



Intel Unite® Plugin for Microsoft* Teams

Plugin Guide

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1 Introduction

The Intel Unite® plugin for Microsoft* Teams enables users to share content across Microsoft* Teams meetings and the Intel Unite® app on a hub or client. This document describes the prerequisites and installation procedure, and explains how to use the plugin.

1.1 Audience

The intended audience for this document includes end-users, engineers, and IT professionals who are responsible for using, installing, configuring, or maintaining the Intel Unite® software.

1.2 Plugin Overview

The Intel Unite® plugin for Microsoft* Teams is a solution for sharing content across Microsoft Teams meetings and the Intel Unite® app on a hub or client. The plugin runs on the hub of the Intel Unite® software and manages an email account specific to each hub, in order to set, modify, join, and decline meetings. By default, the plugin will manage calendar invites, accepting new and updated meetings, and declining invites that conflict with the hub calendar.

1.3 Prerequisites

The Intel Unite® plugin for Microsoft* Teams will be installed on the hub after being uploaded to the server. It has the following requirements:

- Intel Unite® software for the server, version 4.2.34014 or greater.
- Intel Unite® software for the hub, version 4.2.34014 or greater.
- Intel Unite® software for the client, version 4.2.34014 or greater.
- Microsoft Office 365* or Microsoft* Exchange 2010 or greater for the hub.
- Microsoft Teams installed on the hub.
- An English-language operating system installed on the hub. (If a multilingual user interface [MUI] pack is installed, English must be set to the default language. Other languages are not supported at this time.)

1.3.1 Microsoft Office 365* and Microsoft* Exchange

An email account and access to the Office 365 or Exchange Web Service (<https://<server>/EWS/Exchange.asmx>) are needed for each hub because each hub requires a unique email/calendar that can be scheduled as a resource when creating a meeting.

The account needs access to read/write its own calendar, and access to sign into Microsoft Teams. By default, the app does the following:

- Manages calendar invites.
- Sends accept messages for new and updated meetings.
- Sends decline messages for invites that conflict with existing schedules.



Note: If using Microsoft Exchange, the account type must be an email account, configured Exchange-side when the account is created. If the account is not an email account, the plugin will not work correctly. Contact your IT administrator to properly configure the account.

2 Installation

Follow the steps in this section to install the Intel Unite® plugin for Microsoft® Teams.

2.1 Upload and Approve Package Files

Follow the steps below to download the package files and upload them to the admin portal:

1. Open a web browser and browse to <https://uniteappshowcase.intel.com/plugins>.
2. Select the Microsoft Teams plugin and download its contents.
3. Browse to the admin portal (<https://<FQDN of Server>/intelunite/admin>).
4. Log into the admin portal with an account that has permission to upload packages.
5. Click **Device Management**, then select **UPLOAD PACKAGE** from the drop-down menu.
6. Select the `Teams.Module.cab` file and click the **Open** button.
7. Confirm the appearance of the Success message.
8. Repeat steps 5 through 7 for the following .cab package files, unless they are already uploaded and approved:
 - `ExchangeCalendarReader.Module.cab`
 - `ScheduleView.Module.cab`
9. Click **Device Management**, then select **FEATURES/APPS** from the drop-down menu.
10. Click the **Package Approval** tab.
11. Click the **Approve** button next to each of the packages listed in the steps above.

2.1.1 .Cab Package File Functions

The .cab files in the previous section provide the following functions:

2.1.1.1 Teams.Module.cab

This is the Intel Unite® plugin for Microsoft® Teams. It provides the following controls to Microsoft Teams:

- Join/leave the meeting.
- Mute/unmute meeting audio.
- Share content across Microsoft Teams meetings and the Intel Unite® app on a hub or client.

