prem registered devices](#)
 - [Phones OS\(* Beta\)](#)
- Supported on PC/Mac and RoomOS devices

Edit Test

Basic Configuration

Advanced Settings

Test Name

Webex (VIMT, VMN, WxC) - Dynamic

Target

Webex

Which agents should we send data from?

All agents

☒ Prioritize this test for the selected agents

How often should we run tests?

1 minute

Maximum number of agents per test

5000

2 AGENTS ASSIGNED, 2 AGENTS RUNNING THE TEST

Search...

Agent

Tests Running

GGEO-M-KH52	<div></div>	2
SEP04BD97C8501E	<div></div>	2

Endpoint Agent

Monitor the Collaboration experience with Dynamic Tests

Single Dynamic test for all Microsoft meetings from RoomOS devices:

- Quick start with Microsoft Application Monitoring template
- Webex Dynamic test 2.0 will support all:
 - **MTR deployments on Cisco devices**
 - **MSFT Webrtc**
- Supported MTR devices
- Phase1 no visibility in Control Hub trouble shooting section

Basic Configuration

Advanced Settings

Test Name

MTR

Target

Microsoft Teams

Which agents should we send data from?

All agents

☐ Prioritize this test for the selected agents

How often should we run tests?

1 minute

Maximum number of agents per test

75

2 AGENTS ASSIGNED, 2 AGENTS RUNNING THE TEST

Search...

Agent ↑

↑ Tests Running

 GGEO-M-KH52		2
 SEP04BD97C8501E		2

Dynamic Tests version 2.0

Summary

Webex Workflow

- Webex Meeting
- Webex Calling
- Phones OS
- RoomOS Devices
- VIMT

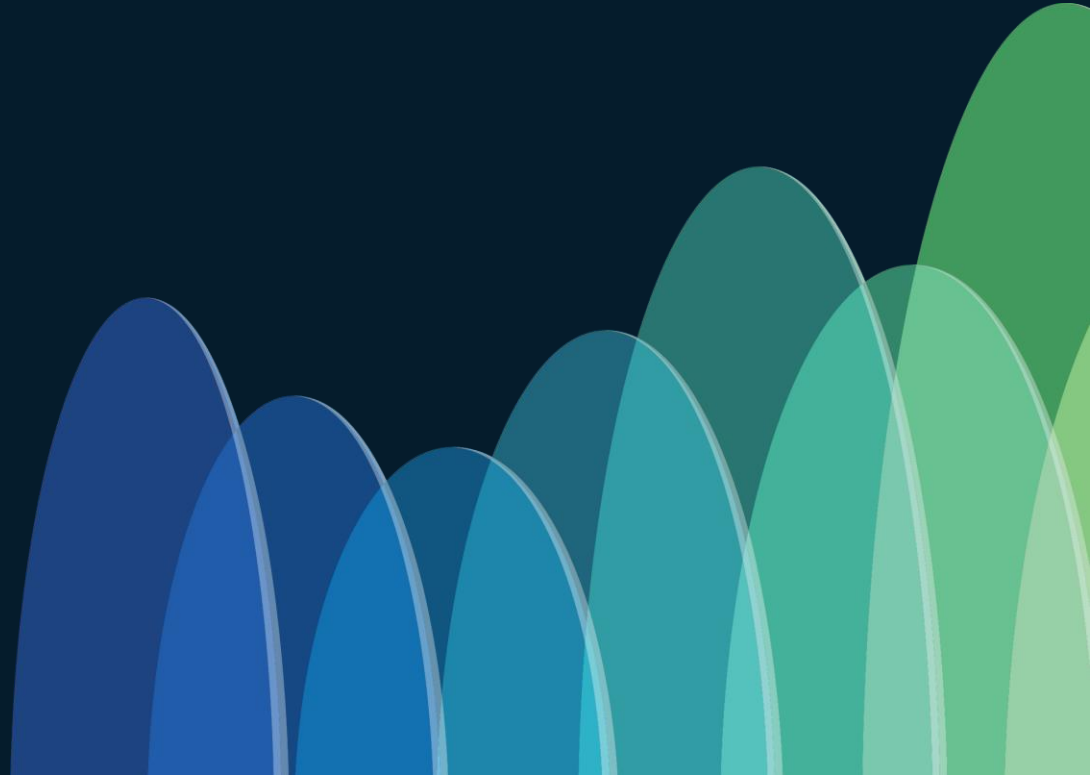


Microsoft Workflow

- MTR
- Webrtc



Configuration and Integration



ThousandEyes Integration



Endpoint Agent – Configuration

Monitor the Collaboration experience with Dynamic Tests

- An Account token will be used to enable ThousandEyes on the org level in **Webex Control Hub**
- Generate the OAuth token from your ThousandEyes portal.
- Browse to Account **Settings** → **users and Roles** → **OAuth Bearer Token**

1

2

3

Store the OAuth token securely. If token lost
a new key need to be generated

Endpoint Agent – Configuration

Monitor the Collaboration experience with Dynamic Tests

- **Connection String** is needed to register the endpoints agents on the **RoomOS/PhoneOS** devices to the relevant account group (ThousandEyes tenant)
- **Agent Settings> Add New Endpoint Agent**

☒ **Endpoint Agent**
(Recommended) Full featured endpoint agent.

☐ **Endpoint Agent Pulse**
Endpoint agent not including support for browser-based data collection.

Windows
Windows 10 or higher. Browser Session Data requires Google Chrome 41+, Internet Explorer 11+ or Microsoft Edge 79+
SHA256:16a133eeaab84a891cbb... MSI (x64): [Download](#)
SHA256:cd973baa6f394503f790... MSI (x86): [Download](#)

Mac
macOS 11 (Big Sur) or higher. Browser Session Data requires Google Chrome 41+ or Microsoft Edge 79+
SHA256:82d228d850919068957... PKG (x64): [Download](#)

1

→

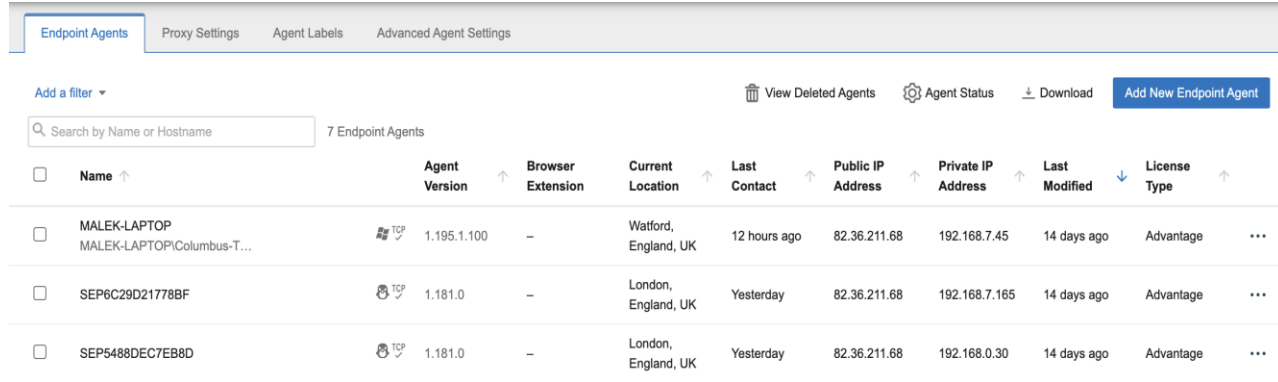
Agent Reinstallation Key
..... [Regenerate New Key](#)
The agent reinstallation key is unique for the entire account. As explained [here](#), using this key in the installation process will merge new agents with the corresponding existing agents, if they share the same hostname.

Connection String
S3FD77CY+VOrk+4fbbgjBd2vdIOJW4cHlnb1gBG5sxCu7TQfO2hVq7p8w0yKjli/OgHVrAIBLCQCQ4ByZRI [Copy](#)
The connection string is used for some integrations and other client types.

Endpoint Agent – Configuration

Monitor the Collaboration experience with Dynamic Tests

- After installing **Endpoint Agents on Mac/PC or the RoomOS devices**, you will find them listed under **Endpoint Agents -> Agents Settings**.
- They will be listed using **SEP<Ethernet MAC Address>**



The screenshot shows the 'Endpoint Agents' tab in a configuration interface. It includes a search bar, a table of agents, and various action buttons. The table lists three agents with their names, versions, browser extensions, locations, last contact times, IP addresses, and last modified dates.

Name	Agent Version	Browser Extension	Current Location	Last Contact	Public IP Address	Private IP Address	Last Modified	License Type
MALEK-LAPTOP MALEK-LAPTOP\Columbus-T...	1.195.1.100	-	Watford, England, UK	12 hours ago	82.36.211.68	192.168.7.45	14 days ago	Advantage
SEP6C29D21778BF	1.181.0	-	London, England, UK	Yesterday	82.36.211.68	192.168.7.165	14 days ago	Advantage
SEP5488DEC7EB8D	1.181.0	-	London, England, UK	Yesterday	82.36.211.68	192.168.0.30	14 days ago	Advantage

- **Win/Mac** agent need to be installed manually or via your account groups
- **RoomOS** agents are part of RoomOS software

Endpoint Agent – Configuration

Monitor the Collaboration experience with Dynamic Tests

Endpoint Agent Dynamic tests are a combination of dynamic and scheduled tests that are pre-configured in a template for corresponding applications.

- Click the Monitor Application under Test Settings → Synthetic Tests.

The top screenshot shows the Cisco ThousandEyes Endpoint Agents interface. The left sidebar has a menu with 'Test Settings' circled in blue with a '1' and an arrow pointing to it. The main panel has the 'Synthetic Tests' tab selected, and the 'Test Labels' section has a blue '2' and an arrow pointing to it. The 'Monitor Application' button is circled in blue with a '3' and an arrow pointing to it. The bottom screenshot shows the 'Monitor Application' dialog box with a grid of application templates. The 'Webex' template is highlighted with a blue box and an arrow pointing to it from the 'Monitor Application' button in the top screenshot.

Endpoint Agent – Configuration

Monitor the Collaboration experience with Dynamic Tests

Endpoint Agents

Cloud & Enterprise Agents > Endpoint Agents > Overview Views Agent Views **Test Settings** Agent Settings Devices Internet Insights Dashboards Alerts 2 Integrations Sharing Account Settings

Synthetic Tests Real User Tests

Tests Test Labels

4 tests Search... Add Filter

Test Name	Type	Target
Webex (VIMT, VMN, WxC) - Dynamic	Dynamic	Webex

Edit Test

Basic Configuration Advanced Settings

Test Name: Webex (VIMT, VMN, WxC) - Dynamic

Target: Webex

Which agents should we send data from? All agents

☒ Prioritize this test for the selected agents

How often should we run tests? 1 minute

Maximum number of agents per test: 5000

5 AGENTS ASSIGNED, 4 AGENTS RUNNING THE TEST

Agent	Tests Running
OILYAS-M-Y2R6	4
SEP689E0BAFFD73	4
SEP845A3EC217AE	4
MALEK-LAPTOP	3
SUGOGINE-M-7XNV	3

Webex Integration



Endpoint Agent – Configuration

Monitor the Collaboration experience with Dynamic Tests

Ensure that the [Webex org](https://www.webex.org) have ThousandEyes enabled (org level toggle)

- On Control Hub, navigate to [Organisation Setting](#) -> [ThousandEyes](#)
- Paste the Account Token that was copied from the [ThousandEyes](#) portal.

The screenshot shows the 'webex Control Hub' interface. On the left, a sidebar lists 'MANAGEMENT' options: Users, Groups, Locations, Workspaces, Devices, Apps, Account, and 'Organisation settings' (highlighted with a blue arrow and circled '1'). Below this is a 'SERVICES' section with options like Updates & Migrations, Messaging, Meeting, Calling, and boldbetz. The main content area is titled 'Organisation settings' and has tabs for 'Settings', 'Templates', and 'Beta'. Under the 'Settings' tab, there are two columns: 'Mobile' and 'Desktop'. The 'Auto extend refresh token' toggle is turned on for both. The 'Refresh token TTL' is set to 1440 hours for both. The 'Max. num of refresh tokens' is set to 100 for both. The 'Access Token TTL' is set to 720 minutes for both. A 'Save' button is at the bottom of this section. Below the settings, there is a 'ThousandEyes' section with the text 'Set up ThousandEyes integration for troubleshooting.' and a toggle for 'Allow ThousandEyes API access' which is turned on (indicated by a blue arrow and circled '2'). To the right of this toggle, it says 'Providing OAuth bearer token will allow ThousandEyes for troubleshooting.' An 'Activate ThousandEyes network path feature' dialog box is open on the right, showing a message about activating the feature and a field for the 'OAuth bearer token' (indicated by a blue arrow and circled '3'). The dialog has 'Cancel' and 'Activate' buttons.

Endpoint Agent – Configuration

Monitor the Collaboration experience with Dynamic Tests

Connection String will allow the Endpoint agents on the RoomOS/PhonesOS devices to start the provisioning flow with ThousandEyes service and start relaying data. To enable

- Navigate to **Devices->Settings -> ThousandEyes**
- Enable ThousandEyes Agent toggle

The screenshot shows the Cisco Webex Control Hub interface. On the left, the navigation menu is visible with sections: Overview, Alerts centre, MONITORING (Analytics, Troubleshooting, Reports, Customer Journey Data), MANAGEMENT (Users, Locations, Workspaces, **Devices**, Apps, Account, Organisation settings), and SERVICES. A blue circle with the number '1' and an arrow points to the 'Devices' option in the MANAGEMENT section. The main content area is titled 'Devices' and has tabs for Devices, Templates, **Settings**, Software, and Resources. Under the 'Settings' tab, there is a section for 'ThousandEyes'. It includes a toggle switch for 'Enable ThousandEyes Agent' which is turned on. Below the toggle, it says 'Connection String active' with an 'Edit' button. A blue arrow points to the 'Edit' button. Below this, there is a description: 'Allows the ThousandEyes Agent to be activated as part of an account group.' and a section for 'Supported devices' listing 'Room, board and desk series'. Below the ThousandEyes section is a section for 'Digital signage, Appspace' with an 'APPSPACE' logo. It describes Appspace as a digital signage service and includes a toggle for 'Enable Appspace' which is currently turned off.

*** All newly added devices will also have the ThousandEyes agent enabled as well.**

Endpoint Agent – Configuration

Monitor the Collaboration experience with Dynamic Tests

- Once the **ThousandEyes Agent** is activated, you can visit the ThousandEyes portal to ensure the agent is registered. Alternatively, you can click on the **device** and check the **status section** for the information.

The screenshot displays the Cisco ThousandEyes Control Hub interface. The left sidebar contains navigation menus for Overview, Alerts centre, MONITORING (Analytics, Troubleshooting, Reports, Customer Journey Data), MANAGEMENT (Users, Groups, Locations, Workspaces, **Devices**, Apps, Account, Security, Organisation settings), and boldbetz. The main content area is titled 'Cisco Desk P...' and includes sections for Latest Channel, Version, Alerts (Not monitored), and Tags. The right sidebar shows Web apps, Macros, Support (Device logs, Local Device Controls, Cisco Support), and a Statures overview section. In the Statures overview, the 'Audio Microphones Mute' status is 'Off' and 'ThousandEyes Status' is 'Enabled', with a blue circle and arrow highlighting the 'Enabled' status.

Enablement – Individual Devices



Endpoint Agent Configuration – Individual Devices

Monitor the Collaboration experience with Dynamic Tests

The screenshot shows the Cisco Webex Control Hub interface. On the left is a navigation sidebar with sections: Overview, Alerts centre, MONITORING (Analytics, Troubleshooting, Reports, Customer Journey Data), MANAGEMENT (Users, Groups, Locations, Workspaces, **Devices**, Apps, Account, Organisation settings), and SERVICES. The main content area is titled 'Devices' and has tabs for Devices, Templates, Settings (selected), Software, and Resources. Under the 'Settings' tab, there are two main sections. The first is 'ThousandEyes', which includes a description, a description of the solution, and a description of supported devices. It features a toggle for 'Enable ThousandEyes Agent' (currently off) and a status indicator 'Connection String not set' with an '+ Add' button. The second section is 'Digital signage, Appspace', which includes a description of Appspace, a link to 'Read more about Appspace', and a toggle for 'Enable Appspace' (currently off).

