

# Configure and Troubleshoot CVI for Microsoft Teams

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## Introduction

This document describes how to configure and troubleshoot Cisco Video Integration (CVI) with Microsoft Teams (MS Teams) integration.

## Prerequisites

## Requirements

Cisco recommends that you have knowledge of these topics:

- Webex Control Hub general configuration
- Office 365 (O365) general configuration
- Endpoint web admin configuration
- Windows Power Shell configuration
- Webex Edge for Devices configuration

## Components Used

The information in this document is based on these software and hardware versions:

- O365 Admin Site.
- Cisco WebEx Control Hub with A-MST-WX-CVI-ROOMS license.
- Windows Power Shell version 5.1.
- DX70 with Webex Edge for Devices.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

# Background Information

## Required Ports

Ports required for signaling:

Video Device	Protocol	Port Number(s)
Webex device registered to your organization	TCP	443
Other SIP video device	TCP	5060/5061

Ports required for media:

Video Device	Protocol	Port Number(s)
Webex device registered to your organization	TCP/UDP	5004
	UDP	33434
Other SIP video device	UDP	36000-59999

## Supported Device Types for One Button to Push (OBTP)

- Webex Board, Room, and Desk devices.
- Webex Room Kit and Room Phone.
- Cisco MX, SX, and DX series.

## Configuration

## Set Up the Video Integration in Control Hub

Step 1. Sign in to <https://admin.webex.com>.

Step 2. In order to check if the subdomain is set for Webex Session Initiation Protocol (SIP) addresses, navigate to **Organization Settings >SIP Address for Cisco Webex Calling**.

**Note:**In case it is not set, review the next document Change Your [Cisco Webex SIP Address](#).

Step 3. Navigate to **Services >Hybrid**. Locate the Video Integration card for Microsoft Teams, select **Set Up**. (Additional License is required).

### Video Integration



Join Microsoft Teams meetings from Webex devices. Enable Hybrid Calendar Service to join meetings with One Button To Push (OBTP).

[View Prerequisites](#)

[Set Up](#)

**Warning:** At this point **A-MST-WX-CVI-ROOMS** license is required, in order to make further progress.

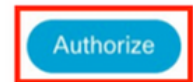
Step 4. On the Video Integration Setup screen, select **Authorize**.

## Video Integration Setup

### Microsoft Teams

The Microsoft Teams Meetings Video Integration Service needs permission to access Microsoft 365 on behalf of your users.

Click **Authorize** to sign into Microsoft and accept [permissions](#) for the service. After you accept, your browser should redirect you back here. If you are not redirected shortly, return to [admin.webex.com](https://admin.webex.com) and start this process again.



Step 5. Select the account with the **Microsoft Tenant Global Administrator** privileges, and enter the credentials.

**Note:** The Microsoft user has to authenticate at least two separate times. It is recommended the steps are performed by a Microsoft administrator whose account has full administrator access to Control Hub.

Step 6. In order to validate the requested permissions, select **Accept**. This grants **Webex Video Integration application access your Microsoft tenant. A redirect to the Control Hub Video Integration Setup screen takes place.**



globaladmin@example.com

# Permissions requested

## Review for your organization



This app would like to:

- ✓ Read domains
- ✓ Initiate outgoing 1 to 1 calls from the app
- ✓ Initiate outgoing group calls from the app
- ✓ Join group calls and meetings as an app
- ✓ Join group calls and meetings as a guest
- ✓ Access media streams in a call as an app
- ✓ Read online meeting details
- ✓ Sign in and read user profile

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

Step 7. Open a **PowerShell** window on your computer, and install the **MicrosoftTeams** PowerShell module if not already installed with the next command:

```
Install-Module MicrosoftTeams -AllowClobber
```

Step 8. Import **MicrosoftTeams** module and connect to your Teams tenant with the next command:

```
Import-Module MicrosoftTeams  
Connect-MicrosoftTeams
```

Step 9. A Microsoft sign-in page appears. Enter the credentials for the user with Microsoft Teams administration privileges for the tenant. If the process is successful, feedback is provided about the account and tenant it successfully signed in.

