



Deploy the TMS integration with Google Calendar

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Overview of the TelePresence Management Suite integration

The TelePresence Management Suite (TMS) scheduling option allows the Hybrid Calendar to leverage your on-premises resource management and conference hosting environment for simplified meeting scheduling. This integration also extends the meeting join button to a wide range of video devices.

The integration currently works with the cloud-based Hybrid Calendar for Office 365 or the cloud-based Hybrid Calendar for Google Calendar. To deploy the integration, you first set up the cloud-based service. Then you install the calendar connector on your on-premises Expressway-C and configure the connector for the TMS scheduling option.



Note You can't deploy the TMS scheduling option if your Webex organization already has the calendar connector configured for the Hybrid Calendar. The TMS integration must be the only calendar connector in the organization.

To simplify meeting scheduling, users can type **@meet** in the location field of their calendar invitation. In Control Hub you can configure the action that the Hybrid Calendar takes for the **@meet** keyword:

You choose this option for @meet in Control Hub	How the connector schedules in response to @meet	How the connector handles the join button with the TMS integration
<p>TelePresence Management Suite</p> <p>Note Choose this option to deploy the TMS integration.</p>	<p>Schedules the meeting using TMS, and adds join details for a meeting hosted with on-premises conference bridge resources.</p> <p>This option provides unique, meeting-specific meeting IDs.</p>	<p>Just before the meeting starts, TMS provides the join button for invited video devices that are registered on-premises.</p> <p>Note The join button for on-premises endpoints currently only works with meetings scheduled with on-premises conference bridge resources. The integration currently does not provide the join button to on-premises endpoints for Webex Personal Room meetings.</p> <p>The join button is also available in Webex Teams and on cloud-registered Webex room and desk devices.</p>
<p>Webex App space (or @meet:space)</p> <p>Note This setting is the default. If you choose another option, users can type @meet:space to override that action with this one.</p>	<p>Creates a space in Webex App and adds join details for it.</p> <p>TMS is not required or used.</p>	<p>The join button is available in Webex Teams and on cloud-registered Webex room and desk devices.</p>
<p>Personal Room (or @meet:myroom)</p> <p>Note If you choose another option, users can type @meet:myroom to override that action with this one.</p>	<p>Schedules the meeting using the organizer's personal room join details.</p> <p>TMS is not required or used.</p>	<p>The join button is available in Webex App and on cloud-registered Webex room and desk devices.</p>

When you configure your video devices with room mailboxes in Google Calendar, users can invite the devices to meetings and the Cisco TMS ensures that the devices receive the green **Join** button. OBTP is sent to these types of devices:

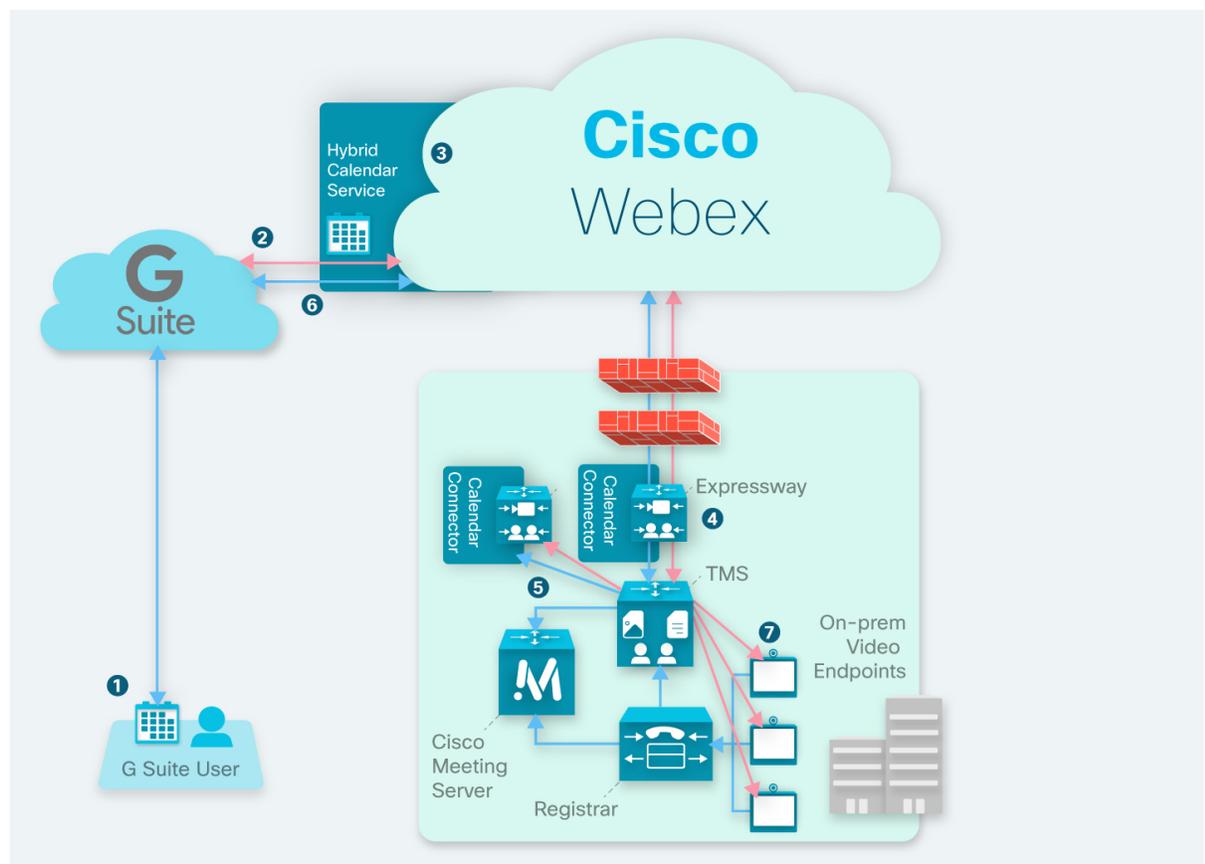
- Video devices that are registered to on-premises Unified Communications Manager.
- Video devices that are registered to on-premises VCS or Expressway.
- Cloud-registered Webex room and desk devices that are configured as places in Control Hub.

Scheduling flow with TMS

The following diagram illustrates how the Hybrid Calendar interacts with TMS and the calendar system to provide the **Join** button for a meeting that is hosted by on-premises conference bridge resources.

This scheduling flow assumes that the administrator has set up the integration according to the steps in [Deployment task flow for the TMS integration](#), including configuring **@meet** for the **TelePresence Management Suite** action and setting up room mailbox addresses for devices in Google Calendar and then adding those addresses to TMS.

Figure 1: Hybrid Calendar scheduling flow with Google Calendar



1. The organizer creates a meeting in Google Calendar and then adds **@meet** in the **Location** field. The organizer invites users and video devices from the Google Calendar directory.

2. Google Calendar sends a notification to the Hybrid Calendar .
3. The Hybrid Calendar requests and receives the encryption key, and then uses it to encrypt the meeting information.
4. The Hybrid Calendar validates meeting creation and recipients and the calendar connector sends details to TMS.
5. The TMS creates the meeting on the on-premises conference bridge and sends the join details back to the Calendar Connector.
6. The connector updates the meeting invitation with the join details that are provided by TMS, and the updated join details appear when invitees view the meeting in Google Calendar.
7. Just before the meeting time, the video devices that were invited to the meeting receive OBTP information from the TMS.

Requirements for the TMS integration

This integration requires the following components:

- The cloud-based Hybrid Calendar with Google Calendar, deployed and configured
- Expressway (to serve as the connector host between your TMS and the Hybrid Calendar), installed and running
 - Download from software.cisco.com at no charge.
 - We recommend the latest release of Expressway for connector host purposes. See [Expressway connector host support for Hybrid Services](#) for information about Expressway version support.
 - We currently support either a single Expressway node or two nodes operating as single-node clusters, dedicated to hosting this integration. We recommend two hosts. If the active host goes down, after a couple of minutes, new meeting requests are sent to the other host.