Endpoint Agent Configuration – Individual Devices

The screenshot shows the Cisco ThousandEyes MTR Device configuration page. The left sidebar contains a navigation menu with sections: Overview, Alerts centre, MONITORING (Analytics, Troubleshooting, Reports, Customer Journey Data), and MANAGEMENT (Users, Groups, Locations, Workspaces, **Devices**, Apps, Account, Security, Organisation settings). The 'Devices' menu item is highlighted with a blue circle and the number '1'. The main content area is titled 'Cisco Desk Pro' and shows details for a device with IP address 192.168.0.30 and MAC address 54:8B:DE:C7:EB:8D. The 'Configurations' section on the right is highlighted with a blue circle and the number '2', and a blue arrow points from it to the 'Select configurations' dialog box.

The screenshot shows the 'Select configurations' dialog box. The dialog has a title 'Select configurations' and a subtitle 'Select one or more configurations to apply to the selected device.' The breadcrumb trail is 'All > ThousandEyes > ConnectionString'. The 'ConnectionString' configuration is shown with a table of supported device types and configuration values. The 'Configuration value' field is highlighted with a blue circle, and a blue arrow points from the 'All configurations' link in the first screenshot to this dialog box.

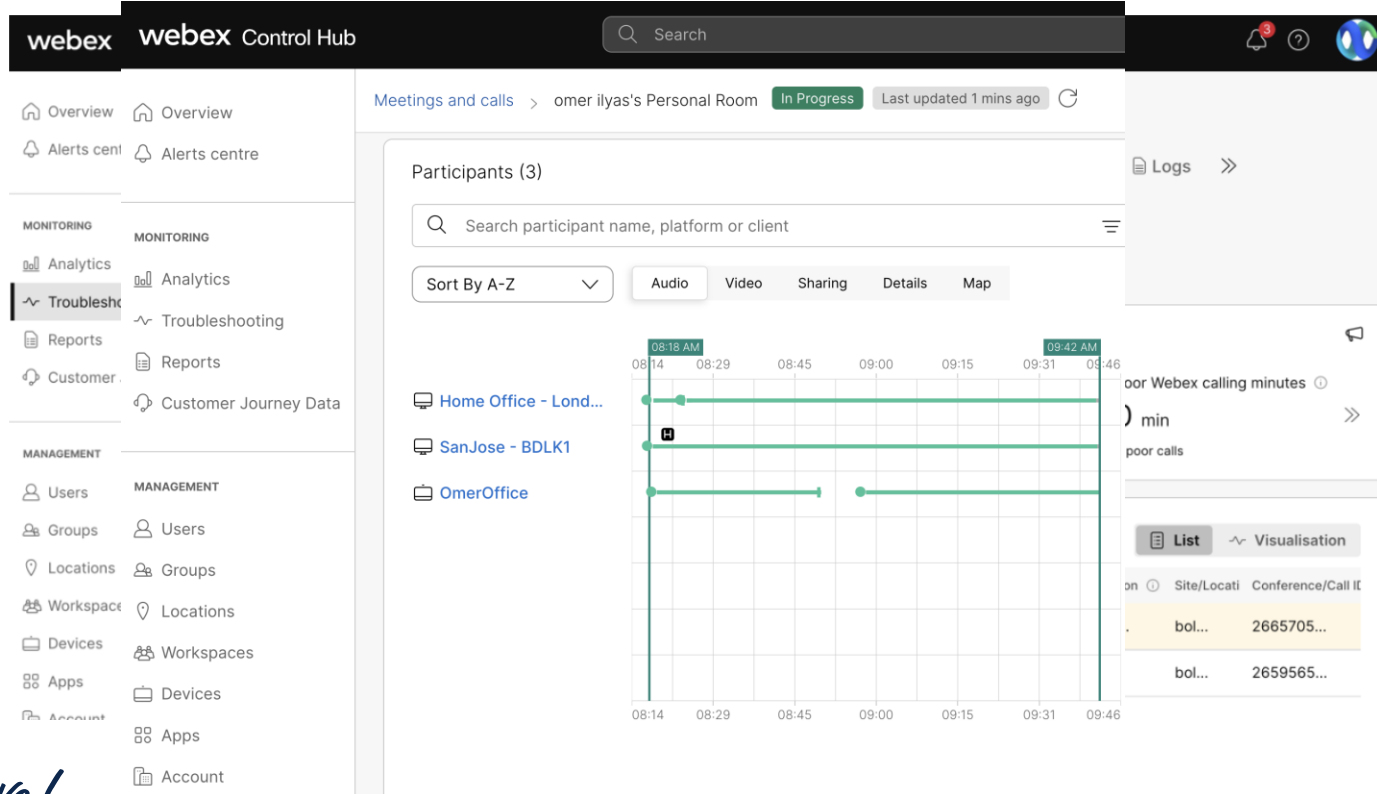
Supported device types	Configuration value	Default	Undo
Cisco Desk Pro	S3FD77CY+V0rk+4fbgjBd2vdlOJW4&	Organisation	S3FD77CY+V0rk+4f...

Troubleshooting in Control Hub and ThousandEyes



Endpoint Agent – Troubleshooting

Monitor the Collaboration experience with Dynamic Tests



Endpoint Agent – Troubleshooting

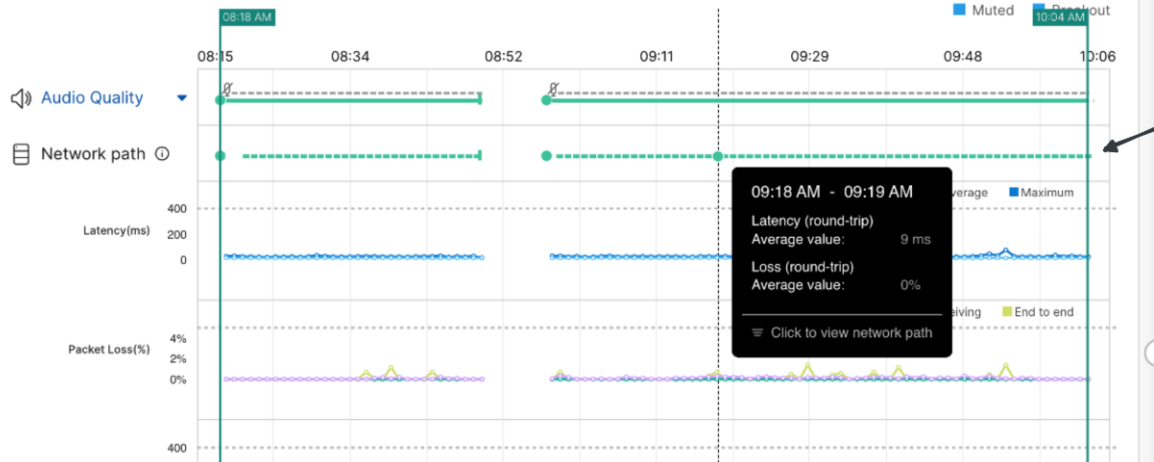
Monitor the Collaboration experience with Dynamic Tests

Meetings and calls > omer ilyas's Personal Room > OmerOffice

Join the Me...

Actions

Participant Details - OmerOffice



Hoovering over the dotted line will display latency/loss. The color changes depending on the threshold that the value meet

Poor (red) | Latency > 400ms or Loss > 5%

Good | Latency < 300ms or Loss < 3%

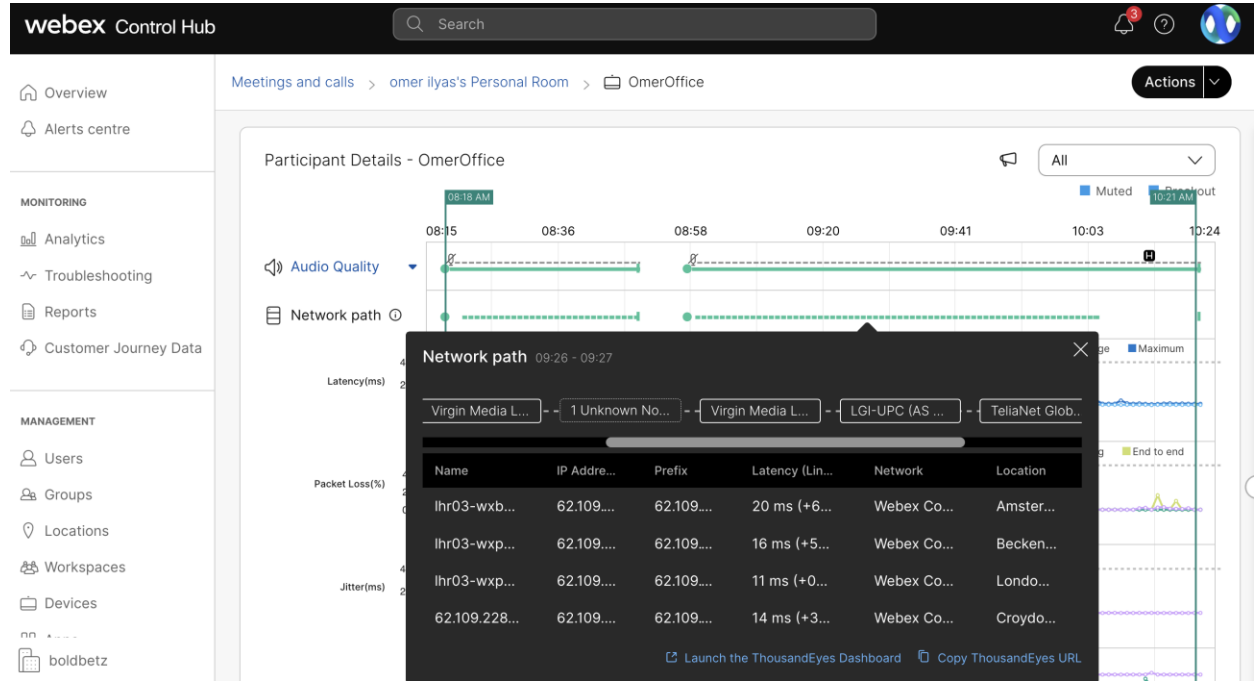
Fair | Neither of the above

Unknown | Data isn't available from ThousandEyes to Control Hub.

Endpoint Agent – Troubleshooting

Monitor the Collaboration experience with Dynamic Tests

- By clicking on the **dotted line** in the **network path**, you can access in-depth information about the path route that the hop took to reach **each node**.
- Clicking on **Launch the ThousandEyes Dashboard** will cross launch and take you to the ThousandEyes portal

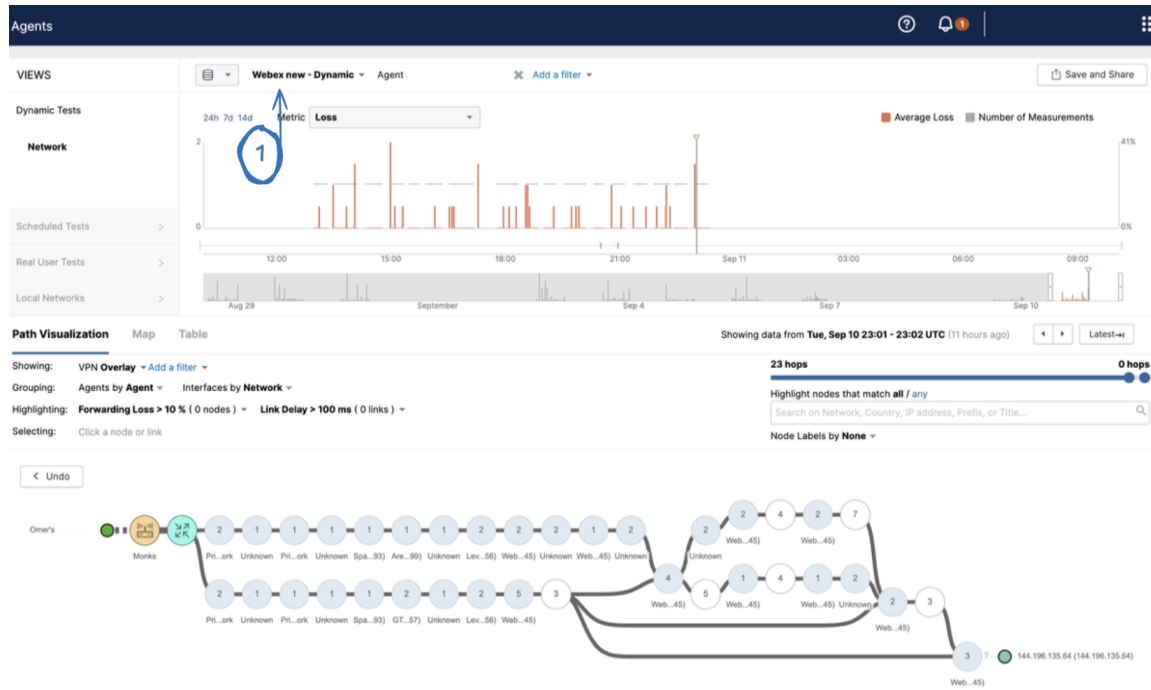


Endpoint Agent – Troubleshooting

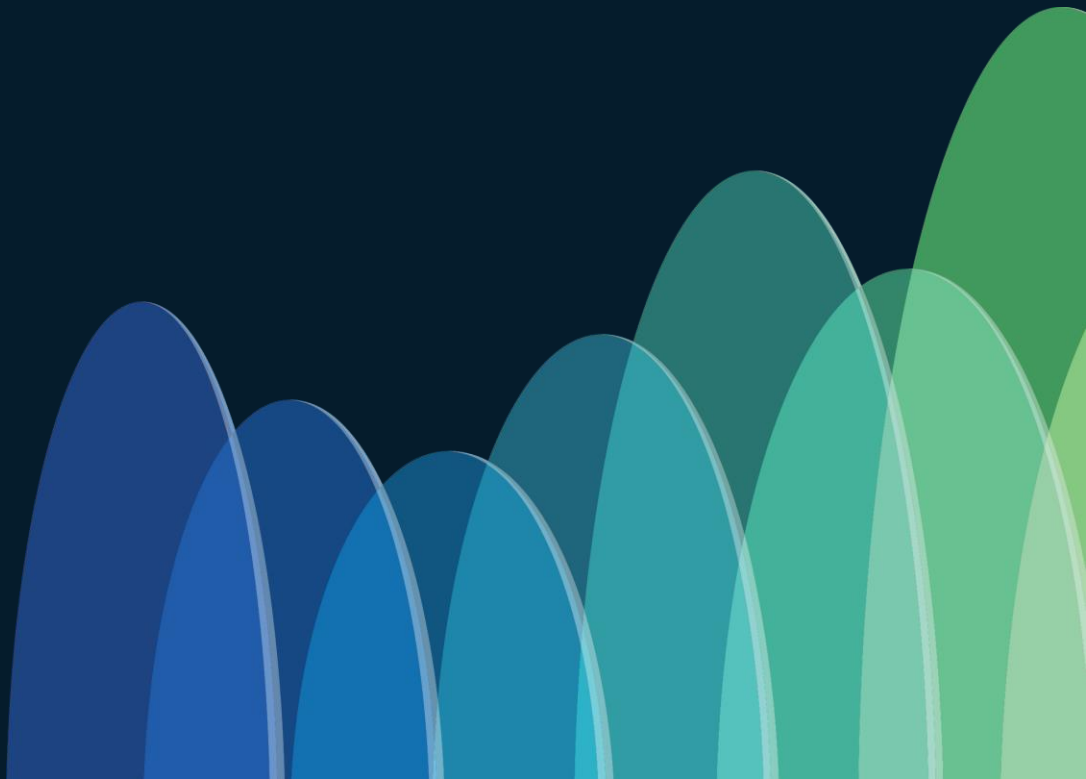
Monitor the Collaboration experience with Dynamic Tests

- After cross-launching to [ThousandEyes](#) from [Control Hub](#) the details of the Active monitoring by ThousandEyes can be examined.
- The top section is used to filter for the right results

Multiple filters can be active at the same time.



