Cisco TelePresence Management Suite Extension for Microsoft Exchange

Administrator Guide

Version 3.1

Contents

Introduction

This document provides a functional overview of Cisco TelePresence Management Suite Extension for Microsoft Exchange. The guide also details regular administrative tasks and troubleshooting of a Cisco TMSXE deployment.

For instructions on installation and initial configuration of the product, see *Cisco TelePresence Management Suite Extension for Microsoft Exchange Installation Guide*.

System architecture and overview

System overview
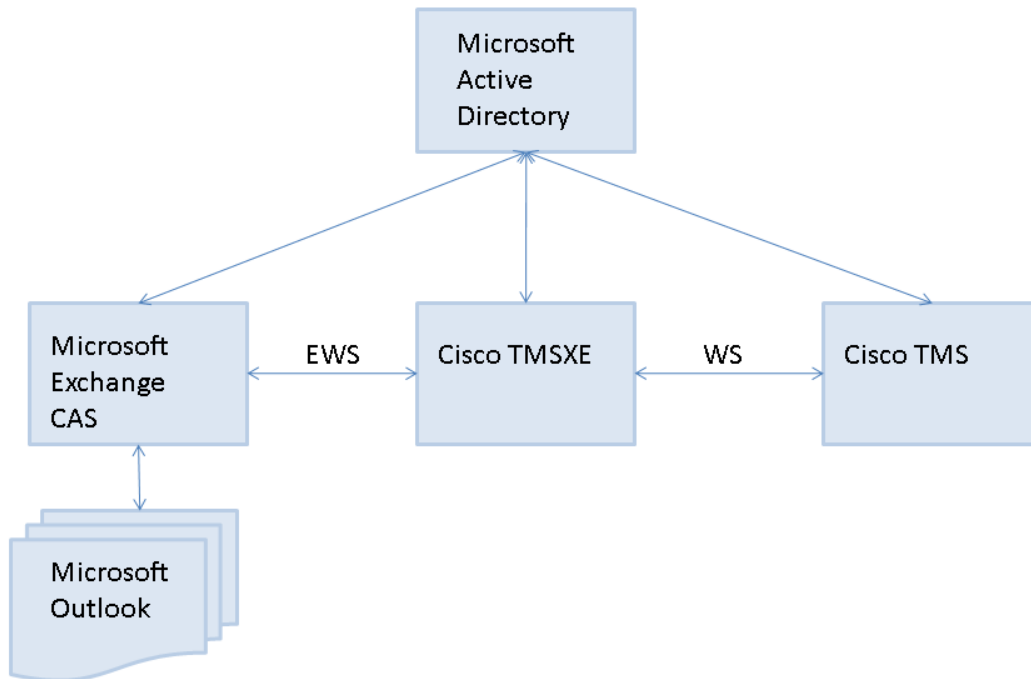
Cisco TMSXE communicates with Exchange 2007 or Exchange 2010 using Exchange Web Services (EWS).

Using Web Services, Cisco TMSXE passes booking requests to the Cisco TMS Booking API (Cisco TMSBA) and receives accept/decline messages.

Depending on the protocol used, Cisco TMSXE uses port 80 (HTTP communication) or port 443 (HTTPS communication).

The booking process

The sections below describe how bookings are created in Outlook or Cisco TMS and replicated through Cisco TMSXE.

Note that if a user books a meeting with a length of three minutes or less, it will not be processed by Cisco TMSXE.

Outlook to Cisco TMS

1. Using Outlook, the organizer creates a meeting request containing one or more video resources and, optionally, the WebEx Scheduling Mailbox, then clicks **Send**.
   Organizers may book from their own calendar or from a resource calendar.

2. Exchange checks resource calendars for availability and does one of the following:
   - sends an initial confirmation to the organizer that the resources are now booked and passes requests on to Cisco TMSXE.
   - notifies the organizer that none of the resources are available.
     In this scenario, Cisco TMSXE is not contacted, and the organizer must re-initiate a booking (step 1).
   - notifies the organizer that one or more resources are unavailable *and* sends an initial confirmation that some of the resources are now booked. The requests for these resources are passed on to Cisco TMSXE.
     In this scenario, the organizer must either change the meeting time or find other resources that are available at the desired time, and modify the booking using Outlook.

3. Cisco TMSXE gathers up requests from Exchange and passes them on to Cisco TMS.

4. Cisco TMS checks system and WebEx availability as relevant.
   a. If the conference connection type is requested to be *Automatic Connect*, *One Button to Push*, *Manual Connect*, or *No Connect*, Cisco TMS will also attempt to book routing resources for the conference.
   b. If only one video resource and no external participants are requested, no routing attempts will be made, regardless of the conference connection type that is requested and stored for the conference.
   c. If the *Reservation Only* connection type is requested, the video resources (rooms) are reserved, but no routing resources are booked.
   d. If the WebEx Scheduling Mailbox was invited to the meeting, Cisco TMS will attempt to include WebEx.

5. On receiving the results of the booking requests, Cisco TMSXE does one of the following:
   - If one or more resources could not be reserved, declines from those resources are sent to the organizer.
   - If routing was requested and successful, routing information is sent to the organizer.
   - If routing was requested but unsuccessful, Cisco TMSXE will request that Cisco TMS book the systems without routing (step 4). For more on this scenario, see Conference routing unsuccessful [p.18].
   - If no routing or WebEx was requested and all resources could be reserved, no notifications are sent.
   - If WebEx was requested and successfully booked, links to join and other WebEx details are included in the booking confirmation to organizer.
   - If WebEx could not be booked, the telepresence meeting booking confirmation will contain a WebEx error message stating the problem.

Master participant

The videoconference master is the participant in the conference who is considered to be the "chair" and the one who will be prompted to start a manually connected conference, or extend the meeting if more time is needed. Not all endpoints are able to be the videoconference master, as this feature relies on functionality not available for all types of endpoints.

When booking from Outlook, Cisco TMS will set the first resource in the **Location** field as the master participant provided this endpoint has master participant capabilities. If the first resource is not capable of being the master, Cisco TMS will choose the best candidate from the list.

Cisco TMS to Exchange

1. Using the Cisco TMS web interface, the organizer books a conference.
2. Every minute Cisco TMSXE polls Cisco TMS and gets all updates to bookings since the last polling.
3. Cisco TMSXE creates or updates bookings in Outlook resource calendars, including subject, room participants, and a message body that includes information about who booked the meeting in Cisco TMS.

Not all conference properties are replicated to Exchange when a conference is booked through Cisco TMS:

- Advanced settings are not replicated.
- Organizer and all participants are not included in the **To:** field.
- When specified through Cisco TMS, the master participant is not reflected in the order of the rooms in the **Location:** field.

Updating Outlook-created bookings using Cisco TMS

When a meeting booked through Outlook is updated using Cisco TMS, resource calendars are updated, but the organizer's calendars is not, as Cisco TMSXE does not have permissions to modify the calendars of personal mailboxes.

If rooms are added to a booking from Cisco TMS, the organizer will not be able to remove them using Outlook.

Ad hoc (non-scheduled) meetings

When Cisco TMS detects ad hoc calls, the endpoints involved in the call are automatically reserved for the following five minutes. The information that the endpoints are busy will be replicated by Cisco TMSXE to the relevant Exchange calendars.

Replication delays

When booking from Outlook, Cisco TMSXE will wait for approximately one minute to collect all the info about the meeting before passing the booking to Cisco TMS.

If updating an existing conference in Cisco TMS that has been modified by an Outlook user, Cisco TMSXE will wait to push the change from Cisco TMS :

- While the change done in Outlook is being pushed to Cisco TMS.
- Until the item has been left unmodified in Exchange for 4 minutes.

Communication with WebEx

- WebEx Productivity Tools with TelePresence communicates directly with WebEx. Therefore, WebEx Productivity Tools with TelePresence may be used to book WebEx-only meetings as well as Telepresence with WebEx meetings with both telepresence and WebEx.
- The WebEx Scheduling Mailbox communicates with WebEx by way of Cisco TMSXE/Cisco TMSBA/Cisco TMS. Using this method, whether or not to include WebEx is considered a property of the telepresence meeting.
  Booking WebEx-only conferences using this method is possible, but not recommended, as it will trigger the use of MCU resources even if no telepresence participants have been booked. Organizers will be notified of this in their booking confirmation.

Running the Cisco TMSXE service

Cisco TMSXE is a service that can be started and stopped from the Windows Server **Services** snap-in.

Before you make any changes to configurations, including adding or removing endpoints from the solution, you must stop the service, and restart it when the configuration tool is closed.

Starting the service

After configuration, a prompt will ask whether to start the Cisco TMSXE service.

If you decline this prompt, you must start the process manually as described below. The configuration tool must be closed and initial configuration must be completed before the service can start.

1. Open Server Manager.
2. Go to **Configuration > Services > Cisco TMSXE**.
3. Right-click Cisco TMSXE and select **Start**.

If the service fails to start, the error will be logged. See Troubleshooting [p.22] for more information.

Stopping the service

The service must be stopped before the configuration tool can be opened. A prompt to stop the service will be presented if you launch the configuration tool while Cisco TMSXE is running.

If you need to stop the service for other reasons:

1. Open Server Manager.
2. Go to **Start > Administrative Tools > Services > Cisco TMSXE**.
3. Right-click Cisco TMSXE and select **Stop**.

If any booking or modification requests are made while the service is halted, they will be queued and then processed as soon as the service is restarted.

Cisco TMSXE configuration tool

The configuration tool executable is part of the Cisco TMSXE deliverable. It runs automatically after an initial installation. You can also start it at any time after installation to modify the configuration, and to add or remove endpoints from your Cisco TMSXE deployment.

Running the configuration tool stops the Cisco TMSXE service, and when closing the tool, you will be prompted to start the service again.

If using WebEx Productivity Tools with TelePresence, configuration changes will only be applied when the Booking Service application pool is recycled, which usually happens 10 minutes after a configuration change is detected.

Launching the configuration tool

To launch the tool, do one of the following:

- Go to the Windows Server **Start** menu: **Start > All Programs > Cisco > Cisco TMSXE Configuration**
- Run it as administrator from the command prompt. The configuration tool is located in the Cisco TMSXE installation folder, by default the program path is **C:\Program Files\Cisco\TMSXE\ConfigurationApp.exe**.

On tool startup, you will be prompted to stop the Cisco TMSXE service. When closing the tool, you will be prompted to restart the service.

Switches

The tool supports the following switches:

- **-help** displays a short help file.
- **-wizard** runs the configuration tool in setup wizard mode, intended to make sure all required fields are completed at initial setup. If no configuration is detected, a prompt will ask the user whether to migrate settings from an existing deployment.
- **-migratewizard** runs the configuration tool in setup wizard mode with migration options. This switch should *only* be used if finalizing an interrupted migration process. Do not rerun the migration wizard after migration from earlier versions of Cisco TMSXE has been completed.

For regular administrative tasks, run the configuration tool without any command-line arguments.

Configuration reference

Field	Description
Cisco TMS	
Server Address	This is the IP address or fully qualified domain name (FQDN) for the Cisco TMS server. Do not include the protocol (HTTP or HTTPS). A colon and specific port number may be included.
	If you are using a redundant setup with a network load balancer for Cisco TMS, enter the virtual address of the network load balancer here.

Field	Description
Use HTTP	In communication with Cisco TMS, encryption is used by default. This option disables secure communication with Cisco TMS.
Username	The username you have created for the Cisco TMSXE service user to log into Cisco TMS.
Password	The password for the above user.
Domain	The domain the Cisco TMS server is in.
Exchange Web Services	
Server Address	The address of the Exchange Client Access Server (CAS), must be entered as a fully qualified domain name (FQDN). Do not include the protocol (HTTP or HTTPS). A colon and specific port number may be included.
Use HTTP	In communication with Exchange Web Services, encryption is used by default. This option disables secure communication with EWS.
Username	The Cisco TMSXE service user in Exchange/Active Directory. Note that once you have set up Cisco TMSXE to use this service user, you must not change service users, whether during operation, or as part of an upgrade. The link between meetings in Exchange and Cisco TMS is tied to the service user GUID.
Password	The password for the above user.
Domain	The domain the Exchange server is in.
Sender Email Address	The email address used as the **From:** address of all notifications to organizers booking through Cisco TMSXE. Leave blank to use the service user email address. If you want organizers to receive notifications from an address they can reply to, a support email address or similar can be added here. Note that you must grant the service user *Send as* permissions for this address, see: ■ *Manage Send As Permissions for a Mailbox* (Exchange 2010 Help) ■ *How to Grant the Send As Permission for a Mailbox* (Exchange 2007 Help)
Systems	
Email Pattern	■ When building the email pattern, the optional variables {{TmsId}} and {{DisplayName}} translate to the endpoint's TMS System ID and display name in Cisco TMS respectively. Any whitespaces in the display name will be removed automatically. ■ To simplify setup when there are many systems to add, using the Cisco TMS display name as the mailbox name is therefore recommended. See Adding Cisco TMS managed endpoints to Exchange [p.12]. ■ The email domain defaults to your domain. ■ If the mailbox names in your organization cannot be represented by such a pattern, each email address can be edited manually after they have been added to the right-hand list on this configuration tab.
Advanced Settings	
Data Files	Data files are stored at this location. Default: **\ProgramData\Cisco\TMSXE\Storage** on the drive where Cisco TMSXE is installed. The **ProgramData** Windows folder is hidden by default.

Field	Description
Configuration	The Cisco TMSXE configuration file will be stored at this location. Default: **\ProgramData\Cisco\TMSXE\Config** on the drive where Cisco TMSXE is installed. The **ProgramData** Windows folder is hidden by default.
Logs	Event and error logs are stored at this location. Default: **\ProgramData\Cisco\TMSXE\Logs** on the drive where Cisco TMSXE is installed. The **ProgramData** Windows folder is hidden by default.

Adding Cisco TMS managed endpoints to Exchange

Before endpoints can be added to Cisco TMSXE, they must be represented by a room mailbox in Exchange.

Use the Exchange Management Console (EMC) to create one room mailbox for each of your endpoints, such as `boardroom@example.com`. See the Microsoft Exchange documentation for details on how to create room mailboxes.

To simplify Cisco TMSXE setup, we recommend using the endpoint's Cisco TMS display name as the mailbox name (with any spaces removed).

All room mailboxes must then be configured to give theCisco TMSXE service user full access permission. Follow the instructions for your version of Exchange below.

Repurposing existing mailboxes

If an endpoint is in a meeting room that already has a room mailbox, the mailbox can be repurposed for Cisco TMSXE booking.

Note that any existing bookings in repurposed mailboxes will be replicated to Cisco TMS when Cisco TMSXE starts up. You will get the option to determine whether email notifications should be sent to organizers if any of these bookings fail.

Repurposed mailboxes must also be configured following the instructions below.

Configuring Exchange 2007 mailboxes

All room mailboxes must be configured to treat resource information identically to avoid conflicts. Permissions can be set either using the console or the shell, properties must be set using Exchange Management Shell.

Granting Full Access Permission for the service user

There are two ways to set these permissions.

Using Exchange Management Console:

1. Use the EMC tree to navigate to **Recipient Configuration > Mailbox** and select the mailbox you want to configure.
2. Right-click the room mailbox and select **Manage Full Access Permission...**.
3. Add the Cisco TMSXE service user.
4. Proceed to step 2 in the Exchange Management Shell instructions below.

If using Exchange Management Shell, enter the following commands, replacing `[mailbox]` with the name of the mailbox you are configuring, `@` sign and domain not included:

```
Add-MailboxPermission [mailbox] -User "[service user]" -AccessRights
FullAccess.
```

Configuring required settings

Make sure that all resource mailboxes are configured identically and in line with the requirements outlined in the table below.

Differing settings between mailboxes can cause mismatches between Cisco TMS and Exchange.

Shell parameter	Required value	Description
AutomateProcessing	*AutoAccept*	Sets the mailbox to automatically process invitations
BookingWindowInDays	Must be between 0 and 1080. See description for recommendation.	Specifies for how long into the future users will be allowed to schedule meetings. We strongly recommend that this setting match that of Cisco TMS: **Administrative Tools > Configuration > Conference Settings > Conference Create Options > Booking Window (in days)**.
EnforceSchedulingHorizon	*True*	Specifies that recurring meetings that continue outside of the booking window will be rejected.
AllowConflicts	*False*	Prevents the mailbox from accepting overlapping bookings, which is not supported by Cisco TMS.
ConflictPercentageAllowed	*0*	
MaximumConflictInstances	*0*	Prevents the mailbox from accepting recurrent meetings where some instances conflict with existing bookings.
DeleteSubject	*False* (recommended) or *True*	We recomment turning off this option to delete meeting subjects. However, if it is a requirement for some room mailboxes that this option be enabled, it must the set to *True* for all mailboxes.
AddOrganizerToSubject	*False* or *True*	Sets the mailbox to never add the organizer's name to the subject of a booking. Optionally, this may be set to *true* for all mailboxes.
RemovePrivateProperty	*True* (recommended) or *False*	This setting removes the "Private" flags for all meetings accepted by the mailbox. The setting does not need to be enabled, but must be identical for all mailboxes added to Cisco TMSXE. Also note that the "Private" flag is not supported by Cisco TMS. For further information, see Deployment best practices in the installation guide.

To verify that the above settings are active, use the shell command **`Get-MailboxCalendarSettings -id [mailbox]|fl`**

For more information about the above parameters, see *Set-MailboxCalendarSettings (Exchange 2007 Help)*.

Configuring Exchange 2010 mailboxes

All room mailboxes must be configured to treat resource information identically to avoid conflicts. Most permissions and properties for room mailboxes in Exchange 2010 can be set either using the console or the shell.

Granting Full Access Permissions to the service user

There are two ways to do grant these permissions.

Using Exchange Management Console:

1. Use the EMC console tree to navigate to **Recipient Configuration > Mailbox** and select the mailbox you want to configure.

2. Right-click on the room mailbox and select **Manage Full Access Permissions…**.

3. Click **Add…**.

4. Add the previously created Cisco TMSXE service user and click **Manage**.

5. Click **Finish**.

If using the Exchange Management Shell, enter the following commands, replacing **`[mailbox]`** with the name of the mailbox you are configuring, `@` sign and domain not included:

`Add-MailboxPermission -identity [mailbox] -User [service user] -AccessRights FullAccess`.

Repeat one of these procedures for each mailbox.

Configuring required settings

Make sure that all resource mailboxes are configured identically and in line with the requirements outlined in the table below.

Differing settings between mailboxes can cause mismatches between Cisco TMS and Exchange.

Console field	Shell parameter	Required value	Description
Enable the Resource Booking Attendant (**Resource General** tab)	`AutomateProcessing`	*AutoAccept*	Sets the mailbox to automatically process invitations
Booking window (days) (**Resource Policy** tab)	`BookingWindowInDays`	Must be between 0 and 1080. See description for recommendation.	Specifies for how long into the future users will be allowed to schedule meetings. We strongly recommend that this setting match that of Cisco TMS: **Administrative Tools > Configuration > Conference Settings > Conference Create Options > Booking Window (in days)**.
Reject repeating meetings that have an end date beyond the booking window (**Resource Policy** tab)	`EnforceSchedulingHorizon`	*True*	Specifies that recurring meetings that continue outside of the booking window will be rejected.

Console field	Shell parameter	Required value	Description
Allow conflicting meeting requests (**Resource Policy** tab)	`AllowConflicts`	*False*	Prevents the mailbox from accepting overlapping bookings, which is not supported by Cisco TMS.
Conflict percentage allowed (**Resource Policy** tab)	`ConflictPercentageAllowed`	*0*	
Maximum conflict instances (**Resource Policy** tab)	`MaximumConflictInstances`	*0*	Prevents the mailbox from accepting recurrent meetings where some instances conflict with existing bookings.
Delete the subject (**Resource Information** tab)	`DeleteSubject`	*False* (recommended) or *True*	We recomment turning off this option to delete meeting subjects. However, if it is a requirement for some room mailboxes that this option be enabled, it must the set to *True* for all mailboxes.
Add the organizer's name to the subject (**Resource Information** tab)	`AddOrganizerToSubject`	*False* or *True*	Sets the mailbox to never add the organizer's name to the subject of a booking. Optionally, this may be set to *true* for all mailboxes.
Remove the private flag on an accepted meeting (**Resource Information** tab)	`RemovePrivateProperty`	*True* (recommended) or *False*	This setting removes the "Private" flags for all meetings accepted by the mailbox. The setting does not need to be enabled, but must be identical for all mailboxes added to Cisco TMSXE. Also note that the "Private" flag is not supported by Cisco TMS. For further information, see Deployment best practices in the installation guide.
	`CalendarRepairDisabled` (Set-Mailbox)	*True* (strongly recommended)	Disables the Calendar Repair Assistant (CRA) for the mailbox. There is no GUI option to modify this setting.

To verify that the above settings are active, use the shell command `Get-MailboxCalendarSettings -id [mailbox]|fl`

To verify that the Calendar Repair Assistant is disabled, use the command `Get-Mailbox -id [mailbox] | ft CalendarRepairDisabled`

For more information on the above console settings, see the Microsoft TechNet article *Configure User and Resource Mailbox Properties*.

Adding and removing endpoints from Cisco TMSXE

Like any change to the configuration, adding and removing endpoints requires stopping the Cisco TMSXE service.

Adding the endpoints

1. Launch the configuration tool by going to **Start > All Programs > Cisco > Cisco TMSXE Configuration**.
2. When prompted, confirm that you want to stop the Cisco TMSXE service.
3. Go to the **Systems** tab. This tab contains a list of all systems in Cisco TMS that are endpoints available for integration with Cisco TMSXE. Note that no mailboxes are created here; the room mailboxes provided on this tab must already exist in Exchange, or validation will fail. (See Adding Cisco TMS managed endpoints to Exchange [p.12].)
   a. Modify the email address pattern to generate the names of your room mailboxes. Be sure to use primary SMTP addresses for the room mailboxes, as aliases are not supported. Two optional variables are available:
      - `{{TmsId}}` translates to the system's numeric system ID from Cisco TMS.
      - `{{DisplayName}}` translates to the system's display name in Cisco TMS. Note that any spaces in the display name will be removed automatically.
   b. Select endpoints in the left-hand list and click **>>** to add them to Cisco TMSXE. Use `Ctrl` or `Shift` to select multiple endpoints.
   c. Modify individual email addresses as needed by double-clicking on them after they have been added to the right-hand list.
   d. Proceed to validation of systems and mailboxes. Note that this may take a while if you have a large number of systems; for 250 endpoints, the process could take about 90 seconds.
4. When done, click **Exit** to close the configuration tool.
5. When prompted, confirm that you want to start the Cisco TMSXE service.
6. If using WebEx Productivity Tools with TelePresence, configuration changes will only be applied when the Booking Service application pool is recycled, which usually happens 10 minutes after a configuration change is detected.

Removing endpoints from Cisco TMSXE

1. Launch the configuration tool by going to **Start > All Programs > Cisco > Cisco TMSXE Configuration**.
2. When prompted, confirm that you want to stop the Cisco TMSXE service.
3. Go to the **Systems** tab.
4. In the list of systems added to Cisco TMSXE, locate the system(s) you want. Use `Shift` or `Ctrl` to select multiple systems. Click **<<**.
5. When done, click **Exit** to close the configuration tool.
6. When prompted, confirm that you want to start the Cisco TMSXE service.
7. If using WebEx Productivity Tools with TelePresence, configuration changes will only be applied when the Booking Service application pool is recycled, which usually happens 10 minutes after a configuration change is detected.

The above procedure will remove the endpoint and its mailbox from Cisco TMSXE, while the mailbox and system remain bookable independently in Cisco TMS and Exchange.

Disabling Exchange Integration Option license flag

If using the Exchange Integration Option key, you must also disable a setting in Cisco TMS to prevent the removed endpoint from using a license.

Update the system as follows:

1. In Cisco TMS, go to **Systems > Navigator**.
2. Select the system you want.
3. Click the **Settings** tab.
4. In the **TMS Scheduling Settings** pane, you will find *Allow Remote Bookings*.
   If the setting is *Yes*, the system is currently using an Exchange Integration Option license.
5. To disable the setting:
   a. Click **Edit Settings**.
   b. Uncheck *Allow Remote Bookings*.
   c. Click **Save**.

Removing endpoints from a deployment

To remove an endpoint completely from your deployment, you must also:

- Delete the mailbox from Exchange.
- Delete the system from Cisco TMS.

Messages from Cisco TMSXE

When organizers book videoconferences using Outlook, they will receive messages both from Exchange and Cisco TMSXE.

Cisco TMSXE will send messages when:

- routing is successfully set up for a conference with one of the following settings:
  - *Automatic Connect*
  - *Manual Connect*
  - *No Connect*
  - *One Button to Push*
- a requested conference routing is unsuccessful, and the conference is booked as *Reservation Only* instead (see below).
- a conference with the setting *Reservation Only* was successfully booked, but one or more resources were not available.

No notification is sent from Cisco TMSXE in the following cases:

- All resources are available for a conference successfully booked with the *Reservation Only* setting.
- A meeting is deleted by the organizer.

Also note that Cisco TMSXE never sends notifications about bookings or updates made in Cisco TMS. Notifications will be sent by Cisco TMS depending on system settings.

Conference routing unsuccessful

Multipoint Control Units (MCUs) are used for routing conferences involving multiple endpoints.

When an organizer tries to book a conference that will be automatically routed, Cisco TMS locates and reserves the necessary routing resources if they are available.

If MCU resources are insufficient or unavailable at the requested time:

1. Cisco TMS will decline the booking.
2. Cisco TMSXE will not pass this message along to the organizer, but instead request that Cisco TMS simply reserve the endpoints without routing.
3. Cisco TMS re-processes the request as a *Reservation* conference.
4. Provided the endpoints can be booked, confirmation is sent to Cisco TMSXE, and the organizer is notified that the request was only partially successful.

Note that if routing is unavailable for one occurrence of a meeting series, the entire series will be "downgraded" to *Reservation*.

The notification sent to the organizer includes detail on why routing failed and a suggestion to ask the videoconference administrator for assistance.

Beyond scheduling conflict/capacity issues, potential reasons for failed routing include, but are not limited to:

- Dial protocol compatibility issues, for example, an H323-only endpoint trying to dial a SIP-only endpoint, with no interworking configured.
- A dial-out participant has no provided number.

- Conference requires encryption, but one participant does not support or signal support for encrypted communication.
- The route contains one or more systems that have been deleted from Cisco TMS.

Alternate reason for downgrade

Due to replication delays, Exchange and Cisco TMS will for short periods of time have divergent information about which resources are available.

If a booking is created or updated from Outlook and contains a room resource that is booked in Cisco TMS during this time, Cisco TMSXE will downgrade the meeting to *Reservation* and send a "Conference routing unsuccessful" message to the organizer with information about the unavailable resource.

While this is not a frequent scenario, it is important to note that it is not solved by addressing routing resources. As soon as replication has completed, the meeting can be re-booked with any connection type, without the unavailable room resource.

For more information about replication delays, see The booking process [p.5].

Re-submitting the routing request

If able to free up existing routing resources, add MCU capacity, or otherwise resolve the resource issue, the connection type of the conference must be explicitly modified using either Cisco TMS, the Cisco TelePresence form in Outlook, or WebEx Productivity Tools with TelePresence by adjusting the connection type back to that originally requested.

If there is a capacity issue and MCU capacity cannot be made available at the requested time, the conference must be rescheduled.

Email notifications

The templates used to notify organizers are found in Cisco TMS. However, Cisco TMSXE can inject errors, warnings, and informational text into email messages sent by Cisco TMS.

These messages can be modified by the administrator.

Avoid removing or changing text in curly brackets, as these are variables that embed other messages.

Template name	Description
ConferenceDowngraded	Subject for notification that a booking with routing requested, has been booked as *Reservation Only*, usually due to lack of routing resources. See Conference routing unsuccessful [p.18].
ConferenceSaved	Subject for notification that a conference has been successfully booked or updated.
UnknownProcessingError	Subject for notification of failed booking or update.
BookingBodyConferenceDowngraded	Notification body template for when a meeting has been downgraded to *Reservation Only*.
BookingBodyConferenceDowngraded MigrationMode	Identical to the above, but used in "migration" mode when existing bookings in Exchange are re-booked in Cisco TMS. Contains information to organizers that videoconference backend changes are ongoing.

Template name	Description
BookingBodyConferenceDowngraded AndSomeWereNotBooked	Notification body template for when a meeting has been downgraded to *Reservation Only* and some requested endpoints were not available.
BookingBodyConferenceDowngraded AndSomeWereNotBookedMigrationMode	Identical to the above, but used in "migration" mode when existing bookings in Exchange are re-booked in Cisco TMS. Contains information to organizers that videoconference backend changes are ongoing.
BookingBodyUnknownProcessingError	Notification body template for error situations where a request could not be processed. Contains an error message from server.
DeclineBody	Notification body template for when a system could not be booked in Cisco TMS.
DeclineBodyMigrationMode	Identical to the above, but used in "migration" mode when existing bookings in Exchange are re-booked in Cisco TMS. Contains information to organizers that videoconference backend changes are ongoing.
RouteBody	Template for routing information for Cisco TMS. If there is a particular service or person that organizers should contact when encountering routing problems, such information may be added to this template.
TMSParticipantWithoutDisplayName ButOnlyId	Template that determines how to refer to systems that do not have a display name set in Cisco TMS.

Modifying the templates

To modify a template:

1. Open the template file in a text or HTML editor that does not automatically alter any of the markup or headers.
2. Edit the contents and/or formatting to your liking.
3. Save the modified file without the **.sample** extension.
4. Restart the Cisco TMSXE service for the modified template to be applied.

All **.sample** files are overwritten/reverted to default on each service startup, and missing template files are regenerated.

Maintenance

Performing maintenance on endpoints

If an endpoint is about to undergo maintenance, perform the following steps to ensure organizers only have access to systems that can be booked:

1. Remove the endpoint from Cisco TMSXE, see Removing endpoints from Cisco TMSXE [p.16].
2. In Cisco TMS, go to **Systems > Navigator** and locate the endpoint.
3. Hover the endpoint name, click the drop-down arrow and select **Edit Settings**.
4. Scroll to the **TMS Scheduling Settings** pane and uncheck *Allow Bookings*.

When maintenance on the endpoint has been completed, we recommend going in the reverse order:

1. Check *Allow Bookings* in Cisco TMS.
2. Re-add the system to Cisco TMSXE, see Adding the endpoints [p.16].

Beware that disabling the system only in Cisco TMS will cause organizers who book via Outlook to get their booking requests declined with an error message from Cisco TMS. If Cisco TMSXE is stopped while systems are in an unbookable state, the service will not restart until the systems are removed or made bookable. See Unbookable or unlicensed systems [p.23].

Backing up Cisco TMSXE

Storage of passwords for Exchange, Cisco TMS, and Active Directory is encrypted using the Microsoft CryptoAPI.The passwords are encrypted using Cisco TMSXE's password entropy in combination with the encryption Data Protection Scope set to LocalMachine. The passwords can therefore only be decrypted by processes running on the server hosting Cisco TMSXE.

This also means that in order to retain encrypted passwords in the configuration, a full backup of Cisco TMSXE must include the entire OS of the server.

However, if retyping the passwords when reinstalling after a restore is an acceptable option, the backup needs only contain the contents of the configuration, storage, and log folders. These files should be copied to the new target before reinstalling.

Troubleshooting

Cisco TMS is missing one or more bookings present in Exchange

If single bookings have been made in Exchange but not propagated to Cisco TMS, check whether **Show As** for the booking in Outlook has been set to anything other than *Busy*, as this will cause Cisco TMSXE not to treat the request as a booking.

Reading the Windows event log

1. Right-click on **Computer** in the Start menu, Desktop or Explorer, and select **Manage**.
2. Go to **Computer Management > System Tools > Event Viewer > Applications and Services Logs > Cisco TMSXE**
3. Press **F5** to update the log pane, which lists information about startup, errors, and location of logs.

How logging works

Cisco TMSXE creates several logs to assist in troubleshooting. The default location for these logs is **C:\ProgramData\Cisco\TMSXE\Logs**.

The location can be reconfigured using the configuration tool during or after installation, see Configuration reference [p.9].

- **TMSXE-log-file.txt** logs the activities of the Cisco TMSXE Windows service
- **TMSXEConfig-log-file.txt** logs the activities of the configuration tool.
- **TMSXEService-log-file.txt** logs the activities of the synchronous booking proxy.

The log files have a size limit of 5Mb. When this limit is reached:

- A new file with the same name is created.
- The old log file is renamed to include the suffix **.1**.
- If a **.1** file already exists, that file is renamed to **.2**, and so on.
- The maximum number of log files to store is 15. When a log file reaches the suffix **.15**, it will be deleted the next time the current log file reaches 5Mb.

Turning on debug logging

The default log level is informational. To change the log level for debugging:

1. Open Notepad as an administrator.
2. Locate the Cisco TMSXE **Config** folder on your computer, by default located in **C:\ProgramData\Cisco\TMSXE\Config**. Note that the **ProgramData** Windows folder is hidden by default.
3. Change the drop-down to look for *All Files*.
4. Open the file **Log4net.config**.

5. In the line that says **<level value ="INFO" />**, replace **"INFO"** with **"DEBUG"**.
6. Save and close the file.

This setting significantly increases the size of the log. We strongly recommend reverting the log level back to "INFO" after debugging. The steps to revert are the same as above.

The Cisco TMSXE service does not start

If you receive an error message stating that the service "started and then stopped", the configuration tool is probably open. Close the configuration tool and try running the service again.

If this is not the case, look at the event log for the ERROR displayed before the "Shutting down.." message. See Reading the Windows event log [p.22].

Other possible reasons the service will not start:

- The service cannot connect to Exchange Web Services or Cisco TMS anymore
- The service doesn't have write permissions to the log folder.
- Files in the Cisco TMSXE folder are in use.
- Configuration is incomplete. Launch the configuration tool, review and fill in all fields, close the tool and try running the service again.
- One or more systems are not possible to book in Cisco TMS. See Unbookable or unlicensed systems [p.23].

Time zone change caveat

If the Cisco TMSXE server's time zone is modified while the TMSXE service is running, bookings will stop replicating between Cisco TMS and Exchange.

Should this happen, perform the following procedure:

1. Stop the TMSXE service.
2. Open the Cisco TMSXE **ProgramData** folder (default location **C:\ProgramData\Cisco\TMSXE**, a hidden folder).
3. Rename the **Storage** folder to **storage.old**.
4. Restart the TMSXE service.

The **Storage** folder will be recreated by Cisco TMSXE and booking replication will resume.

Unbookable or unlicensed systems

The configuration tool will present an error message if you add one or more systems to Cisco TMSXE that are either missing licensing for Cisco TMSXE or are not bookable for another reason.

Licensing

To complete configuration and make Cisco TMSXE start up, you must do one of the following:

- Make sure all systems added to Cisco TMSXE are licensed for Outlook booking per the licensing requirements, see *Cisco TelePresence Management Suite Extension for Microsoft Exchange Installation*

Guide.

- Remove any unlicensed systems.

Not bookable

An endpoint may not be possible to book for other reasons. For example, an administrator may have disabled *Allow Bookings* in Cisco TMS because the endpoint is undergoing maintenance.

If you try to add an endpoint that is not bookable to Cisco TMSXE, the error message will include the system ID of affected endpoint(s).

To complete configuration and make Cisco TMSXE start up, you must do one of the following:

- Make all affected systems bookable.
- Remove all systems causing errors from Cisco TMSXE and add the systems back in when they can be booked.

Meetings are booked, but do not appear in room calendars

If a meeting has been booked in Outlook and shows up as booked in Cisco TMS, but does not appear in the Outlook room calendar, Outlook is probably running in Cached Exchange Mode.

To turn this mode off:

1. Open the Windows Control Panel
2. Go to **User Accounts > Mail > Email Accounts**.
3. Double-click the email profile and disable **Cached Exchange Mode**.
4. Restart the Outlook client, and the meeting will appear in the room calendar.

No bookings are accepted or declined

If no accept/decline messages are received from one or more of the endpoints you are trying to book:

- Auto-acceptance may not have been turned on for the room mailbox. See Adding Cisco TMS managed endpoints to Exchange [p.12] for detail on setting this option for your version of Exchange.
- If you are running Exchange 2010, one or more organizers may have the Cisco TelePresence form installed or present in their Outlook client. Forms using scripts are not supported by the automatic accept feature in Exchange 2010, and any booking from a client that has such a form will be left pending in the room mailbox. For resolutions to this problem, see below.

Exchange 2010 issues with Cisco TelePresence form

Using the Cisco TelePresence custom form requires the use of a special setting during configuration.

As the automatic accept feature in Exchange 2010 does not support the use of custom forms with scripts, all bookings from an Outlook client linked to this form will fail to be processed by the room mailbox.

Enabling the workaround

On the **Exchange Web Services** tab of the configuration tool, check *Forward meeting requests without script when Cisco form is present in Exchange 2010*.

The meeting requests will now be forwarded with the script section removed, so that the mailboxes may process them. Note that this will generate additional notifications to organizers. Setting up automatic filters for these notifications is strongly recommended.

The alternative to using this setting is removing the form from your deployment altogether.

Removing the form

Organizational Forms Library

If the form is only distributed through the Organizational Forms Library:

1. Remove the form or the folder containing the form from the Organizational Forms Library. Note that this must be done by an administrator with *Owner* permissions for the library.
2. Disable any forced registry settings specifying that this form be used.

Local form

If some users have the form locally installed, they must follow these instructions before they will be able to make any bookings in Exchange 2010:

1. Go to **Tools > Options > Other**, click **Advanced Options…**, then **Custom Forms…**, then **Manage Forms...**
2. Select and delete the **VideoConference.oft** form.
3. Click **Clear Cache**.
4. Ensure that bookings will now be created using the default form:
   a. Right-click on **Calendar** in the left-side Calendar pane.
   b. Select **Properties…**.
   c. Set **When posting to this folder, use** to *IPM.Appointment*.

Bibliography

All documentation for the latest version of Cisco TMSXE can be found at
http://www.cisco.com/en/US/products/ps11472/tsd_products_support_series_home.html.

Title	Reference	Link
Cisco TelePresence Management Suite Extension for Microsoft Exchange Software Release Notes (3.0)	D14893	
Cisco TelePresence Management Suite Extension for Microsoft Exchange Installation Guide	D14890	
Cisco TelePresence Management Suite Extension for Microsoft Exchange User Guide (3.0)	D14892	
Cisco Telepresence Management Suite Booking API Programming Reference Guide	D13566	http://cisco.com