

# Microsoft Teams Integration with Mist

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RELEASE

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# Microsoft Teams Integration Overview

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Microsoft Teams (Teams) integration with Mist enables Mist to gather information about Teams calls from the Microsoft Azure cloud. This information gathered includes packet loss, latency, and jitter data for a client. Using this information, Mist identifies Teams calls during which problems—such as dropped calls and bad audio or video—occur, resulting in a bad user experience.

Mist correlates the information that it obtains from the Azure cloud with the wired, wireless, and WAN network insights to determine the root cause for the Teams call issues. Marvis leverages the correlated data to help you find the root cause.

## Subscription Requirements for Teams Integration

To integrate Teams with Mist, you'll need a Marvis for Wireless subscription.

## Mist Data Collection from Teams

Mist uses the OAuth 2.0 protocol to link a Mist organization with a Teams user account.

Mist fetches the following data from Teams:

- Administrator information
  - Name and the e-mail ID of the administrator who linked the account
- Meeting information
  - Meeting details—Meeting ID and meeting host information

- Meeting participants—Participant information such as the display name, public and private IP address, MAC address, and hostname
- User's quality-of-service (QoS) information—Latency, jitter, loss, bit rate, resolution, client battery, and so on
- User feedback—Rating provided by the user at the end of the call

Mist correlates the meeting data with the network data from the wired, wireless, and WAN devices to:

- Provide insights
- Help perform a root cause analysis on the health of the collaboration applications
- Get to a faster resolution of the issue causing a poor experience

#### Personally Identifiable Information (PII) Data Security

Mist Teams integration is an **Opt-in** service. In addition to the data specified in the *AI-Driven Enterprise Privacy Regime* section of [Mist AI Cloud Service Description](#), Mist collects the e-mail IDs of the Teams meeting participants, and the CPU and battery information about their devices. Mist uses this information to measure and describe the user experience. If your organization is subject to the Health Insurance Accountability and Portability Act ([HIPAA](#)), check with your legal team before opting for this service.

## Integrate Your Microsoft Teams Account with Mist

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To enable Mist to collect data from the Microsoft Teams application, you must link your Teams account to your Mist organization.

## About the Linking Workflow

The [Application Experience with Mist](#) application is listed in Microsoft Entra Gallery (formerly Microsoft Active Directory). The workflow for linking creates a Microsoft Entra service principal in your Entra tenant. For more details about how the linking works, see:

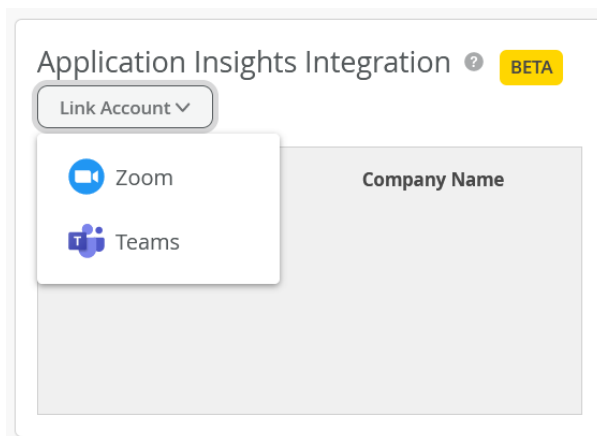
- [How are Application Objects and Service Principals related to each other](#)
- [Why do applications integrate with Azure AD](#)
- [What happens when you register an application](#)
- [Service Principal Example](#)

## Link Your Teams Account to a Mist Organization

You can add one Teams account to multiple Mist organizations. One Mist organization supports multiple Teams accounts. Only users with the Global Administrator role or Privileged Role Administrator can link a Teams account to an organization.

To link your Teams account to an organization on the Mist portal:

1. On the Mist portal, select **Organization > Settings**.
2. Under Application Insights Integration, select **Teams** from the **Link Account** drop-down list.



3. Click **Yes** in the Confirm Redirect dialog box.  
You are redirected to the Microsoft Teams SSO page.
4. Enter your Teams credentials and click **Sign In**.



**NOTE:** Use a global administrator account or service account. If you're using a service account, ensure to assign the **Privileged Role Administrator** or Global Administrator role to the account before proceeding to link the account. The following screenshot shows the permissions required for a service account:

<a href="#">+ Add assignments</a> <a href="#">✕ Remove assignments</a> <a href="#">↻ Refresh</a> <a href="#">🗨 Got feedback?</a>				
<b>Administrative roles</b> Administrative roles can be used to grant access to Azure AD and other Microsoft services. <a href="#">Learn more</a>				
<input type="text" value="Search by name or description"/> <a href="#">+ Add filters</a>				
Role	Description	Resource Name	Resource Type	Assignment Path
<input type="checkbox"/> <b>Privileged Role Administrator</b>	Can manage role assignments in Azure AD, and all aspects of Privileged Identity Management.	Directory	Organization	Direct
				Type
				Built-in

If two-factor authentication is enabled for your account, you are prompted for additional authentication.