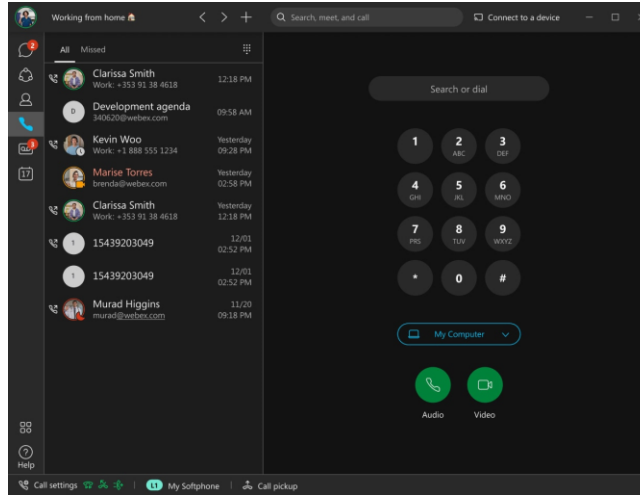
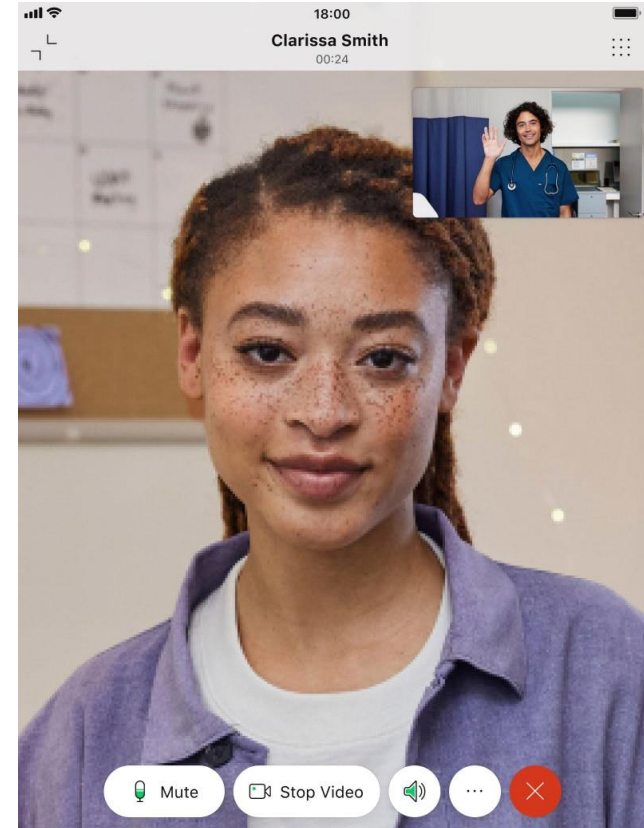
Webex Calling



Webex Calling

Enterprise grade Calling Features

- Easy to use and secure
- Centralised Management
- Hybrid deployments and Flexible Options
- API enabled



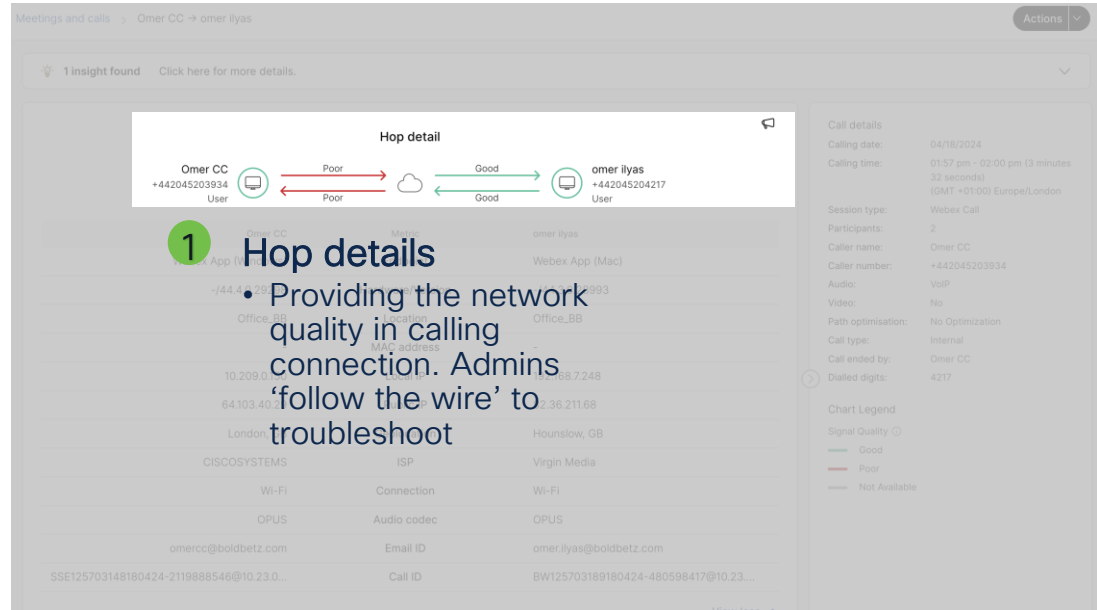
How admins troubleshoot?



Admins current approach

What we provide now

Hop details



Admins current approach

What we provide now

Client details

The screenshot displays a Cisco Webex interface for a call between Omer CC and omer.ilyas. A 'Hop detail' table is visible, showing various metrics for both endpoints. To the right, a 'Call details' panel provides additional information about the call session.

Omer CC	Metric	omer.ilyas
Webex App (Windows)	Endpoint	Webex App (Mac)
~/44.4.0.29298	Hardware/Version	~/44.3.0.28993
Office_BB	Location	Office_BB
-	MAC address	-
10.209.0.150	Local IP	192.168.7.248
64.103.40.29	Public IP	82.36.211.68
London, GB	Geolocation	Hounslow, GB
CISCO SYSTEMS	ISP	Virgin Media
Wi-Fi	Connection	Wi-Fi
OPUS	Audio codec	OPUS
omercc@boldbetz.com	Email ID	omer.ilyas@boldbetz.com
SSE125703148180424-2119888546@10.23.0...	Call ID	BW125703189180424-480596417@10.23...

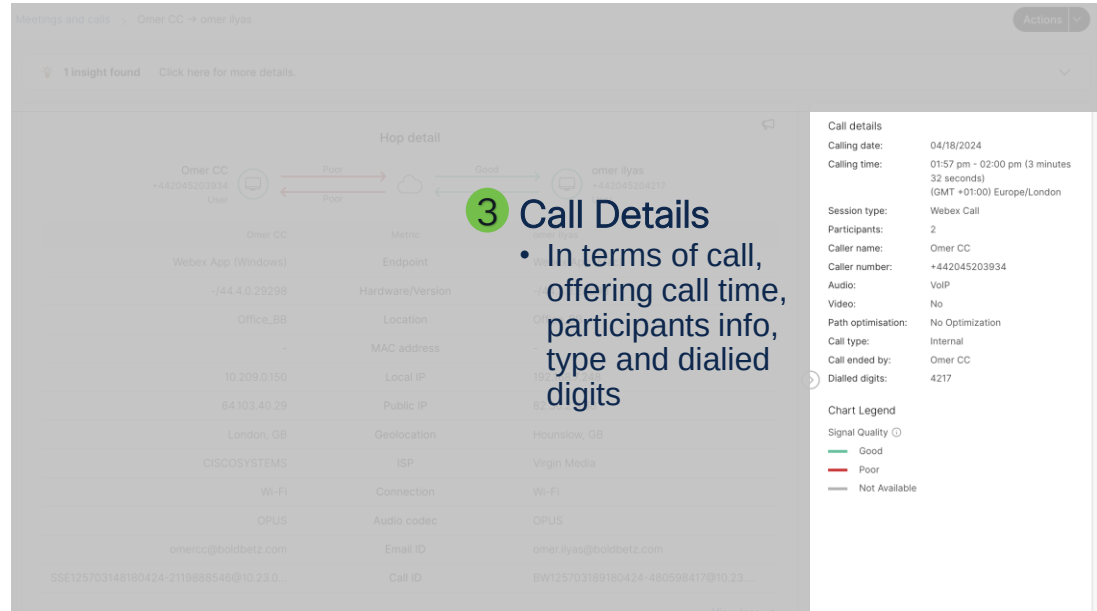
Call details
Calling date: 04/18/2024
Calling time: 01:57 pm - 02:00 pm (3 minutes 52 seconds)
GMT +01:00 Europe/London
Session type: Webex Call
Participants: 2

- 2
- ### Client Details
- Offering detail data include client address, platform, and connections information

Admins current approach

What we provide now

Call details

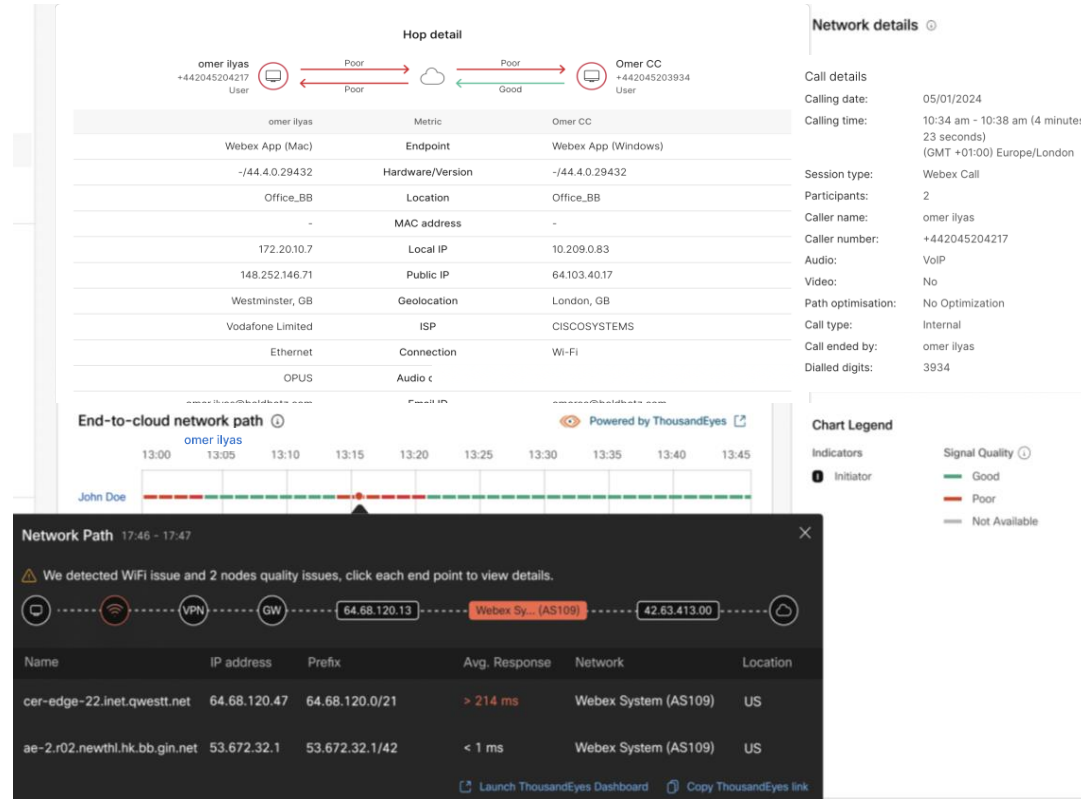


Troubleshooting in Control Hub / ThousandEyes



End-to-End Cloud Network Path

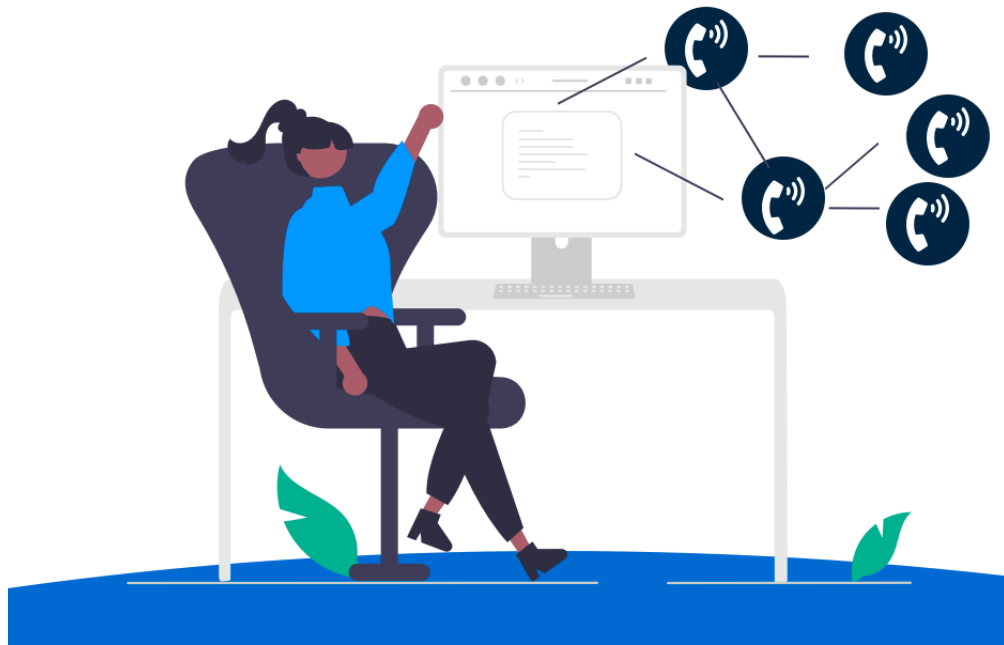
- As mentioned in the meetings we know ThousandEyes integration enhances network diagnostics, providing administrators with comprehensive hop-by-hop connection data for troubleshooting local error calls, including details on Wi-Fi, VPN, local gateway, and media nodes to cloud information.
- To enable TE for [Calling](#), we are leveraging existing onboarding authorisation process
 - [Bearer Token](#)
 - [Connection String](#)
 - [Dynamic Tests](#)



ThousandEyes data is not applicable for all Webex Calling calls

For example, if the call is established within the same network, it might be considered an **ICE optimised call** that does not pass through the Webex Calling cloud. Consequently, the ThousandEyes path will not be visible in this scenario. There are a few distinct calling scenarios:

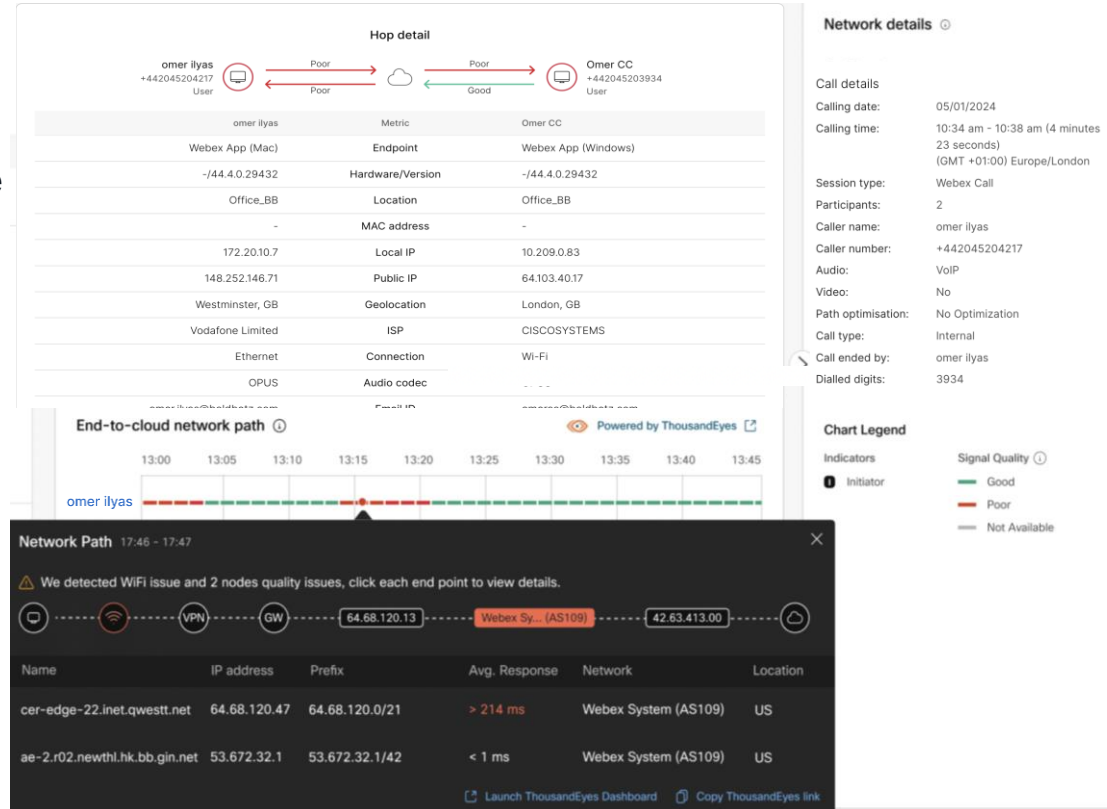
- Enterprise call through the cloud,
 - **ICE Optimised call**,
 - Different Network
- Cloud hosted Media
 - auto attendant
 - voicemail,
- Off-net call
 - PSTN



Enterprise Cloud Calls

Not ICE Optimised

These are two enterprise users, and the media flows through the **Webex Calling Cloud**. A ThousandEyes agent can be inserted on any client side to test reachability.



