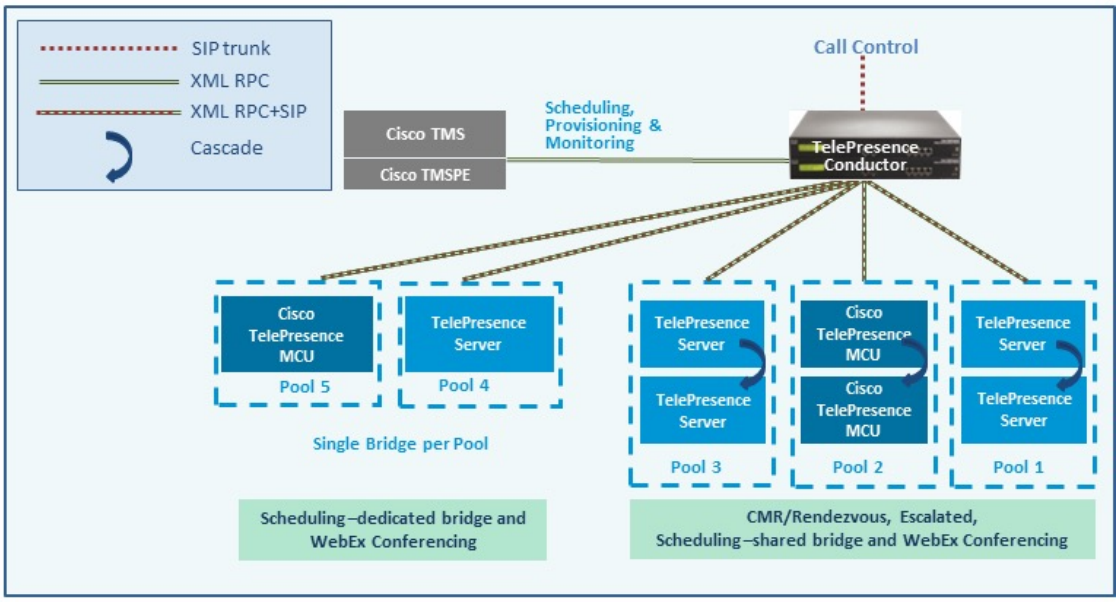
Configure Bridge Scheduling

How Bridges are Scheduled in CMR Hybrid

Two methods for scheduling bridges are possible in CMR Hybrid:

- Scheduling—dedicated bridge. Deploy one or more bridges that are dedicated just for scheduled conferences, with each bridge in a pool of its own. Optionally, a second dedicated bridge and pool combination can be used as a backup.
- Scheduling—shared bridge. Allow bridges to be used for non-scheduled as well as scheduled conferences. In this case, resource availability for scheduled conferences cannot be guaranteed, as the necessary resources might already be in use by non-scheduled conferences.



Example configuration scenarios, and their respective advantages and disadvantages are in Cisco Collaboration Meeting Rooms (CMR) Premises Solution Guide.

Limitations and prerequisites apply to scheduled conferencing in this release, described in:

- Limitations, on page 2
- Requirements, on page 3

Limitations

Note If you use clustered TelePresence Conductors, be aware that Cisco TMS only recognizes one TelePresence Conductor node. If that cluster node should fail, the Cisco TMS scheduling service and its CMR provisioning service will be out of service (until the TelePresence Conductor is brought back up or Cisco TMS is updated to communicate with a different TelePresence Conductor in the cluster).

It is not possible to schedule Cisco TMSPE-provisioned CMRs.

If you use TSP Audio provided by a TSP that is configured to use the same bridge as the previous scheduled conference, we recommend that you turn off the auto-extend function in Cisco TMS.

The scheduling solution with TelePresence Conductor and Cisco TMS has some notable limitations at this time, and significant differences exist from the previous method in Release 3.0 (scheduling to direct-managed bridges). We strongly recommend before you enable scheduling, that you review the following documents:

- A table containing the differences between the previous solution method of scheduling direct-managed bridges (previous release) and scheduling TelePresence Conductor-managed bridges (this release) is available in Cisco TelePresence Conductor with Cisco TelePresence Management Suite Deployment Guide.
- The Limitations section in the latest release notes for Cisco TMS.

- The Limitations section in the latest release notes for TelePresence Conductor.