You will see a permissions page.

@mistai.onmicrosoft.com

## Permissions requested

Review for your organization

**Application Experience with Mist**  
Juniper Networks, Inc.

This app would like to:

- ☐ Read all call records  
 Allows the app to read call records for all calls and online meetings without a signed-in user.  
 This is a permission requested to access your data in MistAI.
- ☐ Sign in and read user profile  
 Allows users to sign-in to the app, and allows the app to read the profile of signed-in users. It also allows the app to read basic company information of signed-in users.  
 This is a permission requested to access your data in MistAI.

If you accept, this app will get access to the specified resources for all users in your organization. No one else will be prompted to review these permissions.

Accepting these permissions means that you allow this app to use your data as specified in their [terms of service](#) and [privacy statement](#). You can change these permissions at <https://myapps.microsoft.com>. [Show details](#)

Does this app look suspicious? [Report it here](#)

Cancel
Accept



**NOTE:** To correlate the QoS data of the meeting participant with the data from the Mist network devices, the Application Experience with Mist application requires the following permission from Microsoft Graph :

[CallRecords.Read.All](#)

Here's an example screenshot that shows the permissions:

Configured permissions

Applications are authorized to call APIs when they are granted permissions by users/admins as part of the consent process. The list of configured permissions should include all the permissions the application needs. [Learn more about permissions and consent](#)

Add a permission

Grant admin consent for Mist

API / Permissions name	Type	Description	Admin consent requ...	Status
<div><div></div>Microsoft Graph (1)</div>				
<a href="#">CallRecords.Read.All</a>	Application	Read all call records	Yes	<div><div></div>Granted for Mist</div>

5. Click **Accept**.

You are redirected to the Mist portal. You can now see the Teams application listed in the Application Insights Integration section.

Application Insights Integration ? BETA		
Link Account ▼		
Status	Application	Company Name
●	Teams	--

6. Click the row to view more information.

You can see the relevant account details on the Teams Account Information page.

Teams Account Information

×

Last Sync:	Oct 16, 2023 17:00
Last Status:	Success
Account Id:	
Linked By:	--
Company Name:	--
Linked Timestamp:	Jun 2, 2023 11:10
Application:	Teams

Unlink Account

Done

## Unlink a Teams Account from Mist

To unlink a Teams account from a Mist organization:

1. In the Mist portal, select **Organization > Settings**.
2. Under Application Insights Integration, click the account that you want to unlink.
3. Click **Unlink Account**.

Teams Account Information

×

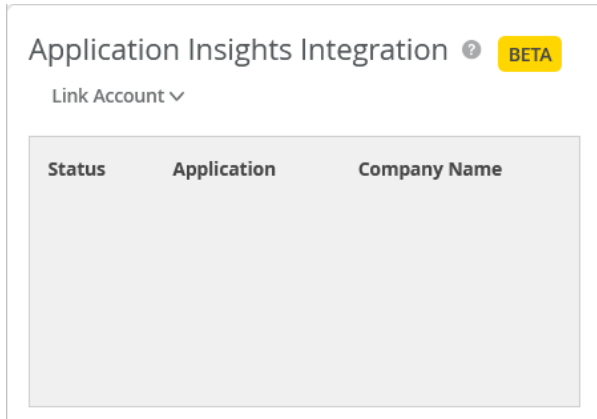
Last Sync:	Oct 16, 2023 17:00
Last Status:	Success
Account Id:	
Linked By:	--
Company Name:	--
Linked Timestamp:	Jun 2, 2023 11:10
Application:	Teams

Unlink Account

Done

You can see that the Application Insights Integration section no longer lists the account.





## View Teams Meeting Insights

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Mist collects Teams meeting data and displays the insights only if a client joins a Teams call when connected to a Mist access point (AP). Mist does not display insights for calls that you make outside of the Mist network. You can view the meeting insights both at the site level and the client level.