Enterprise Cloud Calls

ICE Optimised – Same Network

The media flow is directly between two users, this is an ICE optimised call.

We offer client-side node details, encompassing end-to-end audio network metrics experience.

ThousandEyes path will not be visible

Hop detail

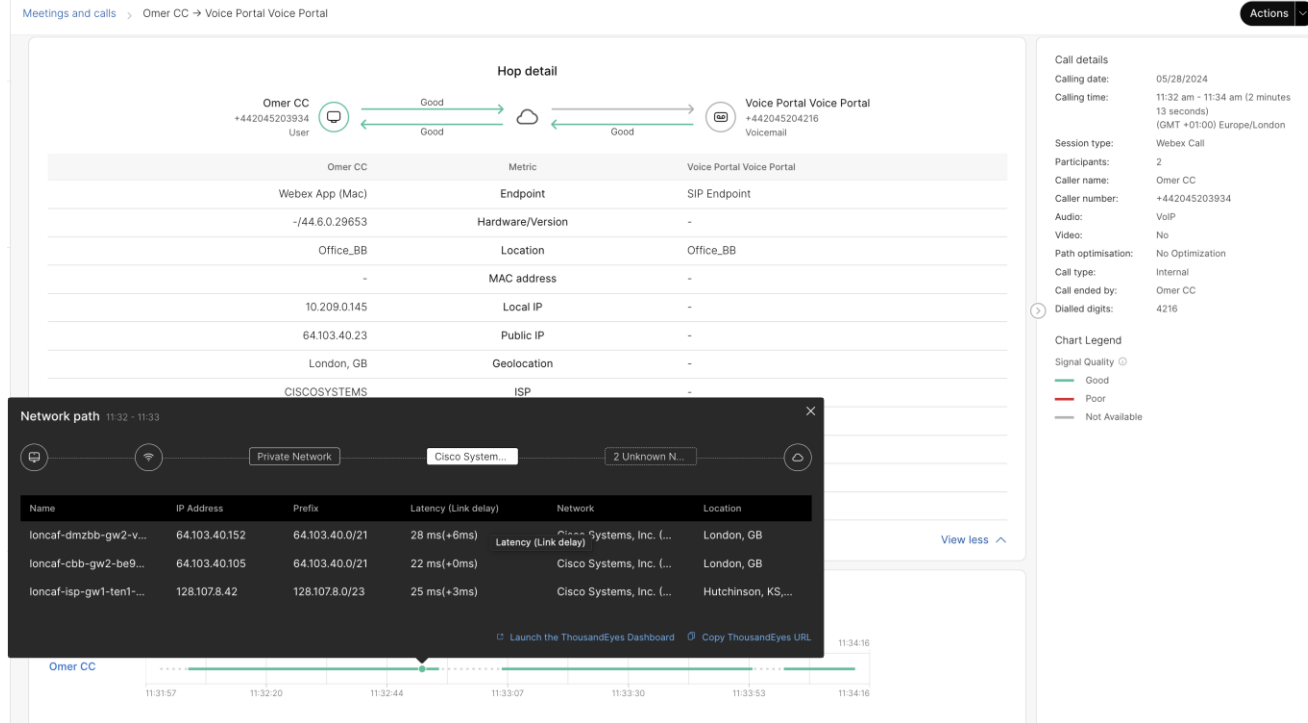
Omer CC		omer ilyas
Webex App (Windows)		Webex App (Mac)
-/44.4.0.29298	Hardware/Version	-/44.3.0.28993
Office_BB	Location	Office_BB
-	MAC address	-
192.168.7.45	Local IP	192.168.7.248
82.36.211.68	Public IP	82.36.211.68
Hounslow, GB	Geolocation	Hounslow, GB
Virgin Media	ISP	Virgin Media
Wi-Fi	Connection	Wi-Fi
OPUS	Audio codec	OPUS
omercc@boldbetz.com	Email ID	omer.ilyas@boldbetz.com
SSE125232040180424454676861@10.23.0.4	Call ID	BW125232074180424251795421@10.23.0...

Hop info is not applicable for ICE calls. Hover over the participant name to see experience data.

Cloud Hosted Media

Auto Attendant / Voicemail

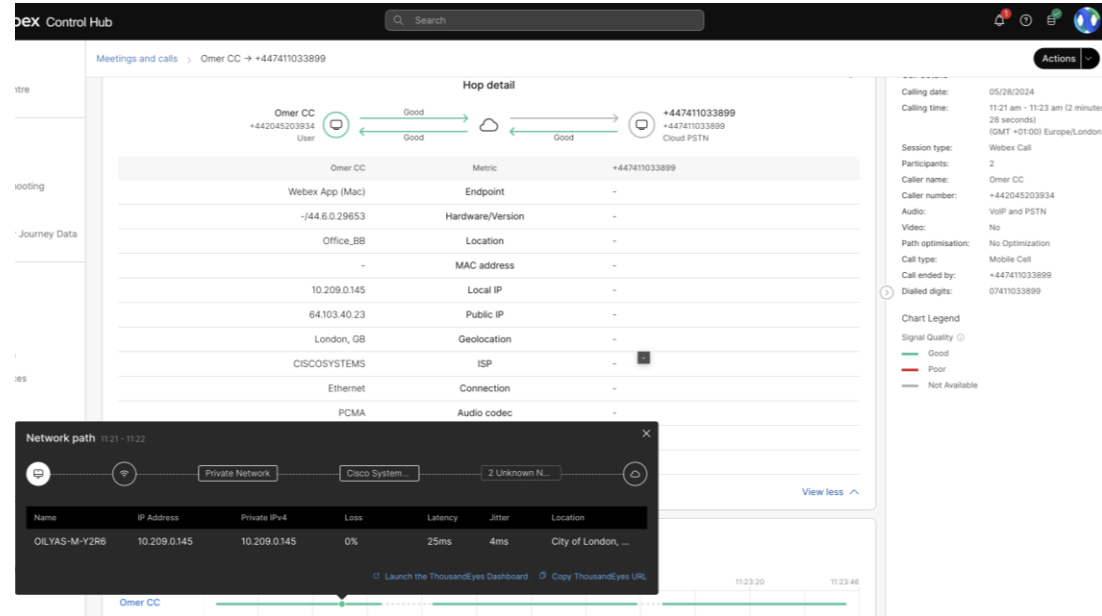
In this scenario, the user is connected to a **voicemail** or an **auto attendant**, receiving media hosted in the cloud. ThousandEyes can test network quality from the user side to the cloud edge, including cloud-hosted media such as auto attendant, voicemail, or conferencing.



Off-net Calls

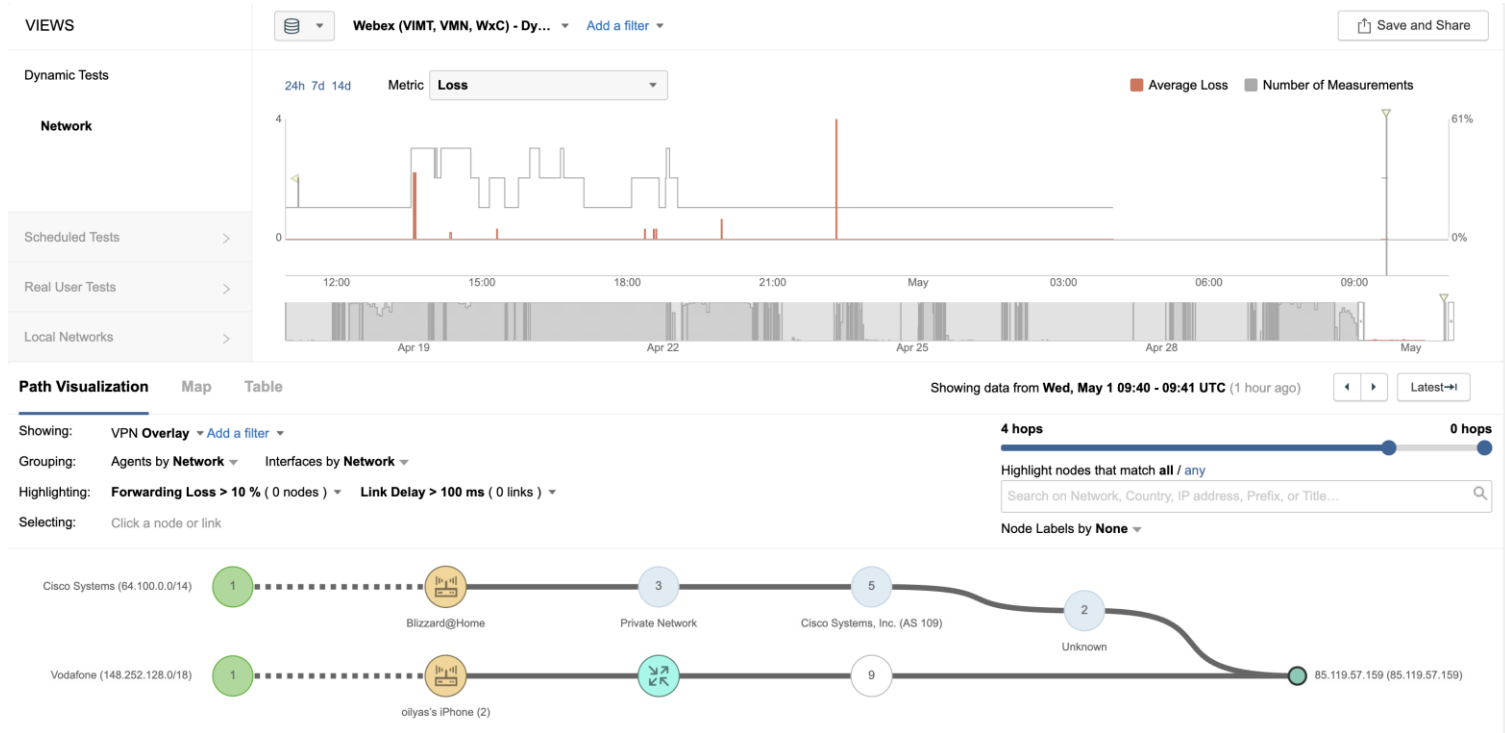
PSTN

This is the example that user is calling outside of Webex calling to the **PSTN network**. User A making a call to a PSTN number, PSTN is provided by a local gateway or CUBE (cloud connected PSTN)

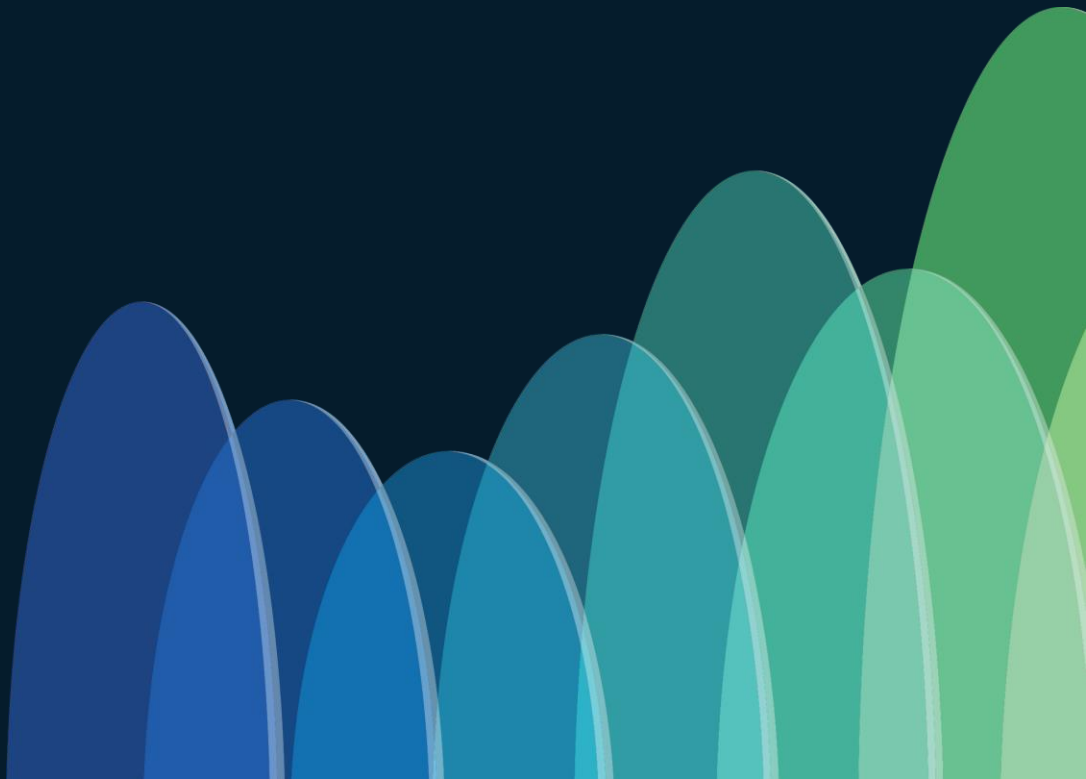


ThousandEyes visibility

Cross Launch



ThousandEyes for Phone OS – Beta Feature(*)

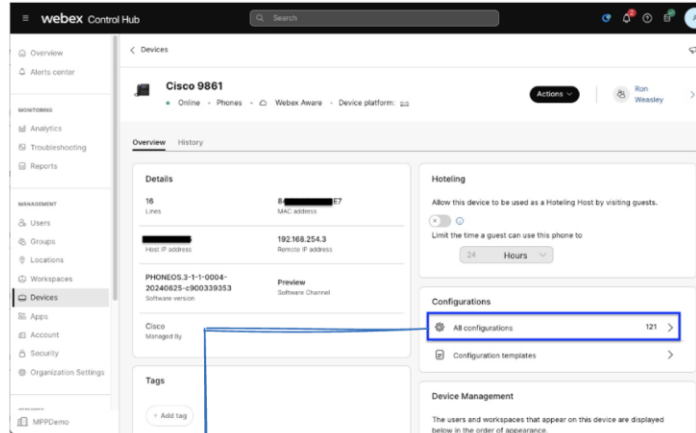
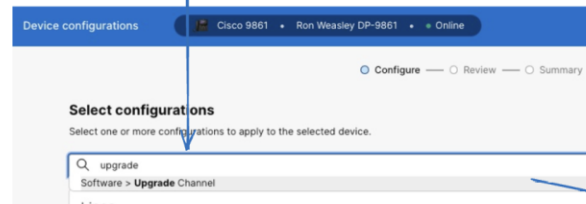
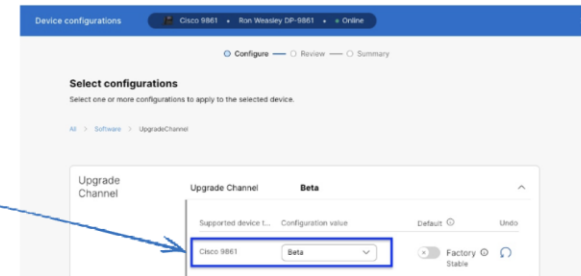


Checking Phones Firmware to enable Thousand Eyes



Configuration Phones

- Search for the **Device**
- Under Configurations select **All Configurations**
- Search or Browse to **Upgrade** → **Software**
- Change the upgrade channel to **Beta**
- If you don't see the Beta channel, ensure that you've signed up for Beta access.