The hosts must not be running any other hybrid service connectors. Also, the TMS integration hosts must be the only calendar connector hosts in your Webex App. organization.
 - We recommend a maximum of 10,000 scheduling users for this integration.
- TelePresence Management Suite (TMS) 15.9 or later, installed and running, with the following configuration in place:
 - A valid CA-signed server certificate must be installed. This integration does not support self-signed certificates.
 - Each endpoint to be booked must already be added to TMS and licensed for general TMS usage.
 - For each Expressway connector host that you deploy, TMS must have one or more option keys, depending on your deployment size. The integration uses the same option keys that are required to book endpoints with TMSXE, which are either of the following:
 - Small deployments—One TelePresence Management Suite Extension for Microsoft Exchange (TMSXE) option key for every 25 telepresence endpoints that are integrated with TMS (part number L-TMS-MSEX-25).

- Larger deployments—One Application Integration Package option key (part number L-TMS-APPINT).

For example, if you deploy two connector hosts with 50 telepresence endpoints, you would need either four L-TMS-MSEX-25 option keys or two L-TMS-APPINT option keys for the integration on TMS.

If both types of option key are present, TMS only uses the Application Integration Package key.

If you already have TMSXE or Application Integration Package option keys:

- If you are not currently using the option key, you can use it with the Hybrid Calendar integration.
- If you are using the option key with TMSXE, contact your partner or sales team to request a second option key (or set of keys) for the Hybrid Calendar integration. If you plan to migrate from TMSXE within a short period of time, you can request a 90 day trial, and then reuse your original option key(s) once the migration to the Hybrid Calendar is complete.
- On-premises conference bridge resources must be configured (Meeting Server recommended).
- Users' time zones in TMS must match their time zones in the calendar system. For instructions on setting the time zone in TMS, see "User Administration" in the applicable [Cisco TelePresence Management Suite Administrator Guide](#).

Deployment task flow for the TMS integration

To add the TMS integration to your Hybrid Calendar with Google Calendar deployment, perform the following tasks.

Procedure

	Command or Action	Purpose
Step 1	Complete the prerequisites for the TMS integration, on page 6	
Step 2	Configure the @meet Keyword Action, on page 6	Allows users to schedule with the TMS integration.
Step 3	Configure Google room mailboxes in TMS, on page 7	Maps video device systems in TMS to their room mailbox email addresses in Google Calendar, so that the Hybrid Calendar can recognize when users invite the devices to meetings and coordinate OBTP with TMS.
Step 4	Register Expressway-C Connector host to Webex Cloud, on page 8	Connects your Expressway to the Webex cloud. This creates a resource in https://admin.webex.com and downloads connector software on to the Expressway.
Step 5	Link the Calendar Connector to Cisco TMS, on page 10	Configures the details that the Calendar Connector needs to communicate with TMS

	Command or Action	Purpose
		and adds on-premises conference bridge telephony details to invitations, if applicable.
Step 6	Add a meeting server to TMS, on page 11	Enables the integration to schedule @meet meetings on-premises.
Step 7	Test the Google Calendar and TMS integration, on page 11	Verifies the integration with TMS.

Complete the prerequisites for the TMS integration

Procedure

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- Step 1** If you haven't already done so, set up Hybrid Calendar with Google Calendar, using the following chapters:
- a. [Prepare Your Environment](#)
 - b. [Deploy cloud-based Hybrid Calendar with Google Calendar](#)
- Step 2** Make sure you have met all of the [Requirements for the TMS integration, on page 4](#).
- Step 3** Provide the following port access for the Expressway that will serve as your Calendar Connector host for the TMS integration:
- Port access for HTTPS or secure web sockets outbound from Expressway to *.rackcdn.com, *.ciscopark.com, *.wbx2.com, *.webex.com, *.webexcontent.com, and *.clouddrive.com: TCP port 443 (secure)
 - Port access for HTTPS outbound from Expressway to TMS: TCP port 443 (secure)
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Configure the @meet Keyword Action

To provide the TMS integration functionality to users, configure @meet in Control Hub Using an organization administrator account.