### View Site-Level Teams Meeting Insights

To view site-level meeting insights:

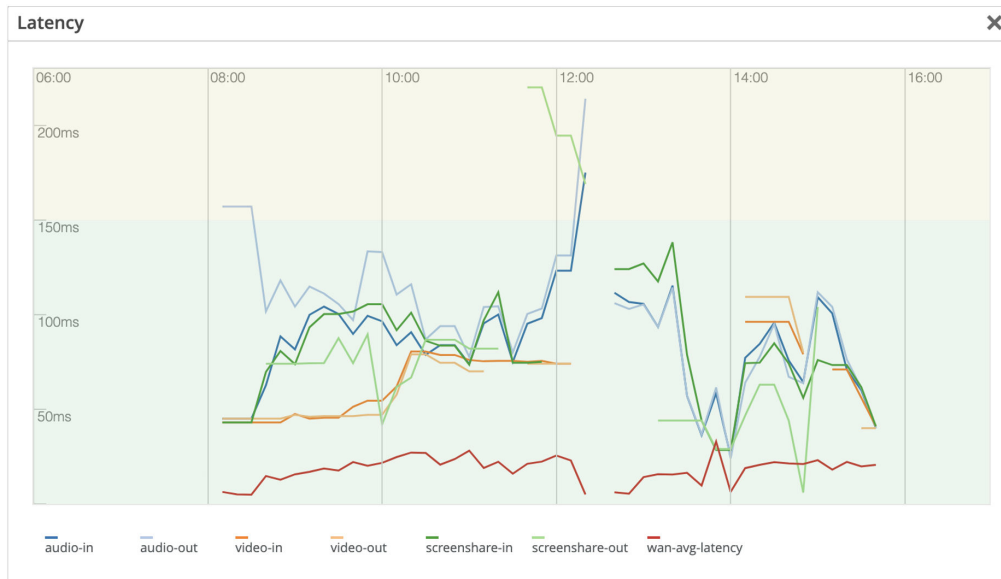
1. In the Mist portal, select **Monitor** > **Service Levels**.
2. Select **Insights**, the site, and time range.
3. Scroll down to the Meeting Insights section. You can see a graphical representation of the data that Mist aggregates for all the clients in the site for the selected duration.

The aggregation interval is:

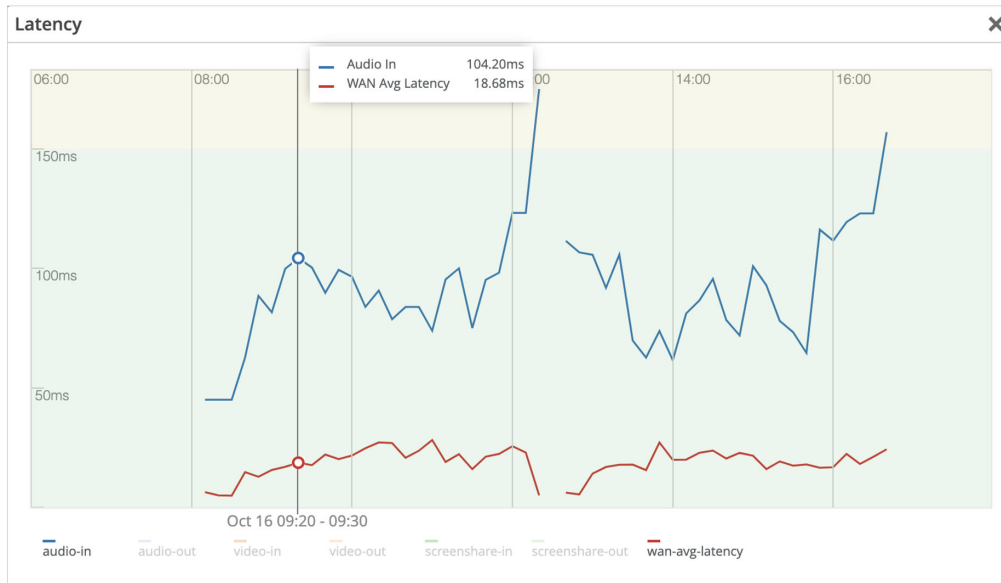
- 10 minutes for a duration that is less than 24 hours
- 1 hour for a duration that is greater than 24 hours

Mist provides the following time series graphs. You can click the legends in each of the graphs to filter the data.

- **Latency:** Provides client-to-cloud input and output latencies for audio, video, and screen sharing.