Step 10. Navigate to **Video Integration** setup screen in Control Hub, select the clipboard button in order to copy the text of the **New-CsVideoInteropServiceProvider** section, from the first text box and paste it into the PowerShell session and confirm.

Step 11. Select how you want to enable the integration for your users. Use the examples as reference for the integration for all users or per user as shown in the next examples:

All users:

```
Grant-CsTeamsVideoInteropServicePolicy -PolicyName  
CiscoServiceProviderEnabled -Global
```

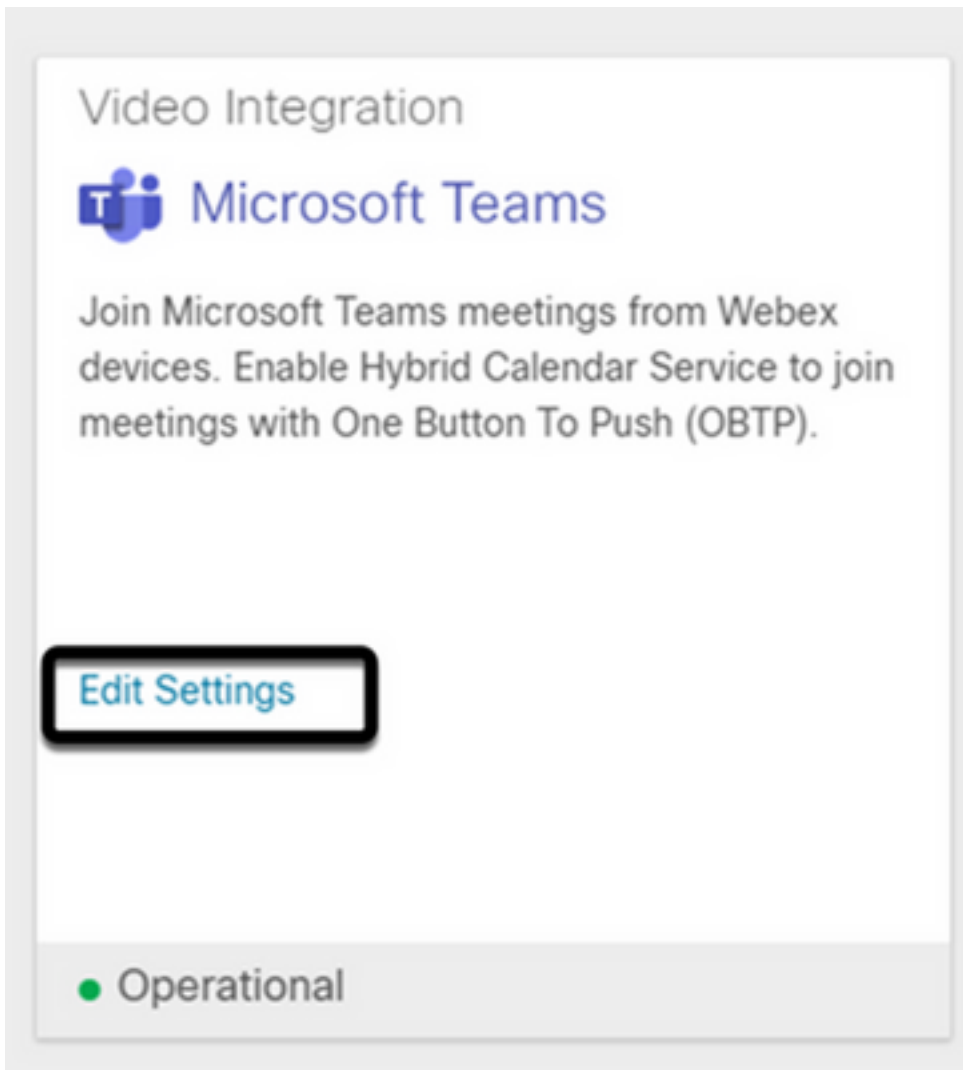
Per User:

```
Grant-CsTeamsVideoInteropServicePolicy -PolicyName  
CiscoServiceProviderEnabled -Identity
```

Step 12. Select **Ok** to complete the setup.