Procedure

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- Step 1** Sign in to the customer view of <https://admin.webex.com/login>.
- Step 2** In the left-hand navigation pane, under **Services** click **Hybrid**.
- Step 3** From the Hybrid Calendar card for Exchange, click **Edit settings**.
- Step 4** In the **Keywords** section, for @meet, choose **Cisco TelePresence Management Suite**.

Step 5 Click **Save**.

Configure Google room mailboxes in TMS

Use this procedure to add the Google Calendar room mailbox addresses of video devices one at a time in TMS. Alternatively, you can use Bulk Upload to configure multiple addresses. For instructions, see "Bulk Room Email Mapping for Endpoints" in the applicable [Cisco TelePresence Management Suite Administrator Guide](#).

Before you begin

- Each video system that users want to add to meetings must have a room mailbox in Google in order for TMS to provide OBTP. For help creating room mailboxes, see [Manage Calendar resources](#) for more information.
- Make sure that you have checked the **My organization uses calendar resources (such as conference devices)** check box in Control Hub, and entered the name of an authorized access control list administrator account. (From <https://admin.webex.com>, go to **Services**, find the hybrid calendar card, and then go to the Google **Settings**.)
- Gather the credentials of an organization domain account with Admin privileges to TMS.

Procedure

- Step 1** If you have not already done so, create the room mailboxes in the Google Admin console.
- Step 2** From a web browser, sign in to TMS.
- Step 3** Go to **Systems > Navigator**.
- Step 4** Locate and click the video system to configure with the room mailbox address.
- Step 5** On the **Summary** tab, click **Edit Settings** and enter the room mailbox address in the Email Address field.

Register Expressway-C Connector host to Webex Cloud

The screenshot shows the Cisco TelePresence Management Suite (TMS) interface. The main window displays the configuration for a 'Demo Room'. The 'General' tab is selected, and the 'Email Address' field is highlighted with a red box. The 'Email Address' field contains the text 'office355demo@domain.com'. Other fields include Name (Cisco Demo Room), System Type (Cisco TelePresence SX20), System Usage Type (Meeting Room), System Connectivity (Reachable on LAN), Network Address (10.11.22.33), Manufacturer (TANDBERG), MAC Address (CA:DB:A4:64:C1), IP Zone (Bangalore), Time Zone (GMT + 05:30 Calcutta, Chennai, M), and Password (masked). The 'Configuration' section shows Software Version (TC7.3.11.c1479a9) and Hardware Serial No (FT118240036). The 'Call Settings' section includes Maximum IP Bandwidth (8000), Max Number of Video Calls (1), Max Number of Audio Calls (2), Microphone (On), Volume (35), and Autoanswer (On). The 'Network Settings' section shows H.323 Call Setup Mode (Gatekeeper) and SIP Mode (On).

Step 6 Click **Save**.

Step 7 Repeat steps 4 through 6 for each video device.

Register Expressway-C Connector host to Webex Cloud

Use this procedure to register an Expressway-C node to the cloud and download connector software onto the Expressway-C. (We currently support either a single Expressway node or two Expressway nodes operating as separate single-node clusters for this integration.)

The TMS integration uses Hybrid Calendar for Microsoft Exchange setup process, but ultimately you will link the Calendar Connector to TMS. Once you link to TMS, you must not link any connector in your Webex App organization to Microsoft Exchange.

Before you begin

- Make sure your Expressway-C is running on a version that's supported for hybrid services. See the *Supported Versions of Expressway for Cisco Webex Hybrid Services Connectors* documentation (<https://help.webex.com/article/ruyceab>) for more information about which versions are supported for new and existing registrations to the cloud.
- Sign out of any open connections to the Expressway-C interface that are open in other browser tabs.
- If your on-premises environment proxies the outbound traffic, you must first enter the details of the proxy server on **Applications > Hybrid Services > Connector Proxy** before you complete this procedure. Doing so is necessary for successful registration.