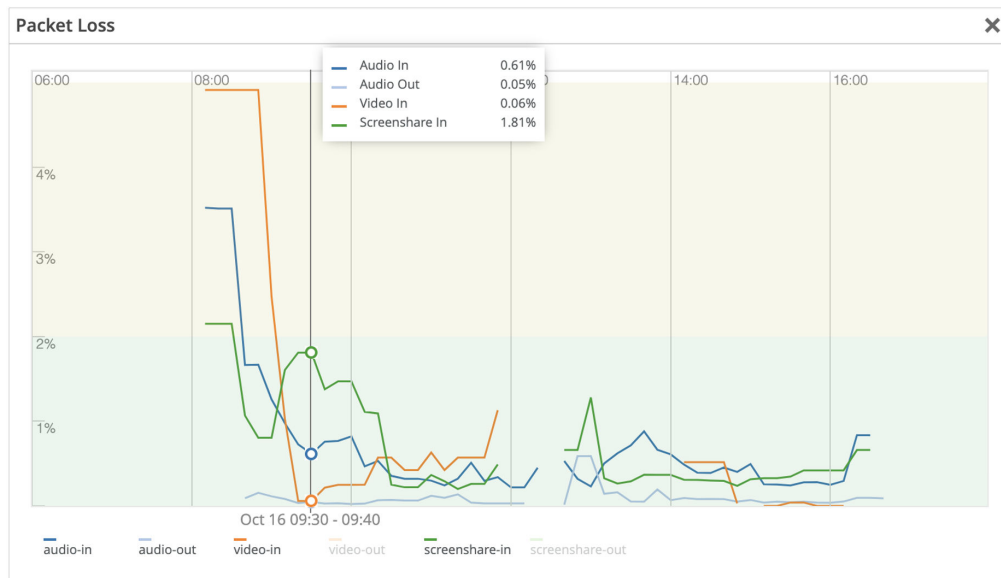


You can compare the latency that Teams observes with the average WAN latency, represented by **wan-avg-latency** for the site. You can also compare the latency for a specific parameter with the **wan-avg-latency** value. For example, the following screenshot provides a comparison between the **audio-in** parameter and **wan-avg-latency**.

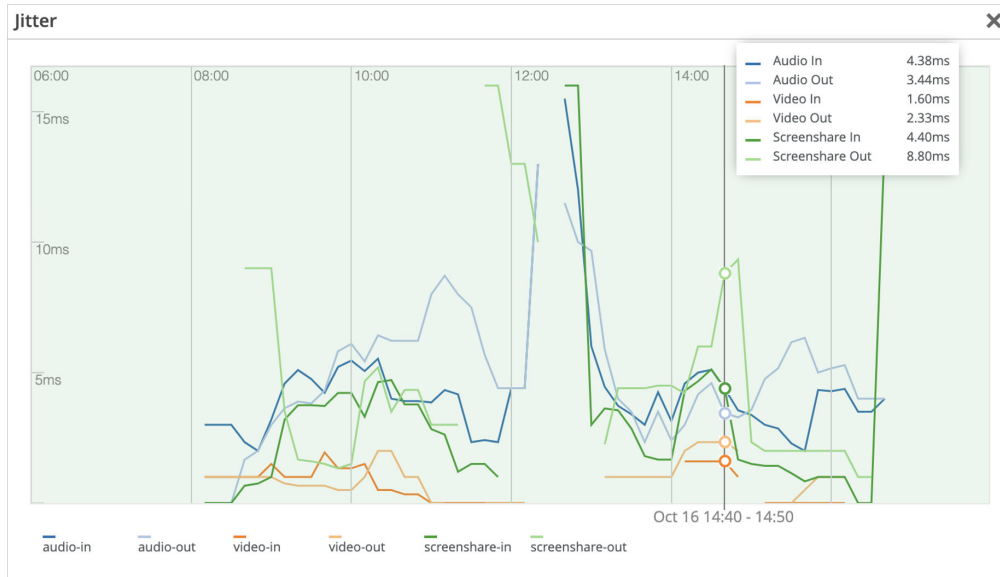


**NOTE:** All the parameters are enabled by default in the graph. To select a parameter, click all the other parameter labels to disable the parameters and hide their data in the graph. You can click the labels again to enable the parameters and see the data in the graph.

- **Packet Loss:** Provides client-to-cloud input and output packet loss for audio, video, and screen sharing.



- **Jitter:** Provides client-to-cloud input and output jitter for audio, video, and screen sharing.



- **Call Metrics:** Provides metrics such as number of calls and users at a specific time.



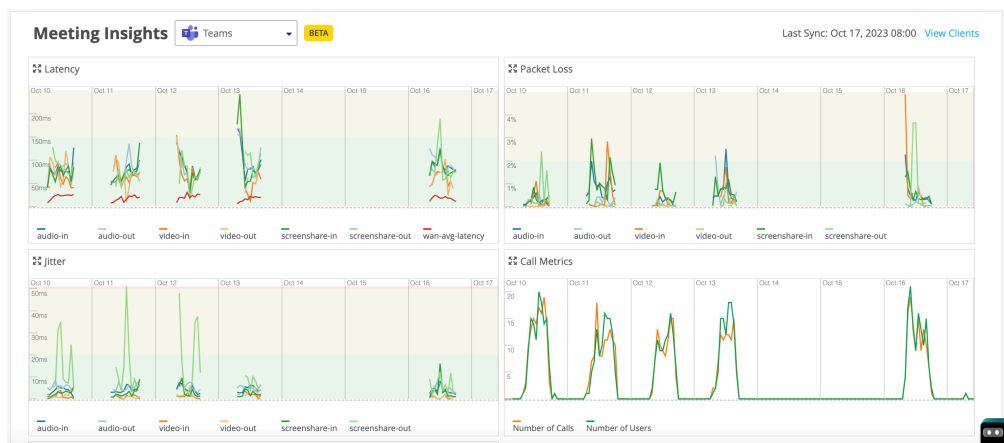
- **Feedback:** Provides a histogram of user feedback. The Y-axis indicates the number of users who have given feedback. The color of each bar indicates whether the feedback is poor, average, or good.