Testing Calls from PhonesOS



Interpreting ThousandEyes Path visualisation

- Once a Phone OS joins a meeting/call the details can be monitored in Control Hub and the ThousandEyes portal.
- Webex meetings, SIP calls and cloud-hosted media such as auto attendant, voicemail, or conferencing calls appear

Troubleshooting

Meetings and callsLive meetingsStatusAdmin activitiesConnected UCLogsWatermark analysis

1 Call

Last 7 Days 09/06/2024 → 09/12/2024 (GMT +01:00) Europe/London

omer ilyas DP-9861



Status: Online

Owner: omer ilyas

Email Address: omer.ilyas@boldbetz.com

Product Name: Cisco 9861

Device Platform: CISCO

Location: Bedfont, London, GB

Details

Wired Network Connectivity	845A3EC217AE MAC Address	FVH280322G6 Serial Number
Phones Type	192.168.0.105 IP Address	omer.ilyas@boldbetz.calls.webex.com SIP Address
N/A RoomOS release	PHONEOS.3-2-1-0001-20240828-7... Software version	Latest Software channel

Meetings with poor quality 0

Calls on Webex with poor quality 0

Webex callings with poor quality 0 out of 1

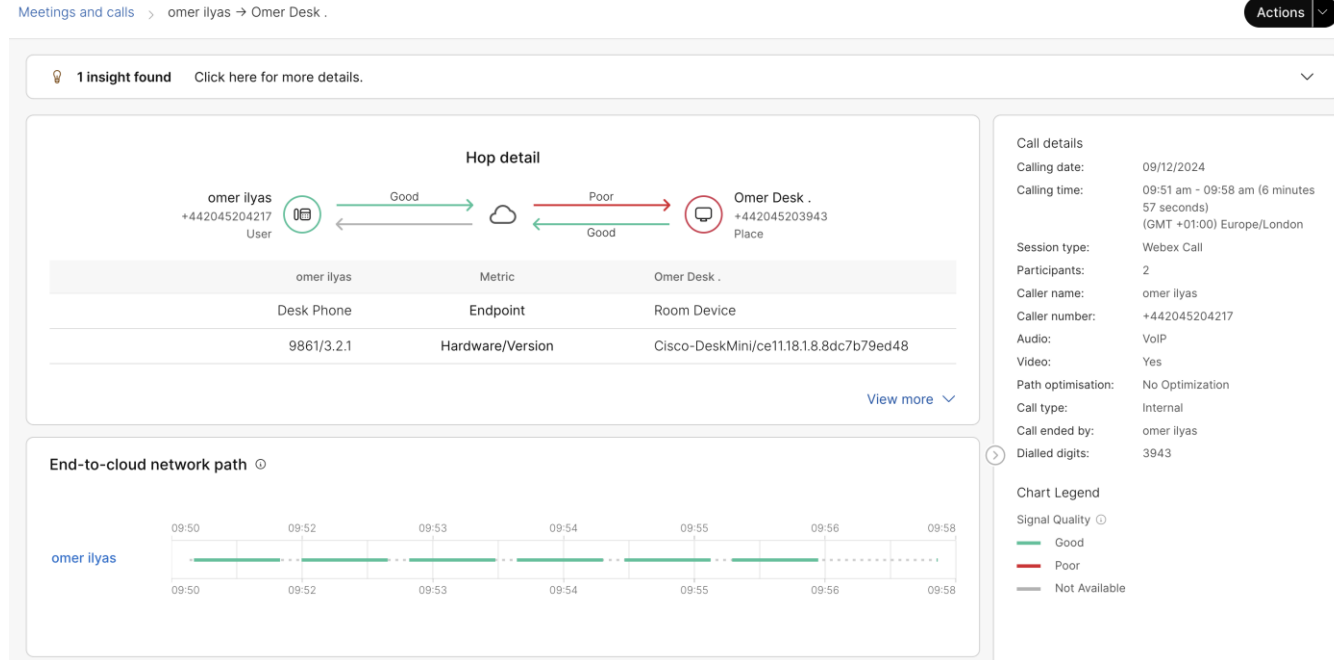
WebRTC with poor quality 0

All meetings and calls

Overall	Quality	Service	Start Time	Meeting/Caller numb	Name	Host/Caller	Participants	Duration	Site/Locatio	Conference/Call ID
Poor	Good		2024-09-12 09:51:03 ...	+44204520...	omer ilyas → Omer...	omer ilyas	2	06:57	Offic...	wxcid_v7_57382faa...

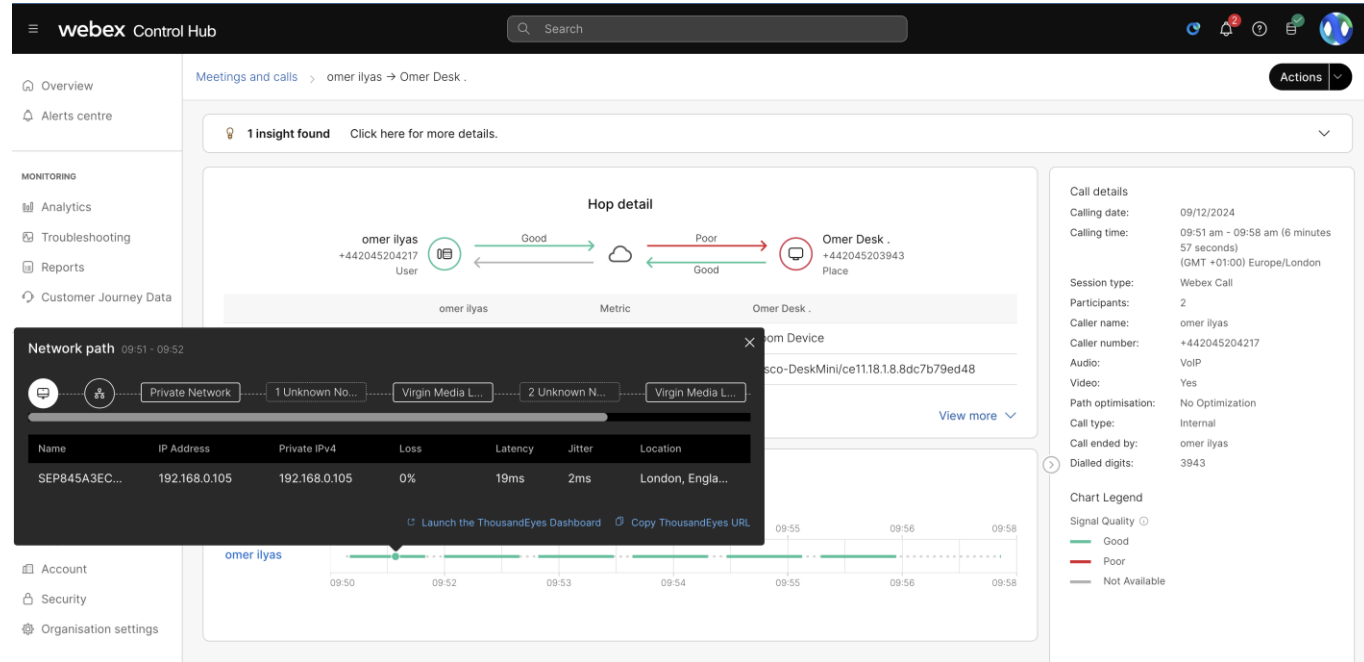
Interpreting ThousandEyes Path visualisation

- Once a Phone OS joins a meeting/call the details can be monitored in Control Hub and the ThousandEyes portal.
- Webex meetings, SIP calls and cloud-hosted media such as auto attendant, voicemail, or conferencing calls

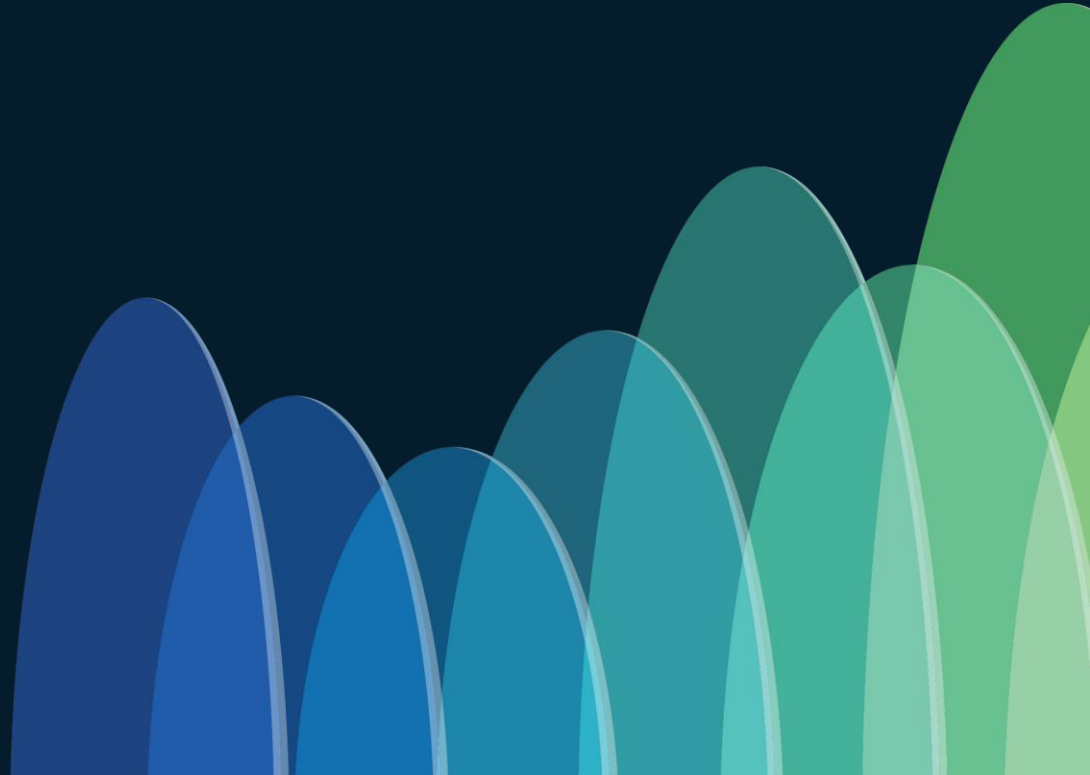


Interpreting ThousandEyes Path visualisation

- Click on [Launch the ThousandEyes Dashboard](#).



Cisco + Microsoft (VIMT/MTR)



RoomOS: Choose your experience

Cisco Devices experience 



Open Platform strategy

OR

Microsoft Teams Rooms experience 

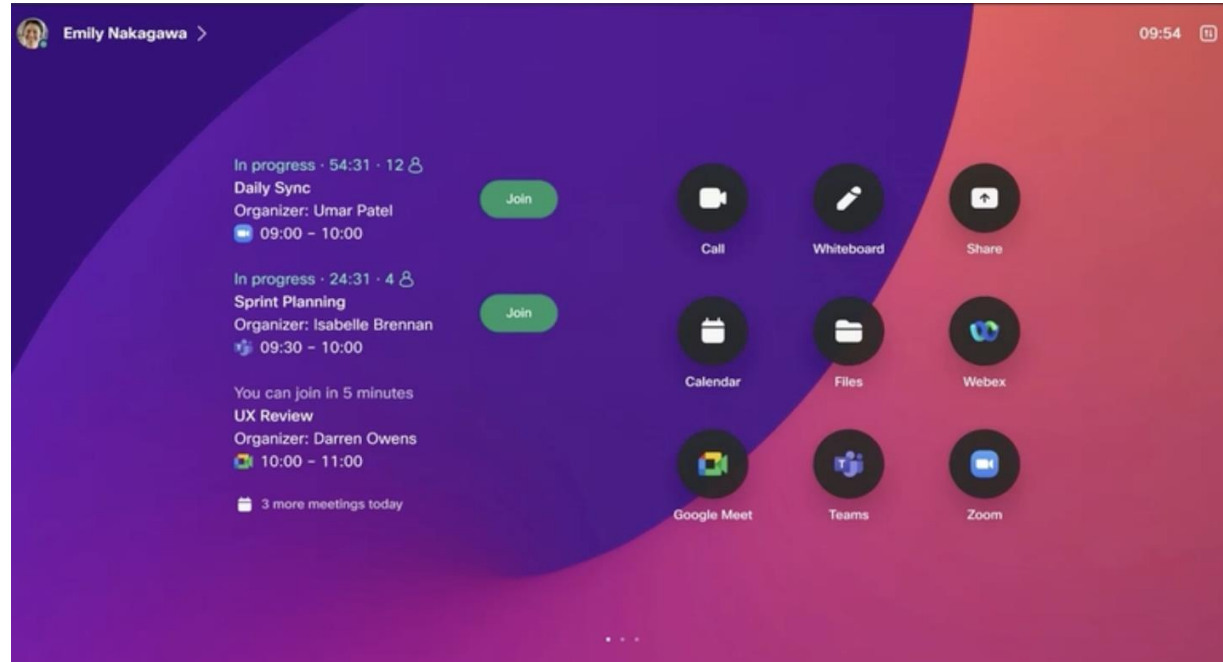


Cisco Devices for Microsoft Teams

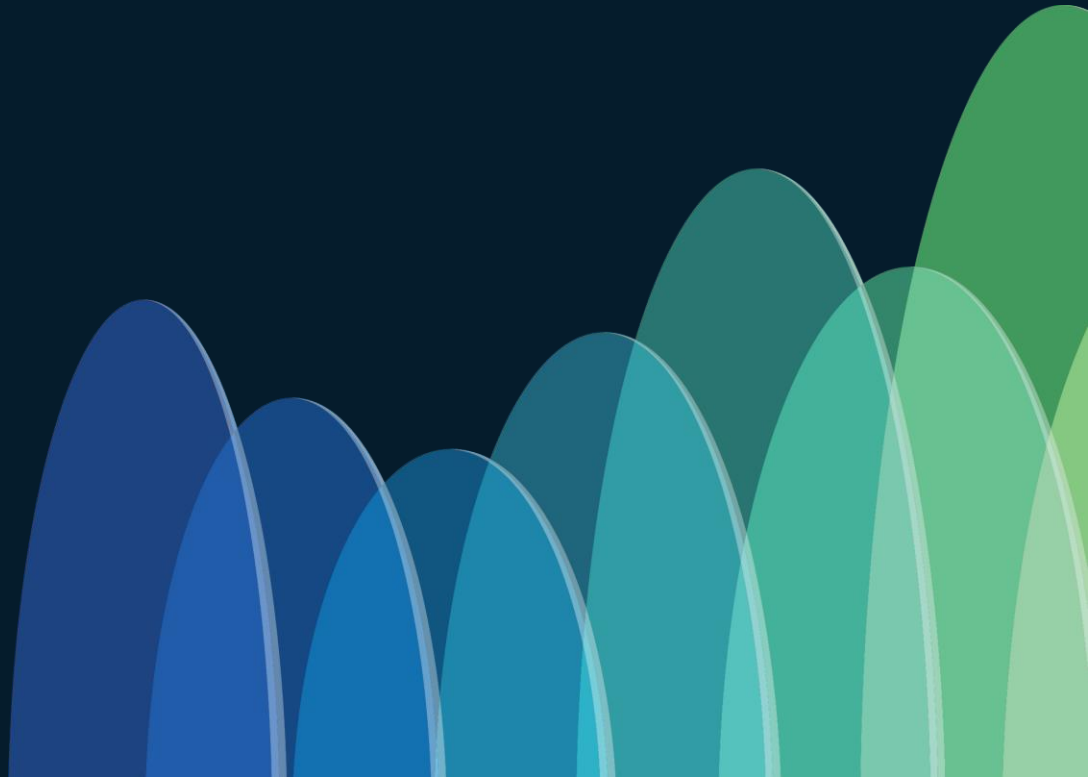
Same device, powered by Cisco RoomOS

RoomOS: Choose your experience

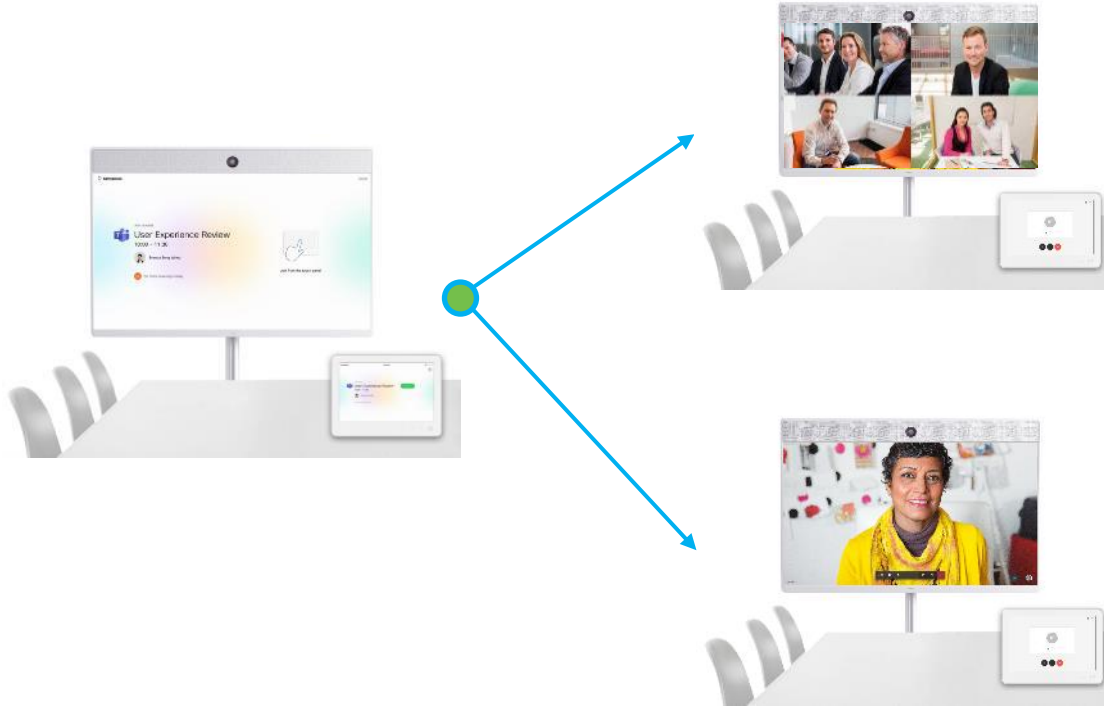
- Our Open platform strategy
- We can join any meeting e.g. VIMT or Webrtc