**Note:** PowerShell changes to Microsoft tenant can take time to propagate in the Microsoft 365 environment. Microsoft points this can take up to 6 hours, although it typically takes less than 20 minutes.

Step 13. In case access the PowerShell command text after configuration is completed , navigate to **Control Hub > Hybrid > Services > Video Integration** and select **Edit settings**.



## Troubleshoot

### Case 1. Command Install-Module not recognized in Windows Power Shell.

When command **Install-Module** is configured on Windows PowerShell, no variation from the command is recognized by the console:

```
PS C:\Users\administrator.MEXT.000> install-Module MicrosoftTeams -AllowClobber
install-Module : The term 'install-Module' is not recognized as the name of a cmdlet, function, script file, or
operable program. Check the spelling of the name, or if a path was included, verify that the path is correct and try
again.
At line:1 char:1
+ install-Module MicrosoftTeams -AllowClobber
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (install-Module:String) [], CommandNotFoundException
+ FullyQualifiedErrorId : CommandNotFoundException
```

Step 1. With an Windows Admin account, open Windows PowerShell and run the command **Get-Command** on the console, in order to validate if **Install-Module** is listed as a valid command.

```
Cmdlet Get-WsmanInstance Microsoft.WSMan.Management
Cmdlet Group-Object Microsoft.PowerShell.Utility
Cmdlet Import-Alias Microsoft.PowerShell.Utility
Cmdlet Import-BinaryMiLog CimCmdlets
Cmdlet Import-Certificate PKI
Cmdlet Import-Clixml Microsoft.PowerShell.Utility
Cmdlet Import-Counter Microsoft.PowerShell.Diagnostics
Cmdlet Import-Csv Microsoft.PowerShell.Utility
Cmdlet Import-IscsiVirtualDisk IscsiTarget
Cmdlet Import-LocalizedData Microsoft.PowerShell.Utility
Cmdlet Import-Module Microsoft.PowerShell.Core
Cmdlet Import-PfxCertificate PKI
Cmdlet Import-PSSession Microsoft.PowerShell.Utility
Cmdlet Import-StartLayout StartScreen
Cmdlet Import-TpmOwnerAuth TrustedPlatformModule
Cmdlet Initialize-Tpm TrustedPlatformModule
Cmdlet Install-NfsMappingStore NFS
Cmdlet Install-WindowsFeature ServerManager
Cmdlet Invoke-BpaModel BestPractices
Cmdlet Invoke-CimMethod CimCmdlets
Cmdlet Invoke-Command Microsoft.PowerShell.Core
Cmdlet Invoke-Expression Microsoft.PowerShell.Utility
Cmdlet Invoke-History Microsoft.PowerShell.Core
Cmdlet Invoke-Item Microsoft.PowerShell.Management
Cmdlet Invoke-RestMethod Microsoft.PowerShell.Utility
Cmdlet Invoke-TroubleshootingPack TroubleshootingPack
Cmdlet Invoke-WebRequest Microsoft.PowerShell.Utility
Cmdlet Invoke-WmiMethod Microsoft.PowerShell.Management
Cmdlet Invoke-WSManAction Microsoft.WSMan.Management
Cmdlet Join-Path Microsoft.PowerShell.Management
```

Step 2. In case it is not listed, run the command **Get-Host** and validate the current PowerShell version:

```
PS C:\Users\administrator.MEXTP.000> Get-Host
Name       : ConsoleHost
Version    : 4.0
InstanceId : 292fdba4-928f-49b2-b169-1155848b44ec
CurrentCulture       : en-US
CurrentUICulture    : en-US
PrivateData         : Microsoft.PowerShell.ConsoleHost+ConsoleColorProxy
IsRunspacePushed   : False
Runspace           : System.Management.Automation.Runspace.LocalRunspace
```

Step 3. In case PowerShell current version is older than 5.0, upgrade to any supported version mentioned on the next Microsoft document: [Install-Module Supported PowerShell version](#).