## View Client List for a Site

To view the client list for a site:

1. In the Mist portal, select **Monitor > Service Levels**.
2. Select **Insights**, the site, and time range.
3. Scroll down to the Meeting Insights section.
4. Click **View Clients**.



Mist lists the clients that are connected to Teams meetings. You can click a MAC address (in blue) to go to the Client Insights page for that client.

Client calls for app "teams"

Filter

< 1-5 of 5 >

Client MAC Address	Hostname	IP	Min. Rating	User
88: [redacted] 1f [redacted]-mbp		10.100.0.63, 10.100.0.66, 10....	--	--
bc: [redacted] 54 [redacted]mbpm1		10.100.0.49, 10.100.0.34, 10....	--	--
f0: [redacted] cd [redacted]mbp		10.100.0.50, 10.100.0.38, 10....	--	--
f8: [redacted] e9 [redacted]-mbp		10.100.0.93, 10.100.0.163, 10...	--	--
f8: [redacted] :b6 [redacted]-mbp		10.100.0.87, 10.100.1.11, 10....	--	--

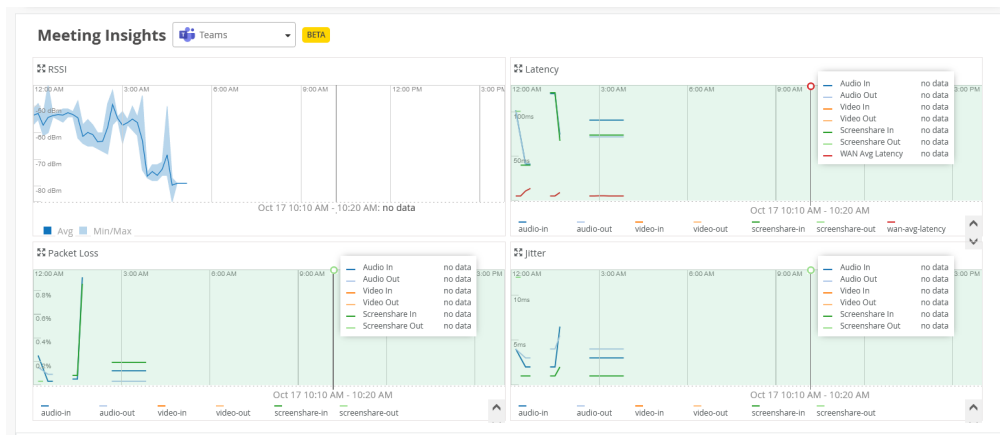
< [redacted] >

OK

## View Client Insights

The Client Insights page provides insights for a specific client. ["View Client List for a Site" on page 11](#) describes how you can go to the Client Insights page.

Scroll down to the Meeting Insights section in the Client Insights page. You can see the time series graphs for latency, packet loss, jitter, and call metrics for a specific client.



For an individual client, you can compare the received signal strength indicator (RSSI) value with the latency, packet loss, and jitter data.

The Meeting Details section provides details of the meetings that the client joined.

Meeting Details

All Meetings

BETA

Search

< 1-7 of 7 >

Application	Meeting ID	Join Time	Leave Time	Duration	Audio Quality	Video Quality	Screen Share Quality	User Feedback
Teams	3a9d62b4-5f2a-4ae8-aecc-f44a...	Oct 23, 2023 12:31	Oct 23, 2023 13:00	29m	Good (Mos:4-5)	Good (Mos:4-5)	Good (Mos:4-5)	---
Teams	c1bbe007-c458-4136-bf80-c7b0...	Oct 19, 2023 14:47	Oct 19, 2023 15:05	18m	Good (Mos:4-5)	Unknown (Data not collected)	Good (Mos:4-5)	---
Teams	d5e1b3d6-f4ad-465d-9bf7-9dd...	Oct 19, 2023 12:11	Oct 19, 2023 14:45	2h 34m	Poor (Mos:2-3)	Good (Mos:4-5)	Fair (Mos:3-4)	---
Teams	0a60d9c0-64cd-48d7-a2e0-cf87...	Oct 18, 2023 16:39	Oct 18, 2023 17:32	53m	Good (Mos:4-5)	Unknown (Data not collected)	Good (Mos:4-5)	---
Teams	760e7668-a7ce-468b-831d-08e...	Oct 18, 2023 15:31	Oct 18, 2023 16:33	1h 2m	Poor (Mos:2-3)	Unknown (Data not collected)	Good (Mos:4-5)	---
Teams	7a46c3c9-479f-4237-ac0b-0aba...	Oct 18, 2023 10:01	Oct 18, 2023 11:06	1h 5m	Poor (Mos:2-3)	Fair (Mos:3-4)	Bad (Mos:1-2)	---
Teams	6cd1db85-f6cd-4e2e-8982-6f72...	Oct 16, 2023 16:02	Oct 16, 2023 16:56	55m	Good (Mos:4-5)	Unknown (Data not collected)	Good (Mos:4-5)	---