2.1.1.2 ExchangeCalendarReader.Module.cab

This is the Intel Unite® plugin for Exchange Calendar Reader. It provides the following functions:

- Monitors Office 365/Exchange for new meetings.
- (Optional) Accepts/declines meetings (manages calendar).
- (Optional) Displays meetings on the hub display via the Intel Unite® plugin for Schedule View. This is a list of meetings the hub will attend.
- (Optional) Displays toast messages before meetings start.

2.1.1.3 ScheduleView.Module.cab

This is the Intel Unite® plugin for Schedule View. It displays a list of meetings on the hub display in a partial view. The list comes from other apps. There is an API that allows other plugins to add their meetings to the schedule view. This module is used by several plugins, such as the Intel Unite® plugins for Exchange Calendar Reader, Skype, Zoom, Cisco Telepresence, and others.

2.1.1.4 GoogleCalendarReader.Module.cab

This is the Intel Unite® app for Google Calendar Reader. It provides the following functions:

- Monitors Google Calendar for new meetings.
- Accepts/declines meetings (manages calendar).
- (Optional) Displays meetings on the hub display via the Intel Unite® plugin for Schedule View. This is a list of meetings the hub will attend.

2.1.2 Download Package Files and Install on the Hub

Exchange Calendar Reader and Microsoft Teams must both be installed on the hub for the plugin to function. If both are already installed on the hub, skip to [Section 2.1.3](#).

Follow the steps below to download the package files and upload them to the admin portal:

1. From a hub, open a web browser and browse to <https://uniteappshowcase.intel.com/plugins>.
2. Select the Microsoft Teams plugin and download its contents.



Note: Alternatively, the files can be downloaded from any computer to a portable drive, which can be inserted to any desired hubs.

3. Open the downloaded folder and run following installers:
 - `ExchangeCalendarReader.Installer.mui.msi`
 - `GoogleCalendarReader.Installer.mui.msi`
 - `Teams.Module.Installer.mui.msi`
4. Follow the instructions in each installer's wizard when prompted. Refer to [Section 2.1.2.1](#) for command-line installation (silent installation).
 - If using Basic Authentication for Exchange Calendar Reader, the following information is required:
 - Exchange Server URL
 - Hub email address (Exchange username) and password
 - If using OAuth for Exchange Calendar Reader, the following information is required:
 - Tenant ID
 - Client ID
 - Client Secret



Note: For solutions using OAuth, registry with the Microsoft* Identity Platform is required. Refer to [Appendix A](#) for details.

- If using Google Calendar Reader, the following information is required:
 - Google Project and .json file path
 - Google profile

2.1.2.1 Command Line/Silent Installation

Open a command prompt with administrative rights and enter the string for the desired configuration below:

2.1.2.1.1 Exchange Calendar Reader - Basic Authentication

```
msiexec /i ExchangeCalendarReader.Installer.mui.msi /qn AUTHMODE=0 HUBPASSWORD=<Hub Email Password> SERVERPATH=<Exchange Server URL> HUBEMAIL=<Hub Email Address>
```

Replace the following values with the appropriate information from [Section 2.1.2](#) and remove the brackets:

- `<Hub Email Password>`
- `<Exchange Server URL>`

- <Hub Email Address>

2.1.2.1.2 Exchange Calendar Reader - OAuth

```
msiexec /i ExchangeCalendarReader.Installer.mui.msi /qn AUTHMODE=1 HUBEMAIL=<Hub Email Address> TENANTID=<Tenant ID> CLIENTID=<Client ID> CLIENTSECRET=<Client Secret>
```

Replace the following values with the appropriate information from [Section 2.1.2](#) and remove the brackets:

- <Hub Email Address>
- <Tenant ID>
- <Client ID>
- <Client Secret>

2.1.2.2 Google Calendar Reader Authentication

Before installing Google Calendar Reader, you will need to enable APIs, set up OAuth consent, and create authorization credentials. After creating the authorization credentials, run the installer for the Intel Unite® apps for Google Calendar Reader and Google Meet.