Step 4. After the upgrade, verify one more time the version is now updated with **Get-Host** command.

```
Name       : ConsoleHost
Version    : 5.1.14409.1018
InstanceId : 02880bfc-1fba-4ed1-a1ed-9759f7f20c74
UI         : System.Management.Automation.Internal.Host.InternalHostUserInterface
CurrentCulture       : en-US
CurrentUICulture    : en-US
PrivateData         : Microsoft.PowerShell.ConsoleHost+ConsoleColorProxy
DebuggerEnabled     : True
IsRunspacePushed   : False
Runspace           : System.Management.Automation.Runspace.LocalRunspace
```

Step 5. Run the command **Install-Module MicrosoftTeams -AllowClobber**, and confirm with **Y** command, in order to continue with the regular installation process.



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\Administrator> install-Module MicrosoftTeams -AllowClobber

NuGet provider is required to continue
PowerShellGet requires NuGet provider version '2.8.5.201' or newer to interact with NuGet-based repositories.
The NuGet provider must be available in 'C:\Program Files\PackageManagement\ProviderAssemblies' or
'C:\Users\Administrator\AppData\Local\PackageManagement\ProviderAssemblies'. You can also install the NuGet
provider by running 'Install-PackageProvider -Name NuGet -MinimumVersion 2.8.5.201 -Force'. Do you want
PowerShellGet to install and import the NuGet provider now?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"):
```

## Case 2. Command Install-Module not recognized in Windows PowerShell.

Even with the correct PowerShell version, download process can fail with a similar error as shown in the next image:

```
PowerShellGet to install and import the NuGet provider now?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): y
WARNING: Unable to download from URI 'https://go.microsoft.com/fwlink/?LinkID=627338&clcid=0x409' to ''.
WARNING: Unable to download the list of available providers. Check your internet connection.
```

Step 1. Discard any issue with reachability from the server to the Uniform Resource Locator (URL). Copy the URL specified on the PowerShell window, and paste it on a web browser in order to validate content is displayed.

```
https://onegetcdn.azureedge.net/providers/providers.masterList.feed.swidtag

<?xml version="1.0" encoding="utf-8"?>
<SoftwareIdentity xmlns="http://standards.iso.org/iso/19770/-2/2015/schema.xsd" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:discovery="http://packagemanagement.org/discovery" patch="false" media="(OS:windows)" name="OneGet.Providers" tagVersion="1"
uniqueId="OneGet.Providers.1" version="1.15.194.0" versionScheme="multipartnumeric">

  <!--
    This swidtag is a Discovery Feed that has pointers to the SWIDTAGs for
    the providers that the bootstrapper can download.
  -->

  <Link href="https://onegetcdn.azureedge.net/providers/nuget-2.8.5.208.package.swidtag" type="application/swid-tag+xml"
rel="package" discovery:name="nuget" discovery:latest="true" discovery:version="2.8.5.208" media="(OS:windows)" />

  <Link href="https://onegetcdn.azureedge.net/providers/psl-1.0.0.210.package.swidtag" type="application/swid-tag+xml" rel="package"
discovery:name="psl" discovery:latest="true" discovery:version="1.0.0.210" media="(OS:windows)" />

  <Link href="https://onegetcdn.azureedge.net/providers/ChocolateyPrototype-2.8.5.130.package.swidtag" type="application/swid-
tag+xml" rel="package" discovery:name="chocolatey" discovery:latest="true" discovery:version="2.8.5.130" media="(OS:windows)" />