Procedure

- Step 1** Sign in to the customer view of <https://admin.webex.com/login>.
- Step 2** From the customer view in <https://admin.webex.com>, in the left-hand navigation pane under **Services** click **Hybrid** , and then choose one:
- If this is the first connector host you're registering, click **Set up** on the Hybrid Calendar for Microsoft Exchange card, and then click **Next**.
 - If you've already registered one connector host, click **View all** on the Hybrid Calendar for Microsoft Exchange card, and then click **Add Resource**.
- The Webex cloud rejects any attempt at registration from the Expressway web interface. You must first register your Expressway through Control Hub, because the Control Hub needs to hand out a token to the Expressway to establish trust between premises and cloud, and complete the secure registration.
- Note** Do not set up this integration if you already have an Expressway connector host for Microsoft Exchange or Office 365 registered for your organization.
- Step 3** Choose **Register a new Expressway with its Fully Qualified Domain Name (FQDN)**, enter your Expressway-C IP address or fully qualified domain name (FQDN) so that Webex creates a record of that Expressway-C and establishes trust, and then click **Next**. You can also enter a display name to identify the resource in Control Hub.
- Caution** To ensure a successful registration to the cloud, use only lowercase characters in the hostname that you set for the Expressway-C. Capitalization is not supported at this time.
- Step 4** Click **Next**, and for new registrations, click the link to open your Expressway-C. You can then sign in to load the **Connector Management** window.
- Step 5** Decide how you want to update the Expressway-C trust list:
- A check box on the welcome page determines whether you will manually append the required CA certificates to the Expressway-C trust list, or whether you allow Webex to add those certificates for you.
- Choose one of the following options:
- Check the box if you want Webex to add the required CA certificates to the Expressway-C trust list.
- When you register, the root certificates for the authorities that signed the Webex cloud certificates are installed automatically on the Expressway-C. This means that the Expressway-C should automatically trust the certificates and be able to set up the secure connection.
- Note** If you change your mind, you can use the **Connector Management** window to remove the Webex cloud CA root certificates and manually install root certificates.
- Uncheck the box if you want to manually update the Expressway-C trust list. See the Expressway-C online help for the procedure.
- Caution** When you register, you will get certificate trust errors if the trust list does not currently have the correct CA certificates. See [Certificate Authorities for Hybrid Services](#).
- Step 6** Click **Register**. After you're redirected to Control Hub, read the on-screen text to confirm that Webex identified the correct Expressway-C.
- Step 7** After you verify the information, click **Allow** to register the Expressway-C for Hybrid Services.

- Registration can take up to 5 minutes depending on the configuration of the Expressway and whether it's a first-time registration.
 - After the Expressway-C registers successfully, the Hybrid Services window on the Expressway-C shows the connectors downloading and installing. The management connector automatically upgrades itself if there is a newer version available, and then installs any other connectors that you selected for the Expressway-C connector host.
 - Each connector installs the interface pages that you need to configure and activate that connector.
- This process can take a few minutes. When the connectors are installed, you can see new menu items on the **Applications > Hybrid Services** menu on your Expressway-C connector host.

Troubleshooting Tips

If registration fails and your on-premises environment proxies the outbound traffic, review the Before You Begin section of this procedure. If the registration process times out or fails (for example, you must fix certificate errors or enter proxy details), you can restart registration in Control Hub.

What to do next

Repeat the steps in this task to register the second Expressway connector host if applicable.

Link the Calendar Connector to Cisco TMS

Before you begin

The TMS must have a valid CA-signed server certificate installed. This integration does not support self-signed certificates.

Procedure

- Step 1** From the Expressway-C connector host, go to **Applications > Hybrid Services > Calendar Service > Cisco Conferencing Services Configuration**, and then click **New**.
- Step 2** Select **Type** as **TMS** under **Conferencing Services Type**.
- Step 3** Enter the username and password of the TMS administrator account that you want the calendar connector to use to connect to TMS.
- Note** Enter only the username, without the domain, in the username field.
- Step 4** Under **TMS Server Details**, enter the fully qualified domain name (FQDN) and domain in the respective fields.
- Note** Enter the NETBIOS domain name for the **TMS Domain Name** field.
- Step 5** Under **Telephony Invite Details**, enter the appropriate information for **Toll Identifier**, **Toll Number**, **Toll Free Identifier**, **Toll Free Number**, and **Global Call-in Numbers (URL)**.