## View Client Events

On the Client Insights page, Mist displays events such as a client joining the call and a client leaving the call. These events are interleaved with the existing wireless client events. ["View Client List for a Site" on page 11](#) describes how you can go to the Client Insights page. You can click each event to view the details.

Client Events

435 Total

302 Good

97 Neutral

36 Bad

Client Left Call (Teams)	LD_MCB_AP	17:32:26.001 Oct 18, 2023	AP	LD_MCB_AP	App	teams
Client Joined Call (Teams)	LD_MCB_AP	16:39:05.001 Oct 18, 2023	Audio Quality	poor	Meeting ID	
Client Left Call (Teams)	LD_MCB_AP	16:33:28.001 Oct 18, 2023				
DNS Success	LD_MCB_AP	16:05:52.576 Oct 18, 2023				
DNS Failure	LD_MCB_AP	16:05:04.630 Oct 18, 2023				
Client Joined Call (Teams)	LD_MCB_AP	15:31:24.001 Oct 18, 2023				
DHCP Success	LD_MCB_AP	14:56:09.404 Oct 18, 2023				

# Troubleshoot Teams Sessions Using the Marvis Conversational Assistant

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- Troubleshoot Teams Sessions Using the Marvis Conversational Assistant | 14

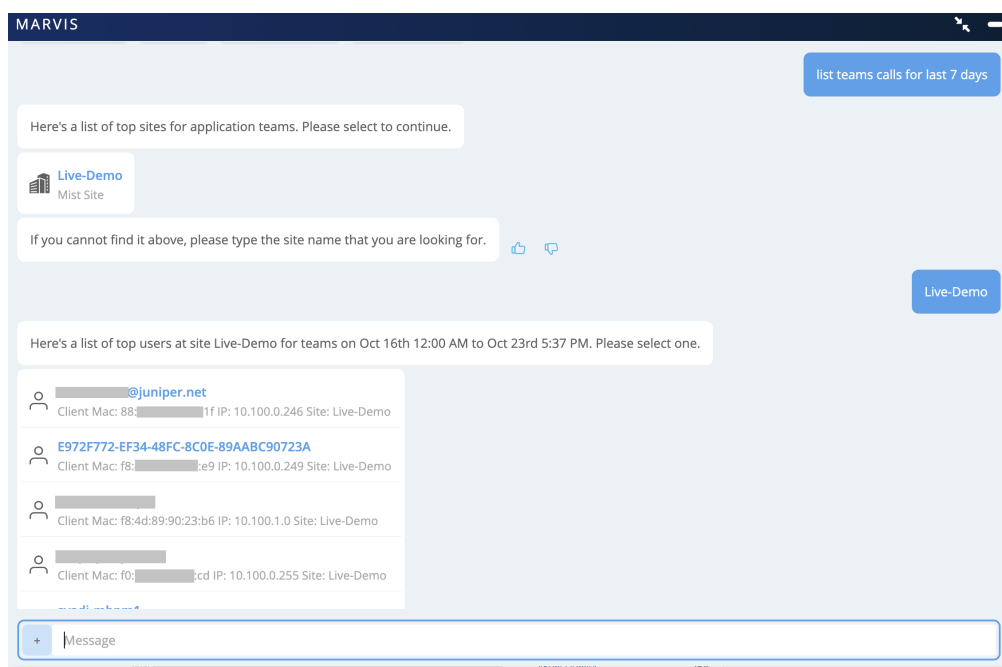
You can use the Marvis conversational assistant to list and to troubleshoot Teams sessions. Network administrators can use the conversational assistant to quickly identify sites that experience issues with Teams sessions.