Note: The procedures to enable APIs, set up OAuth consent and create authorization credentials only need to be completed once per organization. The credential file is required for every hub that is added.

2.1.2.2.1 Enable APIs

Applications that call APIs need to enable APIs in the API console. Use these instructions to enable APIs:

1. Open the API Library (<https://console.developers.google.com/apis/library>) in the Google API console.
Note: If not already logged in, you will be prompted to log in to your Google account.
2. If prompted, select a project or create a new one.
3. Associate the project with the organization that contains the users whose calendars should be read by the app.
4. Select the Google Calendar API, then select **Enable**.
Note: The API Library lists all available APIs, grouped by product family and popularity. If the API you want to enable is not visible in the list, use search to find it, or click View All in the product family it belongs to.
5. If prompted, enable billing.
6. Accept the API terms of service.

2.1.2.2.2 Set Up OAuth Consent

1. In the menu, select **OAuth consent screen**.
2. Select whether you want an Internal or External user.
If you select Internal, the users are added from the Google Project organization. If you select External for testing, Google accounts will need to be added manually as test users.
Important: The app will display as unverified if you select External.
3. Fill out the registration information.
4. In the Scopes section of the app registration, select **.../auth/calendar.events**.
Note: The calendar events scope does not appear if you have not already enabled the Google Calendar API.

2.1.2.2.3 Create Authorization Credentials

Applications that use OAuth 2.0 to access Google APIs must have authorization credentials that identify the application to Google's OAuth 2.0 server. Use these steps to create authorization credentials.

1. Go to the Credentials page (<https://console.developers.google.com/apis/credentials>).
2. Select **Create credentials** > **OAuth client ID**.
3. Select the **Application Type**.
4. Enter the name of the OAuth client.
5. Select **Create**.
6. Download the client_secret.json file from the API console.
7. Store the .json file in a secure location that can be accessed by your application.

2.1.3 Add the App to the Hub Configuration

Follow the steps below from a system that is connected to the same network as the admin portal server.

1. Open a web browser and browse to the admin portal (<https://<FQDN of Server>/intelunite/admin>).
2. Log into the admin portal with an account that has permission to create/modify configurations.
3. Under **Device Management**, click **CONFIGURATIONS**.
4. Display the list of hub configurations by clicking **Hub Configurations**.
5. Select a hub configuration to add app capability.
6. Click **Edit** for that hub configuration.
7. Click the **plus** sign (+) next to Microsoft Teams, Exchange Calendar Reader, and Schedule View under **Available Features/Apps** and verify that all modules selected are now under **Selected Features/Apps**.
8. Click the **Save Changes** button.
9. Confirm that the hub device is assigned to a hub group that has the hub configuration with Intel Unite® plugin for Microsoft Teams assigned.

2.1.4 Configure Admin Portal Properties

The Intel Unite® plugin for Microsoft Teams has the following properties:

Table 1: Ultrasonic Join hub properties

Property	Description	Default Value
Automatically leave Microsoft Teams meetings	Automatically leave the Microsoft Teams meeting after all participants have disconnected from the hub. If set to True , the hub will automatically leave Microsoft Teams meetings and exit the app. If set to False , the hub will not leave the Microsoft Teams meeting and the app will continue running.	True
Disable plugin for non-moderators	If set to True , the plugin will not be available for non-moderators.	False

2.1.5 Disable Surveys on the Hub

Surveys for Microsoft Teams must be disabled on the hub. If surveys are not disabled, they can cause the Teams application and the Intel Unite® plugin to freeze. Follow the steps below to disable surveys for Microsoft Teams on the hub:

1. Open Microsoft Teams on the hub.
2. Click the **user icon** for the hub's Teams account from the top-right corner and select **Manage Account** from the drop-down menu.
3. Select **Privacy** from the menu on the left side of the Settings window.