  <Link href="https://onegetcdn.azureedge.net/providers/nugetv2.feed.swidtag" type="application/swid-tag+xml" rel="feed"
discovery:name="nuget" media="(OS:windows)" />

  <Link href="https://onegetcdn.azureedge.net/providers/psl.feed.swidtag" type="application/swid-tag+xml" rel="feed"
discovery:name="nuget" media="(OS:windows)" />

  <Link href="https://onegetcdn.azureedge.net/providers/chocolateyprototype.feed.swidtag" type="application/swid-tag+xml"
rel="feed" discovery:name="chocolatey" media="(OS:windows)" />
</SoftwareIdentity>
```

Step 2. If reachability is not an issue, this can mean the issue is related to Transport Layer Security (TLS) protocol version. Microsoft deprecated TLS versions 1.0 and 1.1 as shown in the next document: [Microsoft TLS 1.0 and 1.1 Disablement Notice](#).

Step 3. In order to change TLS default PowerShell version, run the next command:

```
[Net.ServicePointManager]::SecurityProtocol = [Net.SecurityProtocolType]::Tls12
PS C:\Users\Administrator.MEXTP> [Net.ServicePointManager]::SecurityProtocol = [Net.SecurityProtocolType]::Tls12
PS C:\Users\Administrator.MEXTP>
```

Step 4. Run the command **Install-Module MicrosoftTeams -AllowClobber**, and confirm with **Y**

command, in order to attempt the regular installation process.

```
PS C:\Users\Administrator> install-Module MicrosoftTeams -AllowClobber
NuGet provider is required to continue
PowerShellGet requires NuGet provider version '2.8.5.201' or newer to interact with NuGet-based repositories.
The NuGet provider must be available in 'C:\Program Files\PackageManagement\ProviderAssemblies' or
'C:\Users\Administrator\AppData\Local\PackageManagement\ProviderAssemblies'. You can also install the NuGet
provider by running 'Install-PackageProvider -Name NuGet -MinimumVersion 2.8.5.201 -Force'. Do you want
PowerShellGet to install and import the NuGet provider now?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): y
```

Step 5. Confirm the second selection with Y command, in order to start the download process.

```
Untrusted repository
You are installing the modules from an untrusted repository. If you trust this repository, change its
InstallationPolicy value by running the Set-PSRepository cmdlet. Are you sure you want to install the modules
from 'PSGallery'?
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "N"):
```