## List Teams Sessions Using the Marvis Conversational Assistant

To list Teams calls using the conversational assistant, you can use the following phrases:

- list teams calls for last 7 days
- list bad teams calls in last 7 days

Here is an example that shows the details that Marvis displays for "list teams calls for last 7 days":



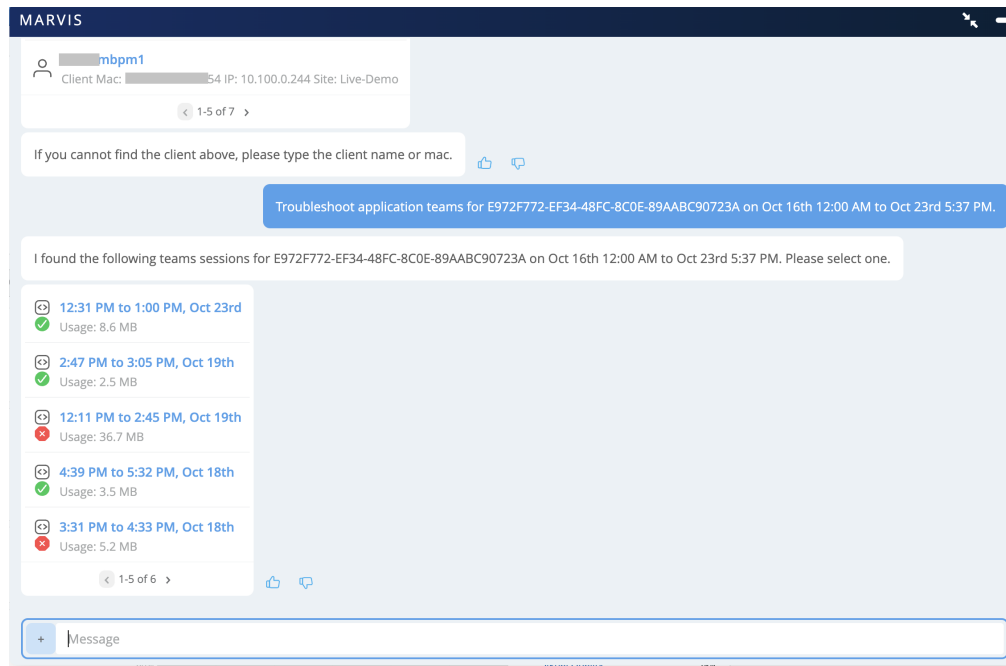
## Troubleshoot Teams Sessions Using the Marvis Conversational Assistant

You can troubleshoot Teams session issues using the conversational assistant. Marvis helps you to identify the root cause for the issue. To troubleshoot a Teams session:

1. In the Marvis conversational assistant window, enter the details of the client that you want to troubleshoot. In the following example, we use the phrase "troubleshoot application Teams for LAPTOP-Q3HRNHI3 on Jul 28 between 10:00 AM to 10:28 AM".

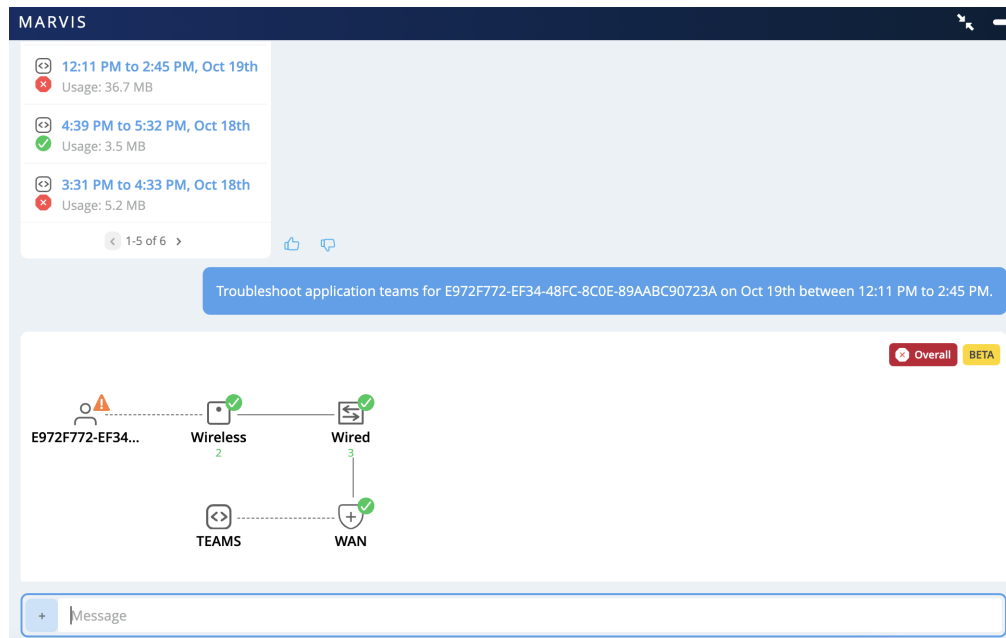


Marvis displays all the Teams sessions that the client joined on the specified date.