4. Toggle off the switch next to **Surveys**.
5. Close the Settings window.

2.2 Select a Default Audio Device for the Hub

Once the Intel Unite® plugin for Microsoft Teams has been configured, a default audio device must be selected for the hub. If no default audio device is selected, the hub will fail to automatically join Microsoft Teams meetings. Follow the steps below to select a default audio device for the hub:

1. Schedule a meeting with Microsoft Teams and invite the email address associated with the hub.
2. From the hub, attempt to join the meeting. A pop-up window will appear.
3. Select the desired audio device from the panel on the right side of the pop-up window.
4. Click **Join now**, then leave the meeting.

2.3 Intel Unite® Plugin for Exchange Calendar Reader Module Properties

The properties that are used to configure ExchangeCalendarReader.Module are described in [Table 2](#) below.

Table 2: ExchangeCalendarReader.Module Properties

Value	Description	Default
Debug (Boolean)	True = Enables the use of a log for extra information. False = Disables the use of a log for extra information.	False
Enable fullscreen message (Boolean)	True = Enables the showing of the meeting list on the hub's Full Screen Interface. False = Disables the showing of the meeting list on the hub's Full Screen Interface.	False
Exchange check interval (Integer)	Number of seconds between Exchange server checks.	300
Manage calendar (Boolean)	True = Enables automatic acceptance of meeting invitations. False = Disables automatic acceptance of meeting invitations.	True
Room email (String)	Username of the room's Exchange account.	None

2.4 Intel Unite® Plugin for Schedule View Module Properties

The properties that are used to configure ScheduleView.Module are described in [Table 3](#) below.

Table 3: ScheduleView.Module Properties

Value	Description	Default
Debug	True = Enables the use of a log for extra information. False = Disables the use of a log for extra information.	False

Value	Description	Default
Show hub view (Boolean)	True = Displays the meeting list on the hub. False = Hides the meeting list on the hub.	True
Show toast messages (Boolean)	True = Displays toast messages before a meeting. False = Hides toast messages before a meeting.	False
Minutes before start of meeting alert (Integer)	Number of minutes before the start of meeting to show toast message.	5
Toast duration (Integer)	Duration of toast messages in seconds.	30
Toast frequency (Integer)	How often, in seconds, to toast message.	30

3 Plugin Flow

After following the instructions in [Section 2](#), the Intel Unite® plugin for Microsoft* Teams is ready for use. The typical plugin flow is described below:

1. The host (a Microsoft* Teams user) creates a Teams meeting and adds the hub to the invite list.



Note: Several meeting options can be configured when creating a Teams meeting. Refer to support.microsoft.com/teams for detailed instructions on how to configure Teams meetings.

2. Once the meeting has been created and the hub has been invited, the hub will automatically accept or decline the meeting based on availability as determined by Exchange Calendar Reader.
3. When the Teams meeting begins, the meeting list from the hub will be displayed.
4. Clients and hubs will display the following controls:
 - Join/Leave Meeting
 - Mute/Unmute Audio
 - Start/Stop Video
 - Start/Stop Sharing – Starts/Stops sharing content from your screen/window/application.



Note: Refer to support.microsoft.com/teams for detailed descriptions of Microsoft Teams features and controls.

5. While in session, content that is presented will automatically be shared from its source to both platforms. For example, if a user presents a screen, app, or window from Microsoft Teams, it will also be shared with all users of the Intel Unite® solution that are part of the same session.
6. When the Teams meeting concludes, the plugin will automatically clear the Teams chat log to ensure that following meetings do not display irrelevant conversation content from preceding meetings.

Appendix A: Solutions Using OAuth – Register with the Microsoft* Identity Platform

OAuth is an authorization protocol that allows unrelated servers and services to provide authenticated access to their assets without sharing login credentials. Solutions using OAuth need to register with the Microsoft* Identity Platform. The following information will be required:

- Client ID and Secret
- Tenant ID



Note: Registry with the Microsoft Identity Platform is not required for solutions with Basic Authentication. If using Basic Authentication, refer to the instructions in [Section 2.1.2](#).