```
Installing package 'MicrosoftTeams'
Downloaded 28.83 MB out of 57.63 MB.
[ooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooo
```

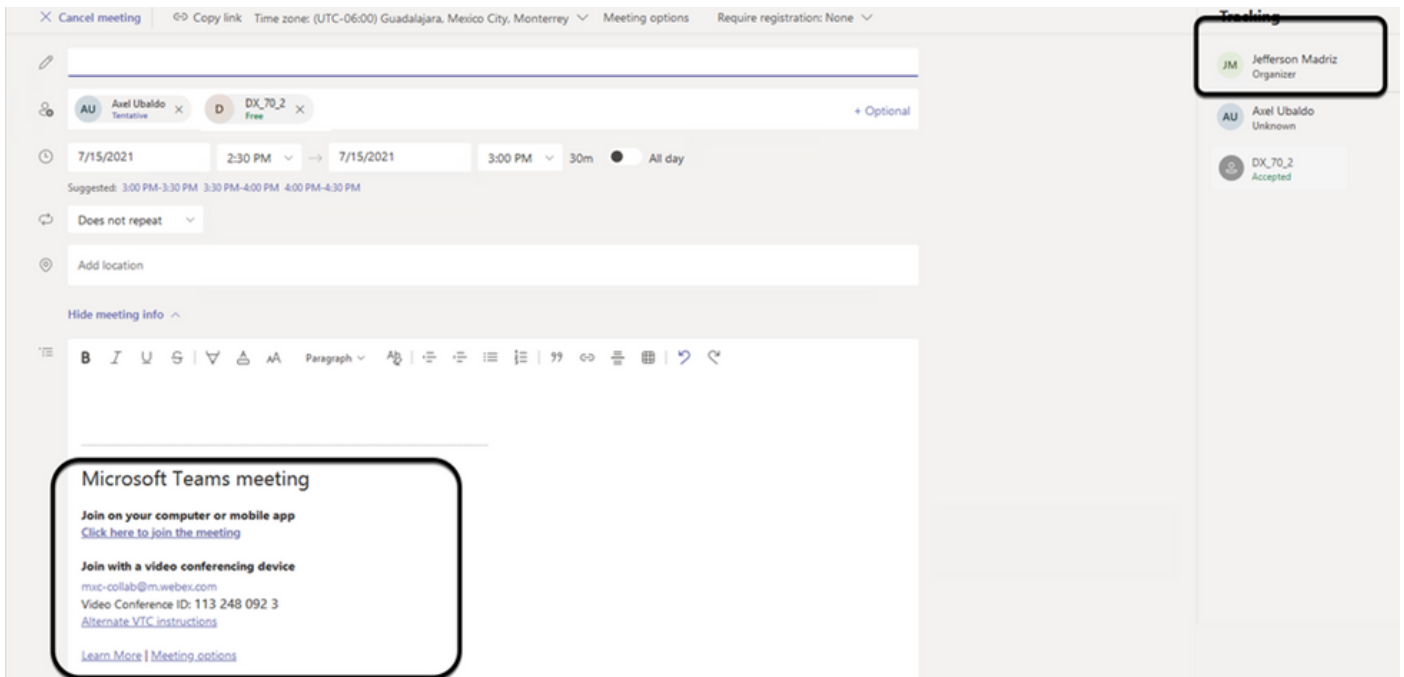
Step 6. Confirm Microsoft Teams module is installed, with the command **Get-InstalledModule**, and proceed with the deployment process.

```
PS C:\Users\Administrator.MEXTP> Get-Installedmodule
Version      Name              Repository        Description
-----      -
2.3.0        MicrosoftTeams   PSGallery         Microsoft Teams cmdlets module for Windows Power..
```