Video Integration with Microsoft Teams(VIMT)



Cisco Devices joining Microsoft Teams meetings



SIP-capable video endpoints can join Microsoft Teams meetings (hosted by my company) via VIMT (CVI)

Richer, seamless meeting experience, without requiring 3rd party interop

Cisco web-engine capable devices can join B2B Microsoft Teams meetings

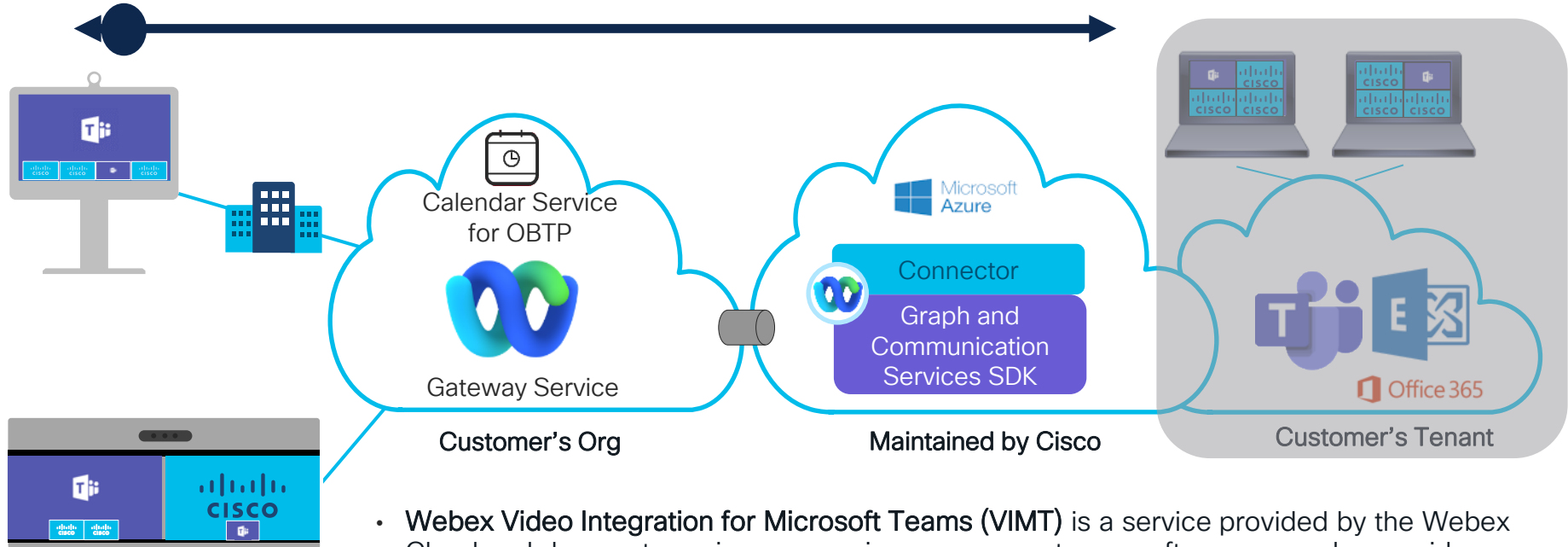
GA NOW

Limited experience on Cisco devices using Microsoft Teams meeting web app

Video Integration with Microsoft Teams(VIMT) – Architecture



Video Integration for Microsoft Teams gateway



- **Webex Video Integration for Microsoft Teams (VIMT)** is a service provided by the Webex Cloud and does not require on-premises components nor software upgrades on video devices
- **Webex video infrastructure and Microsoft SDK are hosted in Azure and maintained by Cisco** on behalf of customers

Configuration



Pre-requisites and scope

- Integration already configured between Control Hub and ThousandEyes
 - TE Bearer Token
 - Connection String
 - Device Default Parameters Configured (ThousandEyes enabled on RoomOS devices)
 - Dynamic Test for Webex and Microsoft created

* Phase1: Path visualization in ThousandEyes portal Only

* Webex test for Webex flows / Microsoft test for MTR and Webrtc flow

Video Integration with Microsoft Teams(VIMT) with ThousandEyes



Interpreting ThousandEyes for VIMT calls

Monitor the VIMT experience on RoomOS devices

Once a video device joins a meeting the details can be monitored only in the [ThousandEyes](#) portal

Troubleshooting

Meetings and calls

Live meetings

Status

Admin activities

Connected UC

Logs

Watermark analysis

Device = Omer Desk

1 Meeting & 11 Calls

Last 21 Days

04/11/2024 → 05/01/2024

(GMT +01:00) Europe/London

Omer Desk

Status:

Issues

Workspace:

Omer Desk

Product Name:

Cisco Desk Mini

Device Platform:

CISCO

Location:

N/A

Details

Wireless

6C:29:D2:17:78:C0

Network Connectivity

MAC Address

FOC2722HGKU

Serial Number

Rooms & Desks

192.168.7.165

Type

IP Address

omer_desk@boldbetz.rooms.webex....

SIP Address

RoomOS Latest (ce1117.0.7 ec4d45...

RoomOS 1117.0.7 ec4d45129b3

RoomOS release

Software version

Latest

Software channel

Meetings with poor quality

0 out of 1

Calls on Webex with poor quality

0 out of 11

Webex callings with poor quality

0

WebRTC with poor quality

0

>>

All meetings and calls

Overall	Quality	Service	Start Time	Meeting/Caller numb	Name	Host/Caller	Participants	Duration	Site/Locatio	Conference/Call ID
Good	Good	 	2024-05-01 12:19:05 P...	N/A	Omer Desk → MS...	omer_de...	3	In progr...	N/A	10dc9500-3eb6-1a3...

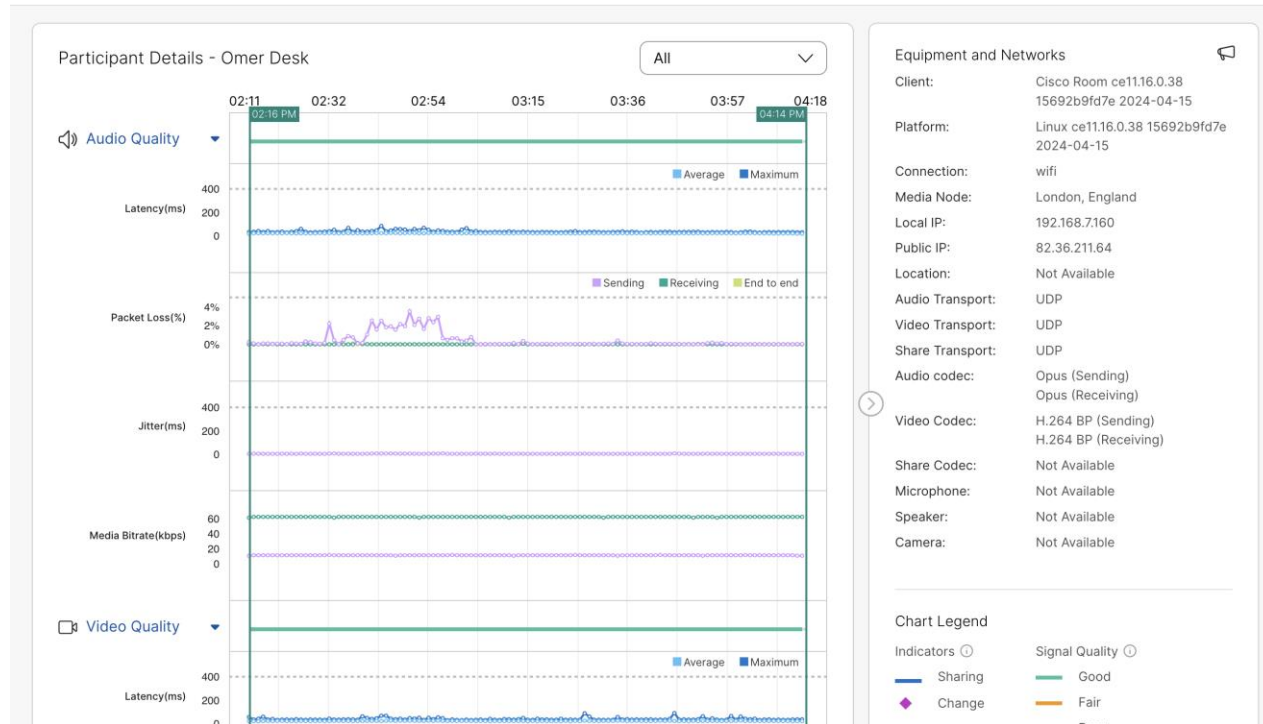
Interpreting ThousandEyes for VIMT calls

Monitor the VIMT experience on RoomOS devices

No **Connection Path** visible
in the Control Hub
(Coming Soon)

Meetings and calls > Omer Desk → MS_Teams_1 > Omer Desk

Actions



Interpreting ThousandEyes for VIMT calls

Monitor the VIMT experience on RoomOS devices

In ThousandEyes portal make sure Dynamic Test for Webex is selected



Cisco Devices using Microsoft Teams meeting web app (WebRTC)



Microsoft Teams meetings – WebRTC

Join with OBTP or Teams RoomOS Button



Join Microsoft Teams

You can find the meeting information in your calendar invite.
e.g. Meeting ID: 123 456 789 123
Passcode: ABCdrFg

WebRTC Configuration



Endpoint Agent – WebRTC Configuration

Monitor the Collaboration experience with Dynamic Tests

Endpoint Agent Dynamic tests are a combination of dynamic and scheduled tests that are pre-configured in a template for corresponding applications.

- Click the Monitor Application under Test Settings → Synthetic Tests.

The screenshot shows the Cisco ThousandEyes Endpoint Agents interface. The left sidebar contains a menu with 'Test Settings' highlighted by a blue circle and arrow labeled '1'. The main content area has a 'Synthetic Tests' tab selected, with 'Test Labels' highlighted by a blue circle and arrow labeled '2'. In the top right corner, a '+ Monitor Application' button is highlighted by a blue circle and arrow labeled '3'. Below the main content area, there is a 'Monitor Application' section showing a grid of application templates. The 'Microsoft Teams' template is highlighted by a blue circle and arrow.

Endpoint Agents Interface:

- Left Sidebar: Cloud & Enterprise Agents > Endpoint Agents > Overview, Views, Agent Views, **Test Settings** (1)
- Main Content: Synthetic Tests, Real User Tests, Test Labels (2)
- Top Right: + Monitor Application (3)

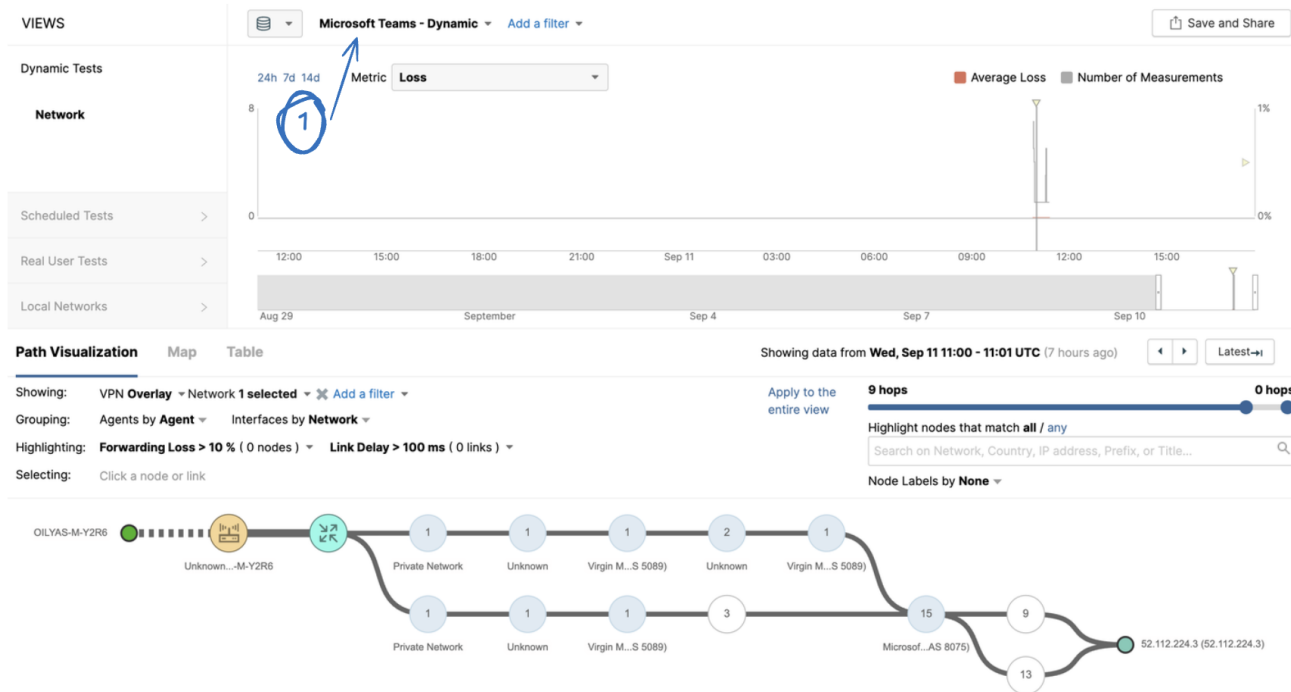
Monitor Application Section:

- Filter by application name
- Popular Applications:

 - Custom Application
 - Microsoft Teams (highlighted)
 - Microsoft 365
 - Zoom
 - ServiceNow
 - Google Suite
 - Microsoft Login
 - Salesforce
 - Slack
 - Webex

Endpoint Agent – WebRTC Configuration

Monitor the Collaboration experience with Dynamic Tests



Cisco Devices and MTR Experience

CISCO *Live!*



RoomOS: Choose your experience

Cisco Devices experience 



Open Platform strategy

OR

Microsoft Teams Rooms experience 



Cisco Devices for Microsoft Teams

Same device, powered by Cisco RoomOS

Setting MTR Devices to join Webex vs Microsoft meetings

Webex Meetings

- Default MTR Mode: Only Microsoft Teams meetings are presented with a join option.
- Additional Configuration Required: To enable join buttons for Webex meetings, necessary setup steps need to be configured
- Without these settings: Displays may show meeting details without a join option or omit meeting details entirely.
- When a Cisco MTR device joins a Webex meeting, it leverages **RoomOS** to facilitate a seamless meeting experience.