- Step 6** Click **Save**.
TMS is listed under **Cisco Conferencing Services Configuration**.
- Step 7** Click **TMS** and click **Test Connection**.
The calendar connector tests the connection to the TMS environment. If the test returns an error message, correct any errors in the configuration and try the test again.
- Step 8** When you've confirmed the connection, go to **Applications > Hybrid Services > Connector Management** and click **Calendar Connector Service**.
- Step 9** Select **Enabled** from the **Active** drop-down list and click **Save**.
The calendar connector starts and the status changes to **Running**.
-

Add a meeting server to TMS

When you configure **@meet** to use the **TelePresence Management Suite** action, the TMS uses any bridge configured in the **Administrative Tools > Configuration > Conference Settings > Advanced**.

Procedure

To allow users to schedule meetings on a meeting server using the Hybrid Calendar integration with TMS, add the server using the steps in the meeting server section of the applicable [Cisco TelePresence Management Suite Administrator Guide](#).

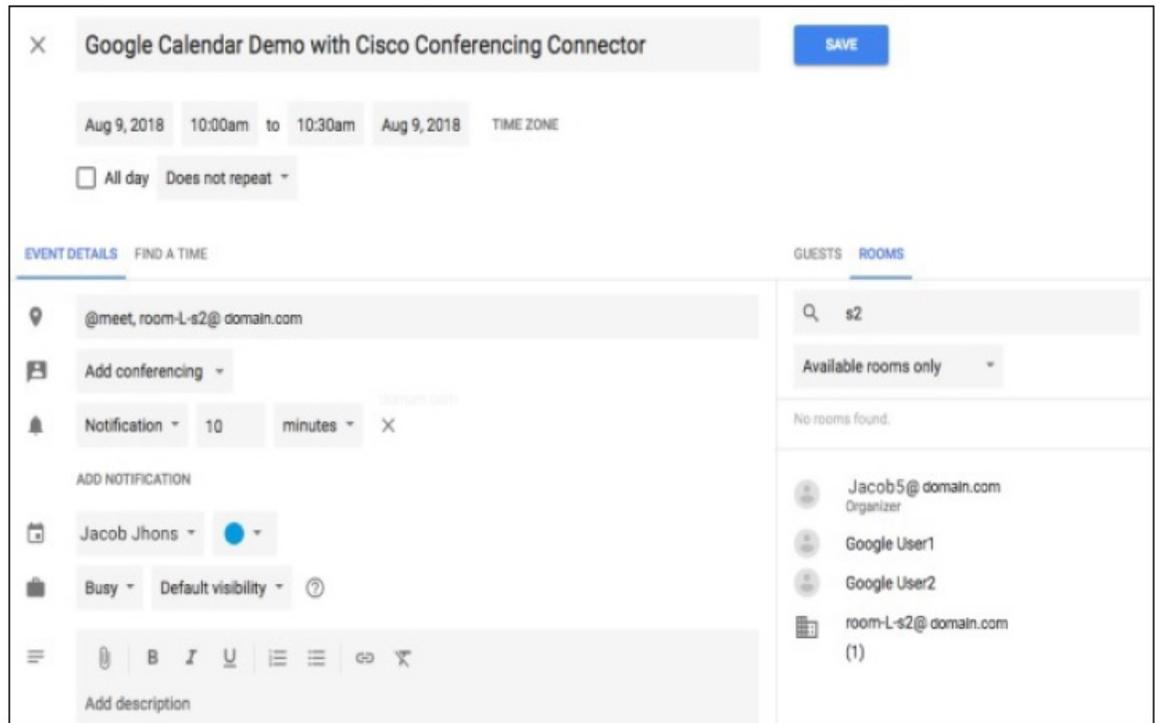
Test the Google Calendar and TMS integration

Use these steps to schedule a test meeting and verify the TMS integration.

Procedure

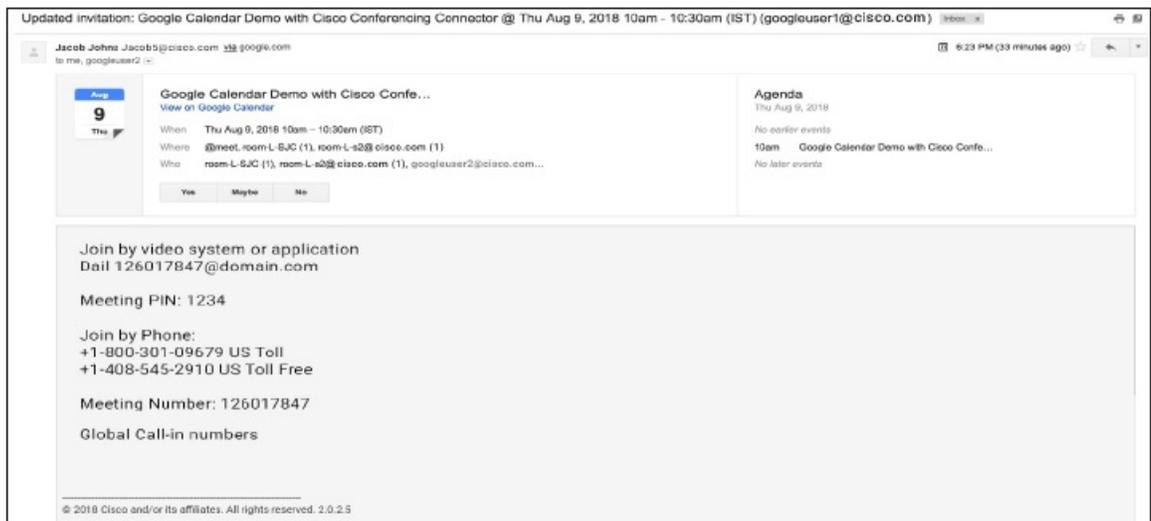
- Step 1** Test meeting scheduling with **@meet**:
- In a web browser, sign in to <https://calendar.google.com> with a Google Calendar user account that is enabled for Hybrid Calendar.
 - Double-click today's date to schedule the test meeting.
 - Enter an event title in the text box where **Add title** displays.
 - Enter **@meet** in the text box where **Add location** displays.

Note Enter only one keyword in this field. Grouping of keywords, for example **@meet @webex**, is not supported.



- e) In the **Guests** tab, invite users and add rooms (or other video devices) for OBTP.
- f) Send the invitation.

The Hybrid Calendar updates the meeting with the join details.



Step 2 In a web browser, sign in to TMS and go to **Booking > List Conferences**.

ID	Title	Private	Date	Start Time (UTC+05:30)	End Time (UTC+05:30)	Owner	Type	External Service
7811	Google Calendar Demo with Cisco Conferencing Connector	No	8/9/2018	10:00 AM	10:30 AM	b.a	One Button To Push	Calendar Connector

The test meeting and other meetings that are scheduled with @meet are listed in TMS with 'Calendar Connector' in the **External Service** column.

Note You cannot edit calendar connector meetings in TMS.

Notable behavior for the TMS integration with Google Calendar

This section lists limitations and notable behavior for the TMS integration with Google Calendar.

For currently open issues, see the "Cisco TMS Integration with Google Calendar" list in the Google Calendar (Cloud-Based Service) section of the [Known Issues with Hybrid Calendar](#).

- Editing a meeting series during an active instance of the series results in the following behavior:
 - TMS updates all instances other than the in-progress instance.
 - The currently active instance becomes an exception in TMS.

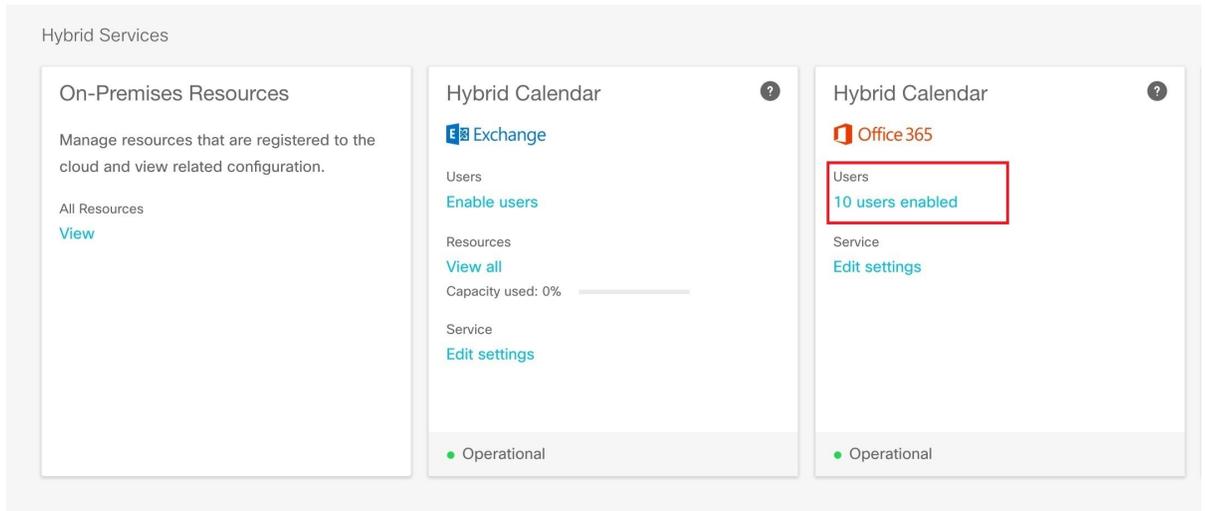
This is the expected behavior, but differs from the behavior of Google Calendar, which updates the active instance as well.

Troubleshoot the TMS integration

Use these tips to check the status of the various components of the TMS integration with the Hybrid Calendar.

Procedure

- Step 1** Sign in to the customer view of <https://admin.webex.com/login>.
- Step 2** In the left-hand navigation pane, under **Services** click **Hybrid**.
- Step 3** Verify the number of users who are enabled for the Hybrid Calendar.



Step 4 Check the status of the connectors in Control Hub.

- a) In the left-hand navigation pane, under **Services** click **Hybrid**, and then click **All Resources** from the on-premises resources card.
- b) From the resource card for the TMS integration, click the **Node** link below the resource FQDN or IP address.

< [demo-expressway.domain.com](#) Nodes Settings

Connectors	Status	Version	
ccg-qa-exp-c1.tmsxe0365.com		Platform Version: X8.11.1Alpha1 Serial: 07656963 Actions	
Management	● Running	8.10-1.0.321348	
Calendar	● Running	8.10-1.0.5263	

Step 5 Compare the status above to the status of the connectors on the Expressway connector host.

From Expressway, go to **Applications > Hybrid Services > Connector Management**.

Connector Management

Hybrid Services

This Expressway cluster is registered with the Cisco Collaboration Cloud.
[Cisco Collaboration Cloud certificate management](#) - you are currently allowing Cisco Collaboration Cloud to add required CA certificates to the Expressway trust list
<https://admin.webex.com> - view the status of your clusters and connectors

Connector management

Click a connector name below to view or modify the connector details.

Service	Status	Version	Active	Configuration
Management Connector	Running	8.10-1.0.321348	Enabled	
Calendar Connector	Running	8.10-1.0.5263	Enabled	Configure Microsoft Exchange Servers Configure Cisco Conferencing Services

Enable and collect calendar connector logs

Procedure

- Step 1** From a web browser, go to `https://<Expressway connector host name or IP address>/setaccess`.
- Step 2** In the **Access password** field, enter `qwertsys`.
- Step 3** Click **Enable access**.
A new top-level Experimental menu appears to the right of the existing menu items.
- Step 4** Navigate to **Experimental > Hybrid Services Log > Hybrid Services Log Levels**.
- Step 5** Select **'hybridservices.c_cal'** and click **'Set to debug'**.
- Step 6** To collect logs, navigate to **Experimental > Hybrid Services Log > Hybrid Services Log**.
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Enable and collect calendar connector logs