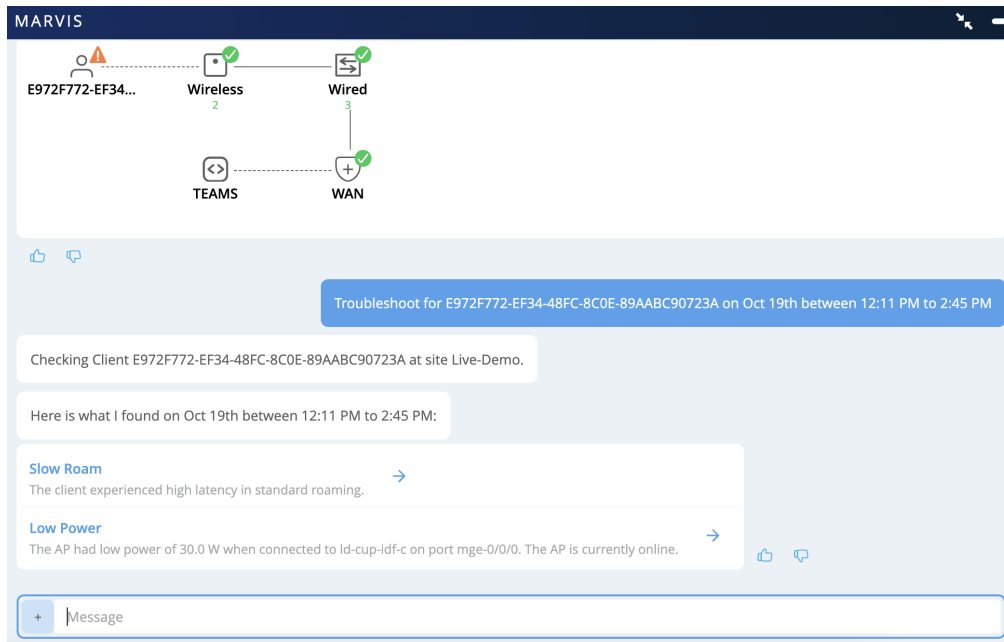


## 2. Click a session to view more details.

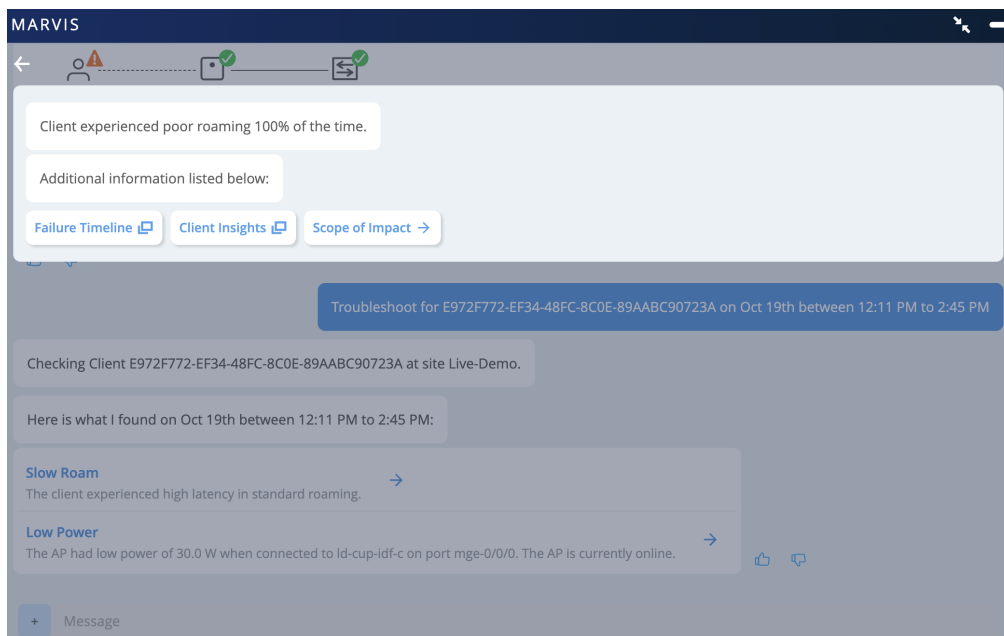
In this example, Marvis reports that the user experience was bad.



You can troubleshoot further by checking the client's overall experience in the network. In this example, you can see that the client experienced a high latency while roaming.



You can click the issue, which is **Slow Roam** in this case, to view more details.



## Troubleshoot Teams Account Integration Issues

The Insights page on the Juniper Mist portal provides site-level and client-level insights for Teams meetings. If you do not see the information on the Insights page:

- Ensure that the client is connected to a Juniper access point (AP) installed at the site.
- Verify that the meeting host is a member of the account that is linked to the Mist organization.
- Ensure that the user logs in to the Teams application before joining the meeting.
- Verify that you have selected the correct site (that is, the site to which the user connected to join the meeting).