```
PS C:\Users\Administrator.MEXTP> Get-Installedmodule
Version      Name              Repository        Description
-----      -
2.3.0        MicrosoftTeams   PSGallery         Microsoft Teams cmdlets module for Windows Power..
```

### Case 3. Meeting is scheduled but is not displayed on the device.

When you schedule a meeting on MS Teams, details are displayed within the invite, however, the endpoint does not show the meeting.



Device Room mailbox appears listed within Microsoft Teams meeting invite, some details are not properly configured.

Webex Control Hub does not display meeting information either.

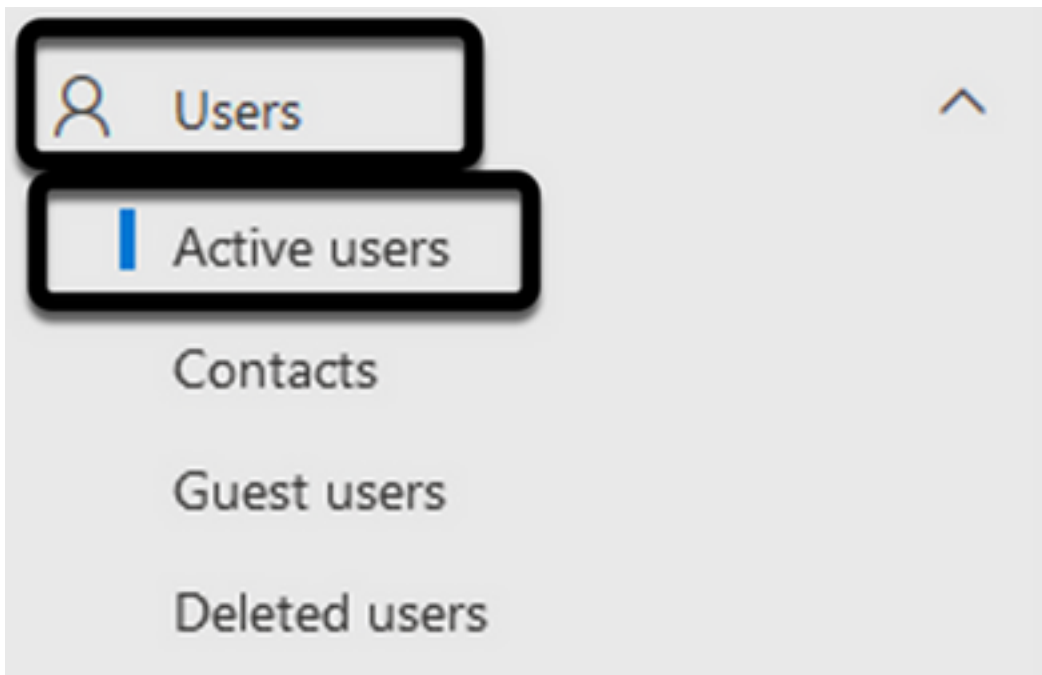
## Scheduled Meetings



No upcoming scheduled meetings the next 24 hours.

Step 1. Navigate to O365 admin site [https : admin . microsoft . com](https://admin.microsoft.com) and login with an admin account.

Step 2. Navigate to **Users > Active Users** menu.



Step 3. Locate the meeting organizer user account and expand its details.

Step 4. Navigate to **Licenses and Apps** section, within the user details in order to find the assigned licenses to it.



Change photo

# Jefferson Madriz



Reset password



Block sign-in



Delete user

Account

Devices

Licenses and apps

Mail

OneDrive

Select location \*

Mexico



Licenses (1)



**Microsoft 365 Business Basic**

1 of 19 licenses available



**Microsoft Teams Exploratory**

96 of 100 licenses available

Step 5. **Microsoft Teams Exploratory** license must be assigned for each user on O365. In case this is not assigned, MS Teams meeting details are not sent to device calendar on Webex Control Hub.

Step 6. Assign the license and test.

**Case 4. MS Teams license is assigned, but meeting is still not displayed on the device.**

Even after the proper licenses are in place, the meeting is not displayed yet on the device calendar with the same banner from Webex Control Hub:

# Scheduled Meetings



No upcoming scheduled meetings the next 24 hours.

Step 1. Navigate to <https://admin.webex.com>

Step 2. Navigate to **Management > Workspaces**, in order to find the affected device listed.

Workspaces

Workspaces Locations **Edit**

Search Select filters Select locations 6 Workspaces in total

Select one or more Workspaces for bulk actions

<input type="checkbox"/>	Name ▲	Type ▲	Contains ▲	Calendar ▲	Calling ▲
<input type="checkbox"/>	Cricketts Cave Board	Not selected	Cisco Webex Board 55S	Not configured	Call on Webex (1:1 call, no...
<input type="checkbox"/>	<b>dx70-2@mx-collab.com</b>	Not selected	<b>Cisco Webex DX70</b>	Microsoft Exchange/Office ...	Premises Calling
<input type="checkbox"/>	EquinoTerapia	Not selected	Cisco Webex DX80	Not configured	Call on Webex (1:1 call, no...
<input type="checkbox"/>	MX300G2	Not selected	Cisco TelePresence MX300 G2	Not configured	Call on Webex (1:1 call, no...
<input type="checkbox"/>	Webex Room Kit Pro Cart	Not selected	Cisco Webex Room Kit Pro	Not configured	Call on Webex (1:1 call, no...
<input type="checkbox"/>	Wt55tplab@mx-collab.com	Not selected		Not configured	Premises Calling

Step 3. Open the device details, and locate **Calendar** section. Validate the **Email Address** configured for that device.

**Calendar**

Office 365  
● Activated - since yesterday at 6:44 PM [See history](#)

Email Address **Dx70-2@mx-collab.com**

In-Room Booking Off

[View Scheduled Meetings](#)

**Email Address** assigned to the device, must match the device **Workspace** display name on Control Hub, and **Username and email** on O365 **User** configuration. In case this information does not match, Control Hub is not able to identify and forward the meeting to the proper device.

**Calendar** ⚙️

Office 365  
● Activated - since yesterday at 6:44 PM See history

Email Address Dx70-2@mx-collab.com ↔️ dx70-2@mx-collab.com

In-Room Booking Off

[View Scheduled Meetings](#)

---

**DX** **DX\_70\_2**

[Reset password](#) [Block sign-in](#) [Delete user](#)

[Change photo](#)

[Account](#) [Devices](#) [Licenses and apps](#) [Mail](#) [OneDrive](#)

**Username and email**  
 DX70-2@mx-collab.com  
[Manage username and email](#)

**Note:** This field is not case sensitive. However, it must match exactly any other letter or symbol.

## Verify

Example with logs from a viable Scenario:

When everything is in place and fully operational, you can validate the implementation works properly on three different perspectives:

Device Calendar on Webex Control hub shows the scheduled meeting with **Start, End, Duration** and **Organizer** meeting details:

📅 Showing scheduled meetings for the next 24 hours.  
● Busy - in a meeting scheduled to end in 29 minutes

Today

Start	End	Duration	Organizer
4:00 PM	4:30 PM	0:30	aubaldor@mx-collab.com

Device shows the One Button to Push, along with the MS Teams Icon on the touch panel:

## Axel Ubaldo

16:00 - 16:30 05:37 · In progress

👤 Organized by aubaldor@mx-collab.com

Join

📅 No more meetings today



Call



Join Webex



Messages

Additionally, this can be verified in **All.log** file from endpoint logs, you can see the next information:

It contains the instruction `calendar.meeting.create` and a unique TrackingID. MSTEAMS is listed as the meeting Type:

```
2021-07-02T15:51:49.571-05:00 appl[2073]: Wx2 I: NotificationChannel: calendar.meeting.create, trackingid ccc_d0965d59-34ea-437e-9c09-c621e871e873 2021-07-02T15:51:49.572-05:00 appl[2073]: Wx2[3]: CalendarClientImpl::on_meeting_updated_event 2021-07-02T15:51:49.573-05:00 appl[2073]: Wx2[1]: Inserting new meeting - organizer='7ad83eb6-549d-4282-86a4-bf3c05e4b6f3' start='2021-07-02T21:00:00.000Z' id='8fd64402-f665-6bd3-bf15-be436bbe2c97' meetingJoinType='MSTEAMS' meetingJoinURI=true meetingJoinURL=true webexURI=false spaceURI=false callURI=false" new meeting - organizer='7ad83eb6-549d-4282-86a4-bf3c05e4b6f3' start='2021-07-02T21:00:00.000Z' id='8fd64402-f665-6bd3-bf15-be436bbe2c97' meetingJoinType='MSTEAMS' meetingJoinURI=true meetingJoinURL=true webexURI=false spaceURI=false callURI=false"
```

An update event from Webex is pushed to the endpoint:

```
2021-07-02T15:51:49.579-05:00 appl[2073]: Wx2[5]: Creating new Meeting (id=2) 2021-07-02T15:51:49.579-05:00 appl[2073]: Wx2[5]: Attaching CalendarEvent (id=8fd64402-f665-6bd3-bf15-be436bbe2c97) to Meeting (id=2) 2021-07-02T15:51:49.579-05:00 appl[2073]: Wx2 I: Wx2MeetingsHandlerImpl::meetings_updated: num meetings=1
```