Requirements

- CMR Hybrid requires the Cisco TMS management tool for scheduling. Conferences are not scheduled directly on TelePresence Conductor.
- Ensure that the solution-level prerequisites and configuration process for CMR Hybrid are complete. In particular:
- For the Scheduling—dedicated bridge case, some additional configuration requirements apply (see below).
- Participants in a scheduled conference should not escalate to an ad hoc / instant conference. This will cause a degraded conference experience for the participants.

Requirements for Dedicated Bridge Scheduling

If you use a dedicated conference bridge for scheduling, the following points apply:

- The bridge resources will only be used for conferencing (subject to correct configuration). In Capacity API responses to Cisco TMS, the TelePresence Conductor only returns pools that are "marked" for scheduling in the Service Preference (**Pools to use for scheduling** option).
- For additional resilience you can include one or more additional bridges / pools in the Service Preference used for scheduling. These pools should not be marked for scheduling (so they are not reported to Cisco TMS) and the additional bridges will only be used if the primary bridge becomes unavailable.
- To avoid wasting resources we recommend that you disable cascading. Even though cascading cannot physically happen, resources will still be reserved if cascading is enabled.
- Although TelePresence Server resource optimization will occur, no benefit is gained when the primary conference bridge is in use. Cisco TMS plans bridge usage ahead of actual usage, so the resources recovered by optimization are not actually re-used. If you use backup bridges which are shared resources with non-scheduled conferences, then the optimization will reduce the capacity needed on the shared backup bridge(s).

: When configuring conference bridge pools dedicated for scheduling, we recommend the following:

- Give the conference bridge pool a name indicating that it should only be used for scheduled conferences.
- Check that the pool is only used in a single Service Preference.
- Check that the Service Preference is not used in a CMR or ad hoc conference.

Configurations for Scheduled Conferencing

Various configurations are possible to support scheduled conferencing in the solution. They are controlled by the bridge pool and Service Preference settings in TelePresence Conductor.

Shared Bridges

Typically you might want to use this shared-bridge approach, which allows other types of conferences as well as scheduled conferences to run on the conference bridges:

Table 1: Deploying shared bridges for scheduling

	Service Preference contains...	**Configuration**	**Advantages**	**Disadvantages**
Example 1	Shared-use bridges for scheduled and non-scheduled conferences	One or more pools, shared for scheduled and nonscheduled conferences. All pools are marked for scheduling in the TelePresence Conductor Service Preference and reported to Cisco TMS.	Cascaded conferencing available (if enabled). Targeted management of bridge resources. Over time, monitoring of use patterns can identify the most appropriate pool configuration.	Resource availability for scheduled conferences not guaranteed (could be used up by non-scheduled conferences). This risk can be reduced by using the Capacity Adjustment setting in Cisco TMS to underallocate capacity below 100%. Only the specified reduced percentage is made available to TMS for scheduling conferences, rather than the actual capacity.

Alternative Options (Dedicated Bridges)

If you want to reserve bridges for use just by scheduled conferences, this table provides examples of possible approaches and their advantages and disadvantages:

Table 2: Deploying dedicated bridge(s) for scheduling

	Service Preference contains...	Configuration	Advantages	Disadvantages
Example 2	Dedicated bridge for scheduled conferences.	Single pool, with a single conference bridge. Pool marked to be used for scheduling in the TelePresence Conductor Service Preference. Pool is reported to Cisco TMS in capacity information requests.	Conference availability is guaranteed, subject to bridge failure (or full capacity). Maximizes use of resources, as Cisco TMS will book ports until the bridge is full.	Uses one conference bridge exclusively for scheduling. Cascaded conferencing does not occur: to avoid wasting resources,cascading should be disabled.
Example 3	• Dedicated bridge for scheduled conferences • Dedicated backup bridge	Two pools. Both pools contain a single conference bridge. The second pool is used as a backup if the bridge in the highest priority pool fails. Only the first pool is marked for scheduling in the TelePresence Conductor Service Preference and reported to Cisco TMS.	As for Example 2, with added benefit of fallback in case of bridge failure.	Uses two conference bridges exclusively for scheduling. Consumes backup resources. To avoid wasting resources, cascading should be disabled.

	Service Preference contains...	Configuration	Advantages	Disadvantages
Example 4	• Dedicated bridge for scheduled conferences • Shared-use backup bridges for both scheduled and non-scheduled conferences.	Two or more pools. Highest priority pool with one bridge only, used for scheduled conferences. Other pools contain bridges for both scheduled (as backup) and non-scheduled conferences. Only the first pool is marked for scheduling in the TelePresence Conductor Service Preference and reported to Cisco TMS.	As for Example 2, with possible benefit of fallback in case of bridge failure if the other pools have spare capacity.	Uses one conference bridge exclusively for scheduling. To avoid wasting resources on the dedicated bridge, cascading should be disabled.
Example 5	• Dedicated bridge for scheduled conferences • Shared-use backup bridges for both scheduled and non-scheduled conferences.	Two or more pools. Highest priority pool with two or more bridges, used for scheduled conferences. Cascading enabled on the associated conference template. Other pools contain bridges for both scheduled (as backup and overflow) and non-scheduled conferences. Only the first pool is marked for scheduling in the TelePresence Conductor Service Preference and reported to Cisco TMS.	As for Example 2, with possible benefit of fallback in case of bridge failure and overflow resource when cascading is used in a scheduled conference. Bridges in the backup pools are used for scheduling if: • A bridge in Pool 1 fails. • Cascading in Pool 1 uses up bridge resources that Cisco TMS expected to be available for scheduling.	Uses conference bridges exclusively for scheduling. If scheduled conferences are cascaded, they may need resources from a shared-use pool.

Enable Scheduling in TelePresence Conductor and Cisco TMS

Before You Begin

- Ensure that the tasks in are complete in Limitations, on page 2 and Requirements, on page 3.
- Review the best practice guidelines for Bridge Pools and Service Preferences in Bridge Pools and Service Preferences.

Procedure

Step 1 **Add TelePresence Conductor to Cisco TMS:**
If you have not already done so, add each TelePresence Conductor that you plan to use for scheduling, as a system in Cisco TMS, and associate each system with the appropriate zone. See the Cisco TMS help or the Cisco TMS Administrator Guide (search for "Adding Systems") at the following URL on Cisco.com:
http://www.cisco.com/c/en/us/support/conferencing/telepresence-management-suite-tms/products-maintenance-guides-list.html

Note If you use clustered TelePresence Conductors, define only one node per cluster to Cisco TMS.

Step 2 **Define IP Zone for TelePresence Conductor in Cisco TMS:**
If you have not already done so, in Cisco TMS go to **Administrative Tools > Locations > IP Zones** and define one IP zone per TelePresence Conductor, or per TelePresence Conductor cluster.

Step 3 **Configure conference bridge resources in TelePresence Conductor:**
In TelePresence Conductor, configure one or more conference bridge pools and Service Preferences for the conference bridges to be used for scheduled conferences.
Pools and Service Preferences should only contain bridges within the same physical location.

Various configurations are possible depending on the requirements of your organization. In particular, whether you need to allocate dedicated resources just for scheduled conferences or if it is acceptable to share resources with non-scheduled conferences. The latter case has the risk that a scheduled conference may not be able to start if non-scheduled conferences have already used up the available resources.

Configuration examples are given in the Cisco Collaboration Meeting Rooms (CMR) Premises 5.0 Solution Guide, available on Cisco.com:
http://www.cisco.com/c/dam/en/us/td/docs/telepresence/infrastructure/solutions/cmrpremises/cmr-premises-solution-guide-r5-0.pdf.

To optionally implement the Scheduling—dedicated bridge case, you must "mark" the relevant conference bridge pool(s) for scheduling use. Do this on the Service Preference page in TelePresence Conductor.

Note When configuring conference bridge pools dedicated for scheduling, we recommend the following:

- Give the conference bridge pool a name indicating that it should only be used for scheduled conferences.
- Check that the pool is only used in a single Service Preference
- Check that the Service Preference is not used in a CMR or ad hoc conference.

Step 4 **Allocate the TelePresence Conductor location:**

Allocate the appropriate Location to each conference bridge pool defined in the previous task. Scheduled conferences do not need a dedicated Location. Use the same Location that is assigned for rendezvous conferences.

Step 5 **Configure conference templates in TelePresence Conductor:**
If a suitable conference template does not already exist in TelePresence Conductor, define one or more templates to reflect your scheduled conferencing requirements.
In TelePresence Conductor, go to **Conference configuration > Conference templates**. Set **Scheduled conference** to **Yes**.

Step 6 **Configure conference aliases in TelePresence Conductor:**
Define one or more TelePresence Conductor aliases to reflect your scheduled conferencing requirements.
In TelePresence Conductor, go to **Conference configuration > Conference aliases**.

These configuration requirements apply:

- Personal CMRs provisioned through Cisco TMSPE cannot be used for scheduled conferences.
- A dedicated conference alias is required for scheduled conferences. Do not use a conference alias that is already allocated to non-scheduled conferences.
- Set **Allow conference to be created** to **No**.

Step 7 **Configure conference aliases in Cisco TMS:**
In Cisco TMS, go to **Systems > Navigator >** select the TelePresence Conductor Aliases and select **Aliases** and select **New**.
The alias names do not have to match their corresponding conference aliases in TelePresence Conductor, but it may be administratively convenient to use the same names.

Specify the **Alias Pattern** setting to match the Incoming alias setting for the corresponding conference alias in TelePresence Conductor. (Unlike the TelePresence Conductor, the pattern is not specified as a regular expression.)

Note Cisco TMS aliases are assigned dynamically by TMS when it creates conferences, and can be manually modified.

Step 8 **(Optional) Edit Service Preferences in Cisco TMS:**
Unlike conference aliases, Cisco TMS automatically creates its Service Preferences. Values are populated from the Service Preference in TelePresence Conductor that is associated with the relevant alias pattern.
To optionally change Service Preference settings, in Cisco TMS, go to **Systems > Navigator > Conductor > Service Preferences** and select **Edit**.

TelePresence Conductor reports the total capacity of a Service Preference to Cisco TMS. Unless you use a single, dedicated bridge for scheduling, you may want to change the Capacity Adjustment setting from its default value of 100% and monitor the effect. This setting specifies what percentage of the total capacity will be available to Cisco TMS for scheduling conferences with this Service Preference.

You might want to set the Capacity Adjustment to greater than 100 if:

- You use cascades, and meetings tend not to cascade frequently. This could offset the potential for cascade resources to be reserved, but not actually used.
- You use resource optimization for the bridges. Cisco TMS does not take optimization into account for resources that are dedicated just for scheduled conference use. Depending on the mix of endpoints involved, the endpoints may not actually use all of the resources that get allocated to them via the Conductor template settings. Overallocating capacity may offset the potential for resources to be reserved but not actually used, if the capacity initially booked by TMS is greater than the resources actually used after optimization frees up initial resources.

Over-allocating capacity (greater than 100%) clearly increases the risk that resources will be insufficient to support all participants. To minimize that risk you could use a reserve bridge pool that isn't marked for scheduling, which oversubscribed conferences can flow into.

You might want to set the Capacity Adjustment to less than 100 in the following cases:

- Generally with shared bridges for scheduled and non-scheduled conferences, since under-allocating capacity can minimize the risk of people being unable to join due to insufficient resources.
- If meetings tend to get bigger than predicted (where invites are being forwarded or uninvited participants try to join).

Step 9 **(Optional) Add conference bridges in Cisco TMS:**
If you want to do so, there are some advantages to optionally configuring TelePresence Conductor-managed conference bridges in Cisco TMS.

Step 10 **Configure TelePresence Conductor settings in TMS:**
In Cisco TMS, go to **Systems > Navigator >** select the TelePresence Conductor and go to **Settings > Edit Settings**.

In TMS Scheduling Settings, select the booking and dialing options for the TelePresence Conductor.

1. Do not enable H.323 dialing in either direction.
2. Do enable SIP URI dialing.
3. Optionally, go to **Extended Settings** to configure customized conference ID ranges with a specific number range and step value.

Step 11 **Schedule the Conferences:**
Note This guide describes the Cisco TMS Booking > New Conference method to schedule conferences. Other methods are available, including Smart Scheduler through Cisco TMSPE, Microsoft Outlook through Cisco TMSXE, and the Cisco TMSBA Booking API.
In Cisco TMS go to Booking > New Conference and define appropriate settings for the conference:

1. Use the **Basic Settings** to define a conference title, connection method, conference owner, start and end time, Cisco WebEx options, and options for recurrence.
2. Further options are available in the **Advanced Settings** area.
3. Use the **Participants** tab to add users and endpoints to the conference.

When you save a conference, dial-in numbers for the conference are distributed via email to the organizer and/or participants. Updated numbers are distributed if you subsequently update a conference.