Follow the steps below to register with the Microsoft Identity Platform:

1. Open a browser and navigate to the [Azure Active Directory admin center](#), then log in.
2. Select **Azure Active Directory** in the left-hand navigation, then select **App registrations** under **Manage**.
3. Select **New registration**. On the Register an application page, set the values as follows:
 - a. Set **Name** to a friendly name for your app.
 - b. Set **Supported account types** to the choice that makes sense for your scenario.
 - c. For **Redirect URI**, select **Public client/native (mobile & desktop)** from the drop-down menu and set the value to `urn:ietf:wg:oauth:2.0:oob`.
4. Choose **Register**. On the next page, copy the value of the Application (client) ID and save it for later use.
5. Select **API permissions** in the left-hand navigation under **Manage**.
6. Select **Add a permission**. On the Request API permissions page, select **APIs my organization uses**.
7. Search for **Office 365 Exchange Online** and select the **Office 365 Exchange Online** entry.
8. Select **Application permissions**, select **full_access_as_app**, then click **Add permissions**.
9. Select **Grant admin consent for <org name>** and accept the consent dialog.
10. Select **Certificates & Secrets** in the left-hand navigation under **Manage**.
11. Select **New client secret**, enter a short description, then select **Add**.
12. Copy the value of the newly added client secret and save it for later use.

Appendix B: Meetings Fail to Display with Resource Mailboxes

Meetings may fail to display on hubs if they have been scheduled using resource mailboxes with the default policy active. Before placing the meeting on the calendar, the Exchange Online calendar processing automatically deletes the email body of a meeting invite and rewrites the meeting subject to be the name of the meeting host. Because the meeting invite then lacks the necessary information, it can not be displayed. To ensure that meetings are not failing to display due to another root cause, check the logs in the %TEMP% folder. If there are any Microsoft Teams authentication errors, there may be an issue with the provided credentials. Assuming this issue is not present, the calendar processing policy must be set to leave the contents of invitation emails intact. Follow the steps below from a computer and account with administrative capabilities for the Microsoft 365 tenant:

1. Click the **Windows/Start** button and type `powershell`.
2. Right-click **Windows PowerShell** and select **Run as Administrator**. Click **Yes** on the pop-up dialogue box.
3. Enter or copy and paste the following commands to install the AzureAD PowerShell tool; press **Enter/Return** after each one:
 - `Install-PackageProvider -Name NuGet -RequiredVersion 2.8.5.201 -Force`
 - `Import-PackageProvider -Name NuGet -RequiredVersion 2.8.5.201`
 - `Install-Module AzureAD -Force`
4. Enter or copy and paste the following commands to connect to an AzureAD session; press **Enter/Return** after each one:
 - `$UserCredential = Get-Credential` (Enter the appropriate login credentials in the pop-up.)
 - `connect-azuread -credential $UserCredential`
 - `$Session = New-PSSession -ConfigurationName Microsoft.Exchange -`
`ConnectionUri https://outlook.office365.com/powershell-liveid/ -Credential`
`$UserCredential -Authentication Basic -AllowRedirection`
 - `import-pssession $session`
5. Enter or copy and paste the following command and press **Enter/Return** to set the calendar processing policy to retain the body of the invite email:
`Set-CalendarProcessing -Identity "DoorTablet" -DeleteComments $false`
6. Recreate the meeting invitations for any meetings that were not displayed due to this issue.



Note: After the policy has been changed, meetings that were previously not displayed will need to have their invitations re-sent before they will be displayed.

Appendix C: Users Experience Input Lag When Using the Intel Unite® Plugins for Zoom* and Microsoft* Teams Simultaneously

There is currently a known issue where users will experience input lag when using the Intel Unite® plugins for Zoom* and Microsoft* Teams simultaneously due to processes using the Windows automation library colliding. For the best user experience, Intel recommends that these plugins not be used simultaneously.