MEETINGS

Transitioning from TelePresence Server to Cisco Meeting Server

Deployment Guide

February 28, 2020

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Introduction

Target Audience

This transition deployment guide is intended to be used by teams or individuals with experience configuring and administering Cisco call control platforms (Unified CM, VCS/Expressway), Cisco TelePresence Conductor, Cisco TelePresence Server (TS), and Cisco TelePresence Management Suite (TMS). There are links to other documentation throughout this document to assist.

Overview

Historically, collaboration network evolution developed from voice-centric architectures, video-centric architectures and web-centric collaboration architectures. While each component could be successful on its own, the components might not integrate well together to provide a cohesive collaboration solution.

Figure 1. Collaboration Technology Components

As technology advanced, the merging of these architectures was a natural progression from the different technology islands. Cisco began integrating more video-specific features into Cisco Unified Communications Manager (Unified CM) to allow registration of all endpoints both audio and video, to a centralized call control system. This evolution of architectures enabled a single meeting infrastructure, creating a whole new set of collaboration options that expanded the way people communicated.

The acquisition in 2016 of Acano was another step in this evolution. This acquisition provided Cisco, in what would become the Cisco Meeting Server, scale and interoperability in one on-premises platform with voice, video and web conferencing. Cisco Meeting Server provides a software conferencing solution with industry leading scale for voice and video conferences, robust interoperability with Microsoft Skype for
Introduction

Business and an exceptional user experience from mobile applications to room systems.

Figure 2. Cisco Meeting Server: Voice, Video and Web Conferencing

As shown in Figure 3, a typical customer normally has several different collaboration infrastructure components on the network, a bridging platform, a call control platform, and a management and scheduling platform. In the Cisco architecture this would include:

- Cisco Telepresence Server (TS) or Cisco MCU for bridging.
- Cisco Unified Communications Manager (Unified CM) or Cisco Video Communication Server (VCS) / Cisco Expressway for call control.
- Cisco Telepresence Management Suite (TMS) for management, scheduling and Microsoft Exchange integration.

Components may vary slightly in some environments, but this will be the basis for the rest of the document.
Table 1 lists the key elements of the on-premises architecture prior to transitioning to Cisco Meeting Server:

Table 1. Before: On-Premises Conferencing Infrastructure Components

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cisco TelePresence Conductor</strong></td>
<td>Manages conferencing resources.</td>
</tr>
<tr>
<td><strong>Cisco TelePresence Server (TS)</strong></td>
<td>Provides audio and video conferencing resources.</td>
</tr>
<tr>
<td><strong>Cisco TelePresence Management Suite (TMS)</strong></td>
<td>Provides meeting management, scheduling, Exchange integration, conferencing integration, and other advanced video features.</td>
</tr>
</tbody>
</table>

As illustrated in Figure 4, customers who have the Cisco MCU, Cisco TelePresence Conductor, and Cisco TelePresence Server have a choice of transitioning the architecture towards cloud-based Cisco Webex Meetings or staying on-premises by transitioning to Cisco Meeting Server (CMS).

The decision needs to be made based on customer’s functionality requirements. Customers that require the following should transition the existing bridging infrastructure to Cisco Webex rather than Cisco Meeting Server (CMS):

- Meetings with the majority of the participants connecting via the Internet or using cloud registered video endpoints
- Meetings hosted in the cloud
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- Meetings where participant interaction is required (for example, Training Center meetings)
- Meetings where a customer prefers not to host infrastructure hardware (OpEx v versus CapEx preference)
- Large scale PSTN meetings

**Figure 4.** On-Premises Bridging Transition Decision Tree

**Note:** For information on transitions from Cisco TelePresence Server to Cisco Webex, refer to the TS / CMR-H to Webex transition documents available at [https://www.cisco.com/go/ct](https://www.cisco.com/go/ct).


This document focuses on customers with Cisco TelePresence Conductor and Cisco TelePresence Server solutions that want to keep their conferencing on-premises and learn about the requirements and considerations for transition to the Cisco Meeting Server platform.
Core Components

Roles of the Components Involved

The target architecture for this migration includes several new infrastructure components. This includes Cisco Meeting Server (CMS) for conferencing, Cisco Meeting Management (CMM) for conference management, and Cisco Hybrid Calendar Services for cloud calendar integration.

The target architecture for this migration is shown in Figure 5.

Figure 5. After: Cisco Meeting Server Architecture

Table 2 lists the new elements of the architecture after transitioning to a Cisco Meeting Server architecture.