MTR Meetings

- Default MTR Mode: Only Microsoft Teams meetings are presented with a join option.
- Configuration needed for MTR registered Cisco devices

MTR devices joining Webex Meetings – ThousandEyes

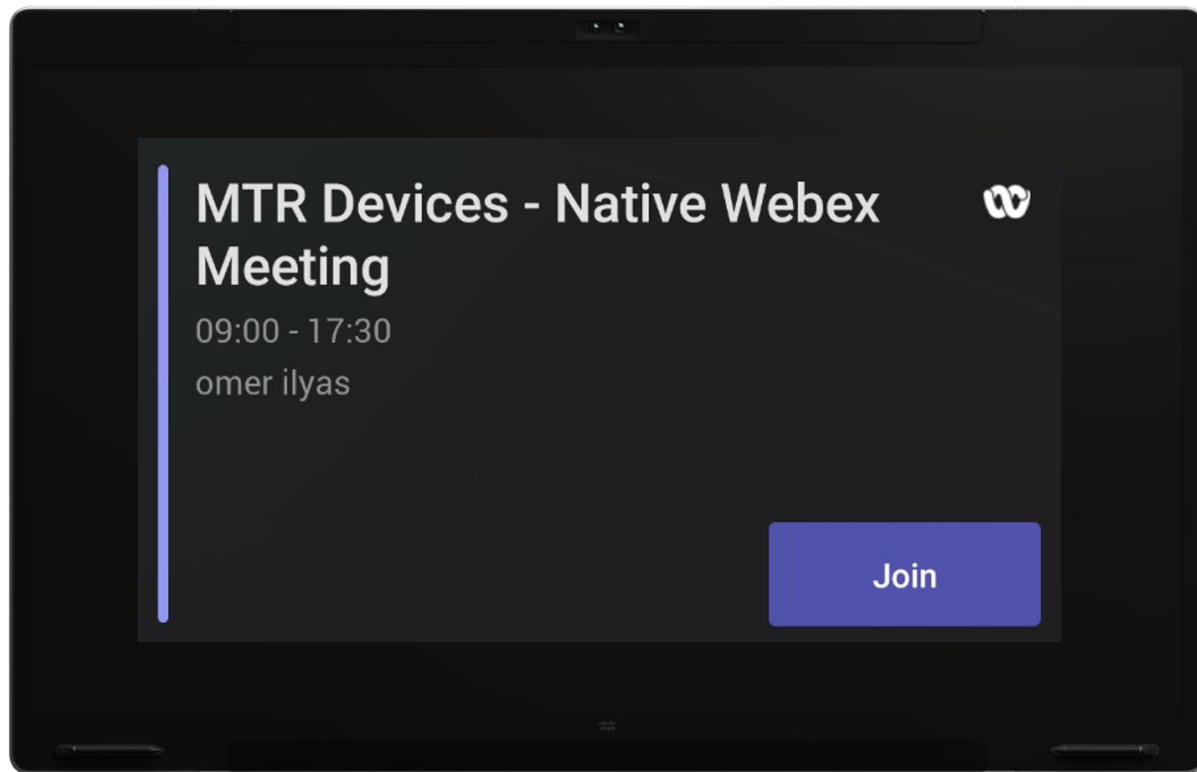


MTR Devices – Native Webex Meetings

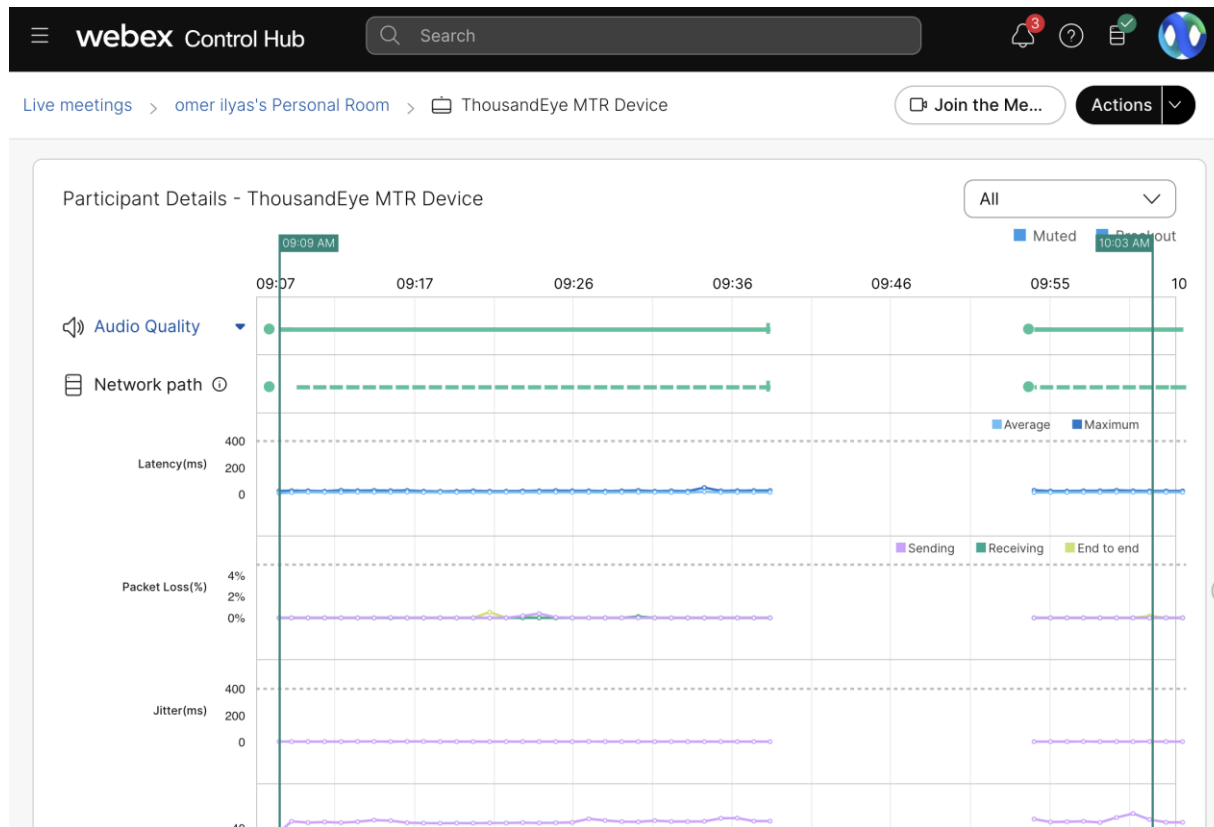
- When a **Cisco MTR device** joins a **Webex meeting**, it leverages **RoomOS** to facilitate a seamless meeting experience and the call is **Native to RoomOS**
- The **connection path** of the ThousandEyes is accessible through both the **Control Hub** and the **ThousandEyes portal**.
- Visibility and monitoring enabled once meeting in progress



MTR Devices – Native Webex Meetings



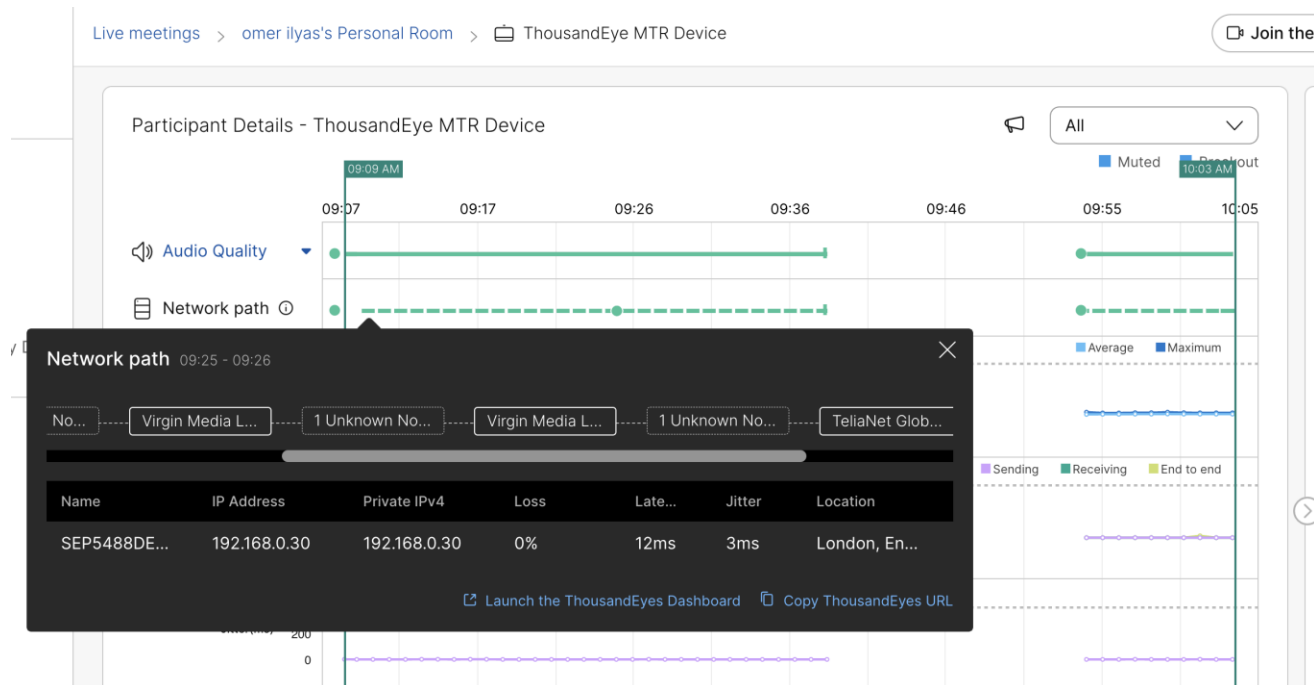
MTR Devices – Native Webex Meetings



- Review your Webex Meeting on RoomOS MTR device by browsing to. [Troubleshooting -> Meetings and calls](#)
- Search for your relevant meeting

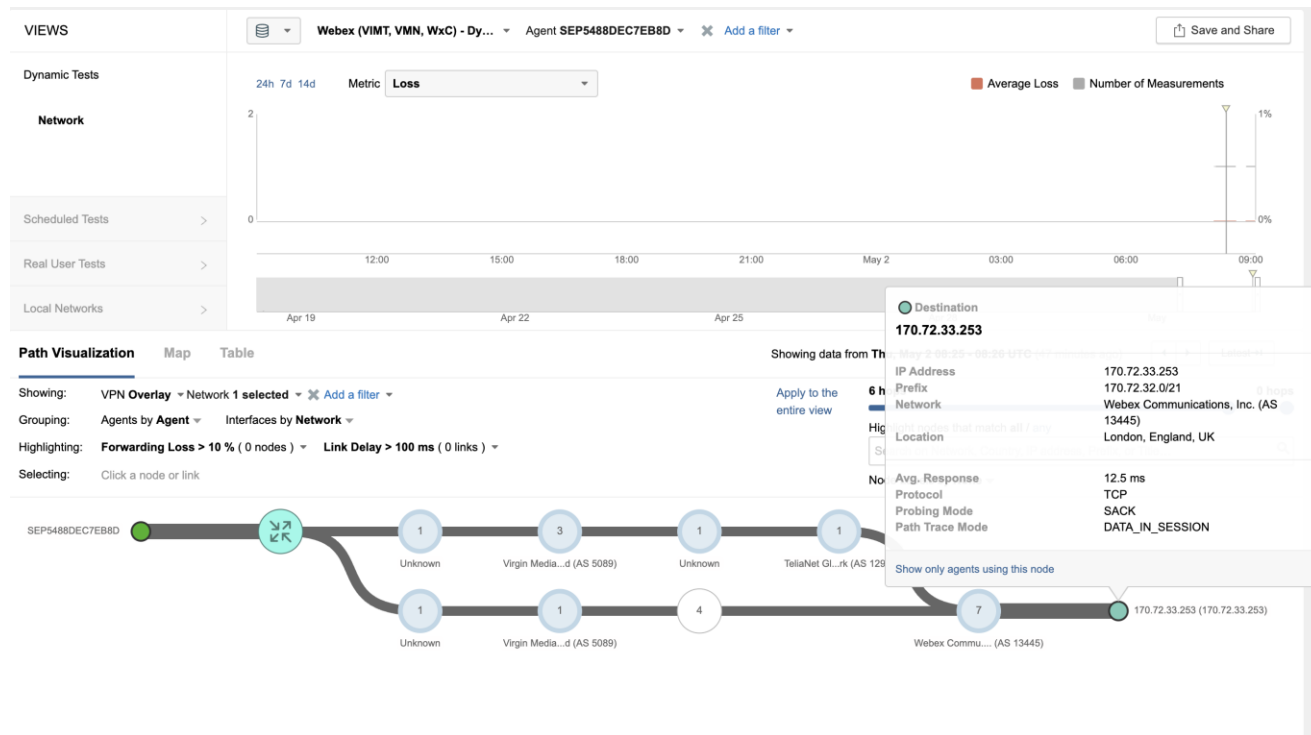
MTR Devices – Native Webex Meetings

- Review **Network Metrics -> Meetings and calls** by clicking on the dotted line.



MTR Devices – Native Webex Meetings

- Cross Launch into [ThousandEyes](#) portal
- In [ThousandEyes](#) portal make sure Dynamic Test for [Webex](#) is selected

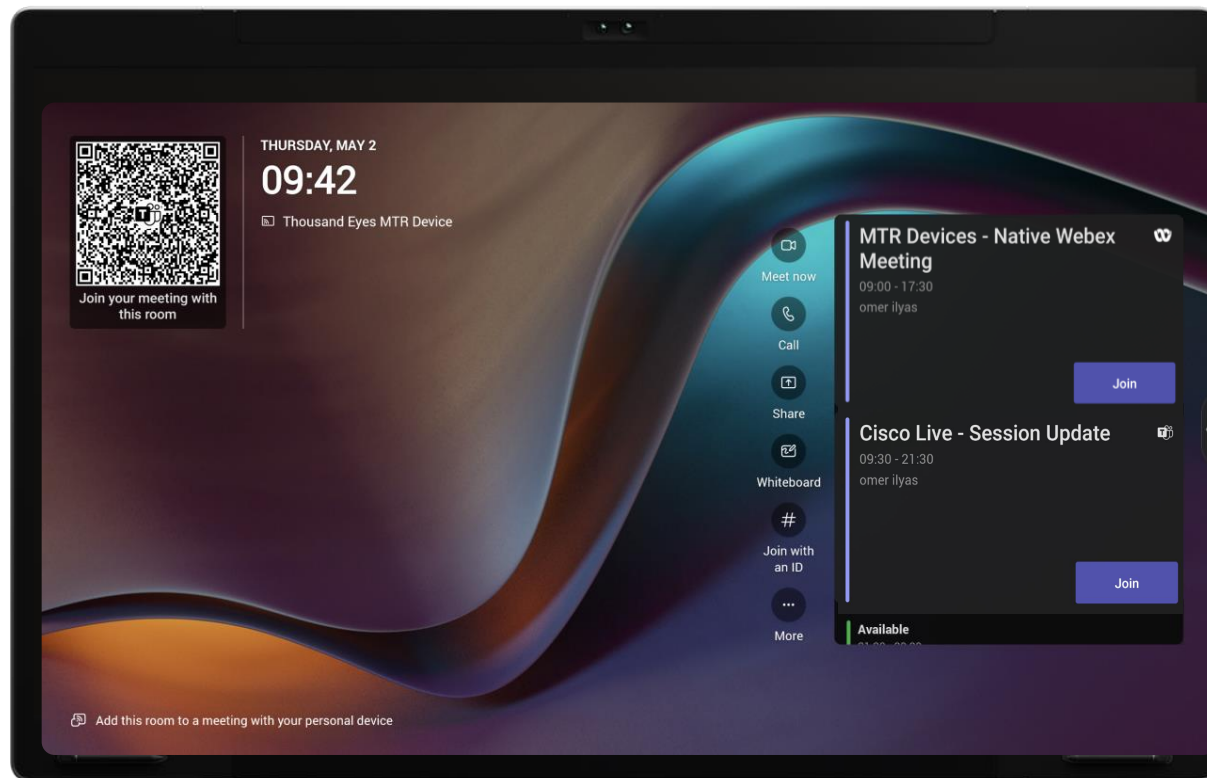


MTR devices joining Microsoft Meetings – ThousandEyes

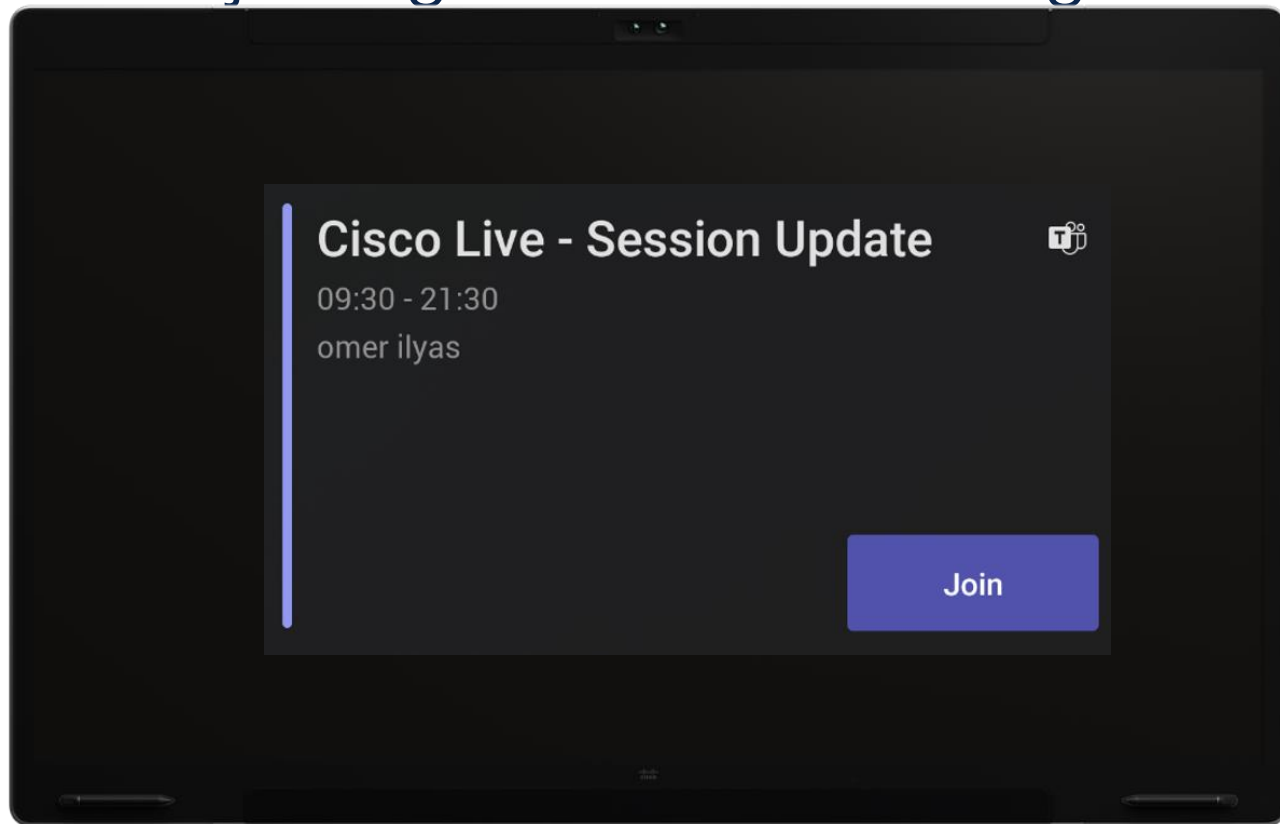


MTR Devices joining Microsoft Meetings

- When a **Cisco MTR device** joins a **Microsoft meeting**, it leverages Microsoft Media servers.
- There will be **no path visibility in control Hub**

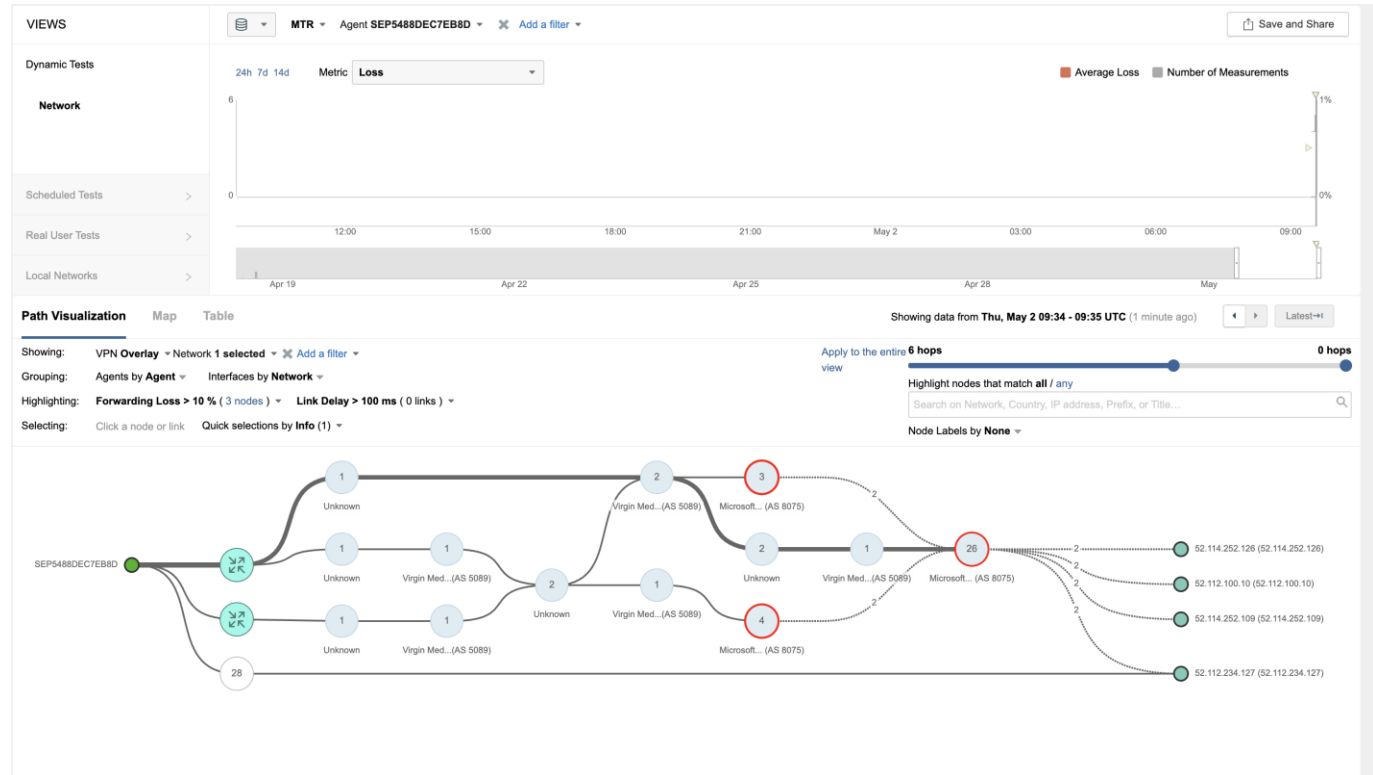


MTR Devices joining Microsoft Meetings

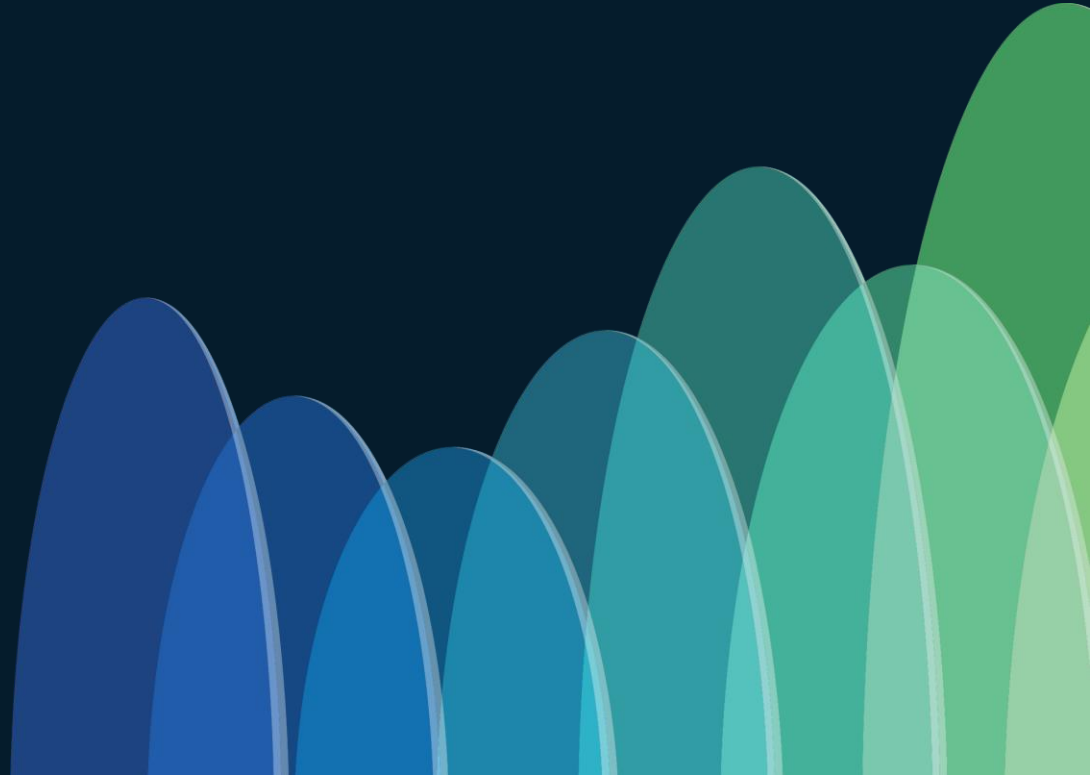


MTR Devices – Microsoft Meetings

- In **ThousandEyes** portal make sure Dynamic Test for **MTR** is selected



Meraki Integration



Meraki Integration

Pre-Requisites

Meraki Network



When joining Webex meeting via Devices or Webex App be on a Meraki Network

ControlHub Admin
Rights



To enable the config

Valid API Key



Need valid API Key from Meraki Platform

No Agent Installation



Customers don't need to install any Meraki agent.

Option1 – API Keys



Meraki Integration

Integration

Dashboard API access

API Access ⓘ

☒ Enable access to the Cisco Meraki Dashboard API

After enabling the API here, go to your [profile](#) to generate an API key. The API will return 401 for requests with a missing or invalid API key.



API access

API keys

Key	Created at	Last used	
*****ee82	Feb 24 2023 08:55 UTC	Sep 28 2023 12:49 UTC	<button>Revoke</button>

Meraki Integration

Integration

webex Control Hub

Search

Overview
Alerts centre

MONITORING

Analytics
Troubleshooting
Reports
Customer Journey Data

MANAGEMENT

Users
Groups
Locations
Workspaces
Devices
Apps
Account
Organisation settings

Organisation settings

Settings Templates Beta

Meraki

Set up Meraki integration for troubleshooting.

Providing an API key will allow Meraki API access for troubleshooting.

☒ Allow Meraki API access

User sign-in data

Allow logging data related to end-user sign-in and sign-outs. This will help Webex monitor compromised passwords, suspicious activities, etc. and make the account more secure.

☐ Allow user sign-in data

Alerts

Webhook callback URL

Providing a webhook will allow calling your callback URL from the Alerts centre when an alert is generated. [Learn more.](#)

Webhook *

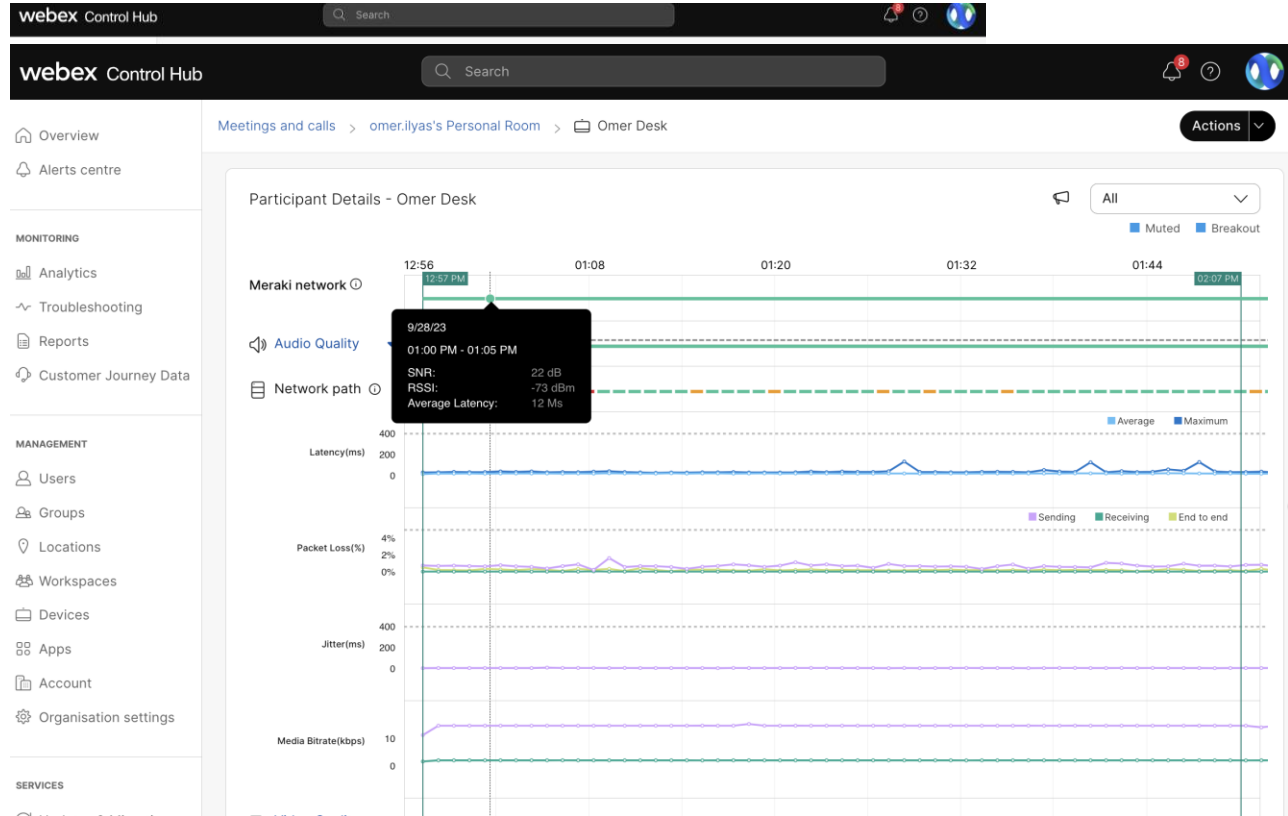
Enter a webhook URL

Troubleshooting



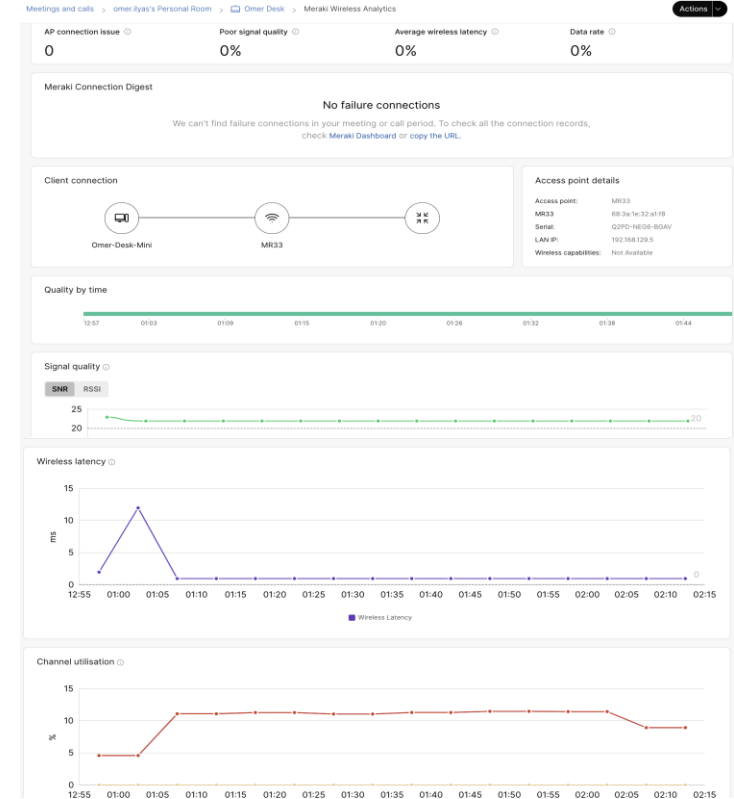
Control Hub Troubleshooting

- After a specific **Webex device** or **Webex app** joins the **meeting**, you will have the capability to access and view Meraki information within Control Hub.

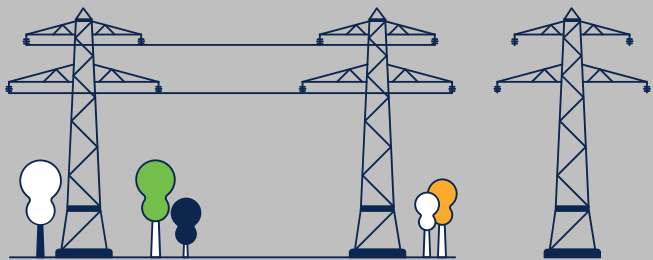


Control Hub Troubleshooting

- Once connected to a [Meraki network](#), a metric line can be shown with data and indicates performance within the customer's network.
- Display as a solid line and the data interval is [5 minutes](#)



Key Takeaways



Thousand
Eyes



Meraki

Meraki

... as a key enabler for Hybrid work

The future of Hybrid work is here – act now

Hybrid is here to stay .. No going back



Employees expect more



Takes time to get there



Quality solutions are here **now**



Complete Your Session Evaluations



Complete a minimum of 4 session surveys and the Overall Event Survey to claim a **Cisco Live T-Shirt**.



Complete your surveys in the **Cisco Live mobile app**.



Continue your education

- Visit the Cisco Stand for related demos
- Book your one-on-one Meet the Expert 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

Contact me at: oilyas@cisco.com



Thank you

CISCO *Live!*

#CiscoLiveAPJC

CISCO *Live!*

GO BEYOND

#CiscoLiveAPJC