Table 2. After: Cisco Meeting Server Infrastructure Components

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisco Meeting Server (CMS)</td>
<td>Provides voice, video, and web conferencing services delivered on-premises as one or more virtual machines or appliances.</td>
</tr>
<tr>
<td>Cisco Meeting Management (CMM)</td>
<td>Meeting management platform used in tandem with Cisco Meeting Server for management and operations of conferencing.</td>
</tr>
<tr>
<td>Cisco TelePresence Management Suite (TMS)</td>
<td>Provides meeting management, scheduling, Exchange integration, conferencing integration, and other advanced video features.</td>
</tr>
<tr>
<td>Cisco Hybrid Calendar Services</td>
<td>Enables @meet scheduling with O365 or Google calendar services</td>
</tr>
</tbody>
</table>
Transition

Transition Getting Started

Below is a summary of pre-transition items to consider when performing the transition from Cisco TelePresence Server to Cisco Meeting Server. Some items listed are optional and may be performed after the initial deployment.

1. Decide to maintain conferencing workload on-premises

Decide based on the customer technical requirements to keep all bridging functionality on-premises. This document assumes the decision has been made to move from Cisco TelePresence Conductor and Cisco TelePresence Server to Cisco Meeting Server (CMS).

2. Determine appropriate CMS architecture for deployment.

As described in the product documentation available at https://www.cisco.com/c/en/us/support/conferencing/meeting-server/products-installation-and-configuration-guides-list.html, there are two CMS deployment models or architectures:

- **Combined Server Deployment**

  CMS may be deployed as a single physical server hosting all CMS Services as shown in Figure 6 below.

  ![Figure 6. CMS Combined Server Deployment Model](image)

- **Split Server Deployment**

  As shown in Figure 7, CMS may also be deployed as a logical server with server components split across multiple physical servers for resiliency and/or geographic distribution.
Figure 7. CMS Split Server Deployment Model

Table 3. Cisco Meeting Server Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Bridge</td>
<td>Audio, video, and content conferencing</td>
</tr>
<tr>
<td>Web Bridge</td>
<td>Enables joining through WebRTC based clients</td>
</tr>
<tr>
<td>Database</td>
<td>Meeting space data</td>
</tr>
<tr>
<td>Uploader</td>
<td>Uploads recordings to the content manager. For example, Vbrick.</td>
</tr>
<tr>
<td>Recorder</td>
<td>Records conferences on CMS</td>
</tr>
<tr>
<td>Streamer</td>
<td>Streams conferences from CMS</td>
</tr>
<tr>
<td>Load Balancer</td>
<td>Creates TLS connection between core and edge in split CMS deployments</td>
</tr>
<tr>
<td>SIP Edge</td>
<td>Provides SIP Edge services</td>
</tr>
<tr>
<td>TURN Server</td>
<td>Provides firewall traversal</td>
</tr>
<tr>
<td>XMPP</td>
<td>Application media and registration</td>
</tr>
</tbody>
</table>

Note: Components with blue text in Figure 6, Figure 7, and Table 3 below are expected to be deprecated from CMS at some point in the future.

For scalable and resilient deployments consider the following:
- Servers can be deployed with multiple combined servers, multiple split servers or a combination of each

- There must be an odd number of database instances for a scalable and resilient deployment

- The CMS servers can be virtualized, run on CMS hardware, run on X Series hardware, or run on a combination of platforms

**Note:** A CMS deployment does not require Cisco Conductor for conference orchestration.

3. Acquire Cisco Meeting Server hardware and software.

Select a CMS platform to run all instances of CMS. Options include:

- CMS 1000 UCS C220 Hardware (VMWare hosted)

  The CMS 1000 is shipped with the CMS software pre-installed.

- CMS 2000 UCS 5108 with UCS B200 (Bare metal no VMWare)

  The CMS 2000 ships with CMS software pre-installed.

**Note:** While both the CMS 1000 and 2000 ship with CMS software pre-installed, once operational, you should download the latest CMS software version from [https://software.cisco.com/](https://software.cisco.com/) and upgrade the system,

- Cisco Meeting Server software for specifications-based server deployments (VMWare hosted).

  For specification-based deployments, you should download the latest CMS OVA from [https://software.cisco.com/](https://software.cisco.com/) and install it on the VMWare host.


4. Determine and acquire required CMS licensing for your deployment.
CMS licensing options include:

- Personal Multiparty Plus (PMP Plus) provides a named host license assigned to a specific user. It is recommended for users who use video frequently.
- Shared Multiparty Plus (SMP Plus) provides a concurrent license that is shared by users who use video less frequently (shared host)
- Optional licenses may also be purchased for:
  - Recording/streaming capabilities
  - Branding capabilities with the ability to create custom layouts

5. For more information on CMS licensing, refer to the CMS ordering guide at https://www.cisco.com/c/en/us/products/collateral/conferencing/webex-telepresence/guide-c07-730707.html. Acquire network address, user account access, and configuration information for LDAP and TelePresence Management Suite (TMS) integrations:

In order to integrate with LDAP, the following information is required:

- LDAP directory server IP address.
- LDAP User group schema for CMS users and Spaces (Virtual Meeting Rooms).
- An LDAP read-only user account used for the CMS LDAP integration.

As shown in Figure 8, user configuration and space addressing is based on field mapping of containers in the Active Directory as configured on the Active Directory Configuration page.
In order to integrate with Cisco TMS (if applicable), perform the following:

- Upgrade TMS to most current version supported by CMS.
- Determine the TMS IP address.
- Create or select a TMS user account for the CMS TMS integration.

6. Plan and prepare dial plan details for calling into CMS meetings and spaces.

The dial-in information for the CMS deployment is based on the CMS integration with LDAP for spaces and users. LDAP mapping for dial-in configuration determines the user join experience and must align with the dial plan configuration in Unified CM.

You may wish to consider the addressing of the existing TelePresence Server/Conductor solution when planning and preparing CMS dial plan. Using the same or similar dial-in numbering will simplify integration with existing Unified CM dial plan.

7. Acquire Cisco Meeting Management (CMM) hardware and software.

CMM is a tool that provides a browser interface to manage meetings on the CMS. The CMM enables “White Glove” management of meetings. CMM software is provided at no cost to supported CMS customers. CMS runs on specifications-based virtual server. You should download the latest CMM OVA from [https://software.cisco.com/](https://software.cisco.com/) and install it on the VMWare host.
Transition


Note: While CMM is optional with CMS 2.8 and earlier versions, with future CMS releases, CMM will become a mandatory component for CMS deployments.

Transition Steps and Considerations

Follow these transition steps to move from Cisco Conductor / TelePresence Server Solution to a Cisco Meeting Server solution:

1. Deploy CMS based on the selected deployment architecture.

   Deploy CMS hardware and software as required by the selected deployment model architecture: combined server or split server.

   As shown in Figure 9, multiple interfaces are required to deploy and maintain a CMS solution.

   **Figure 9. CMS Platform Interfaces**

   CMS provides the following interfaces:

   - **Mainboard Management Processor (MMP) interface**
     The command line interface is accessible via console or SSH and used for low-level system configuration.

   - **Browser Interface**
     The Web Admin interface provides HTTPS access for Call Bridge configuration.

   - **Application Programming Interface (API)**
     The API interface enables enhanced integration capabilities using ReST API methods including: GET, POST, PUT, and DELETE.
Transition

- **SFTP Interface**
  The SFTP interface provide CMS system file access for upgrades, backup and restore operations, and certificate file management.

2. **Prepare and deploy security certificates for appropriate CMS interfaces**


When CMS interfaces with external devices and services, public CA issued or signed certificates are required. When communicating with internal devices and services, CMS only requires certificates signed by a private CA.

Non-CA signed or self-signed certificates may be created via the MMP interface on CMS. However, self-signed certificates cannot be used for:

- Deployments with Microsoft interop requirements.
- Deployments with TLS SIP trunks.
- CMS clustered environments.

**Note:** It is strongly recommended that publicly signed certificates be used for production environments.

3. **Deploy CMM and integrate to CMS**

Complete the following steps to deploy and integrate CMM:

i. Install CMM OVA on the VMWare host and then connect and configure network settings.

ii. Once installation and initial configuration is complete enable Smart Licensing by connecting CMM to the Cisco Smart Software Management (CSSM) portal.

iii. In order to manage CMS meetings, you must add CMS Call Bridge(s) to CMM.
iv. If applicable connect CMM to TMS. CMM is integrated with TMS to manage TMS scheduled conferences. Once integrated enable CMM access to TMS address books.


4. Transition existing scheduled conferences.
Transitioning scheduled conferences will vary depending on your existing environment and should be considered carefully.

Determine the scheduled conference migration method that works best for your deployment. There are two options for scheduling migration:

i. Modify existing scheduled conferences in TMS to use CMS as the MCU resource.

This method is best for deployments that have very few s recurring conferences or conferences scheduled in the future.

ii. Use CMS as the preferred MCU resource for new conferences scheduled in TMS and leave TS/Conductor in service until conferences previously scheduled with TS are completed.

This method is best for deployments that have large numbers of recurring conferences or many conferences scheduled in the future.

Recommendation for transitioning scheduled conferences where both conferencing solutions are running side by side:

With this method both conferencing solutions are running in parallel. In this case direct users to schedule new meetings on the CMS solution while recurring and previously scheduled conferences continue to operate on the existing TS/Conductor solution. Once a majority of existing recurring and previously scheduled meetings have occurred (~75-80%) direct all users to schedule future recurring meetings on CMS solution in TMS.

Before completing the transition from TS/Conductor, it is a good idea to preliminary test TMS scheduling for the new CMS solution. This can be accomplished by:

- Configuring Cisco TMS coexistence via the EnableCMSTrial registry entry. This enables the ability to have a test user group in TMS that will schedule
meetings with CMS as the MCU resource while other user groups continue to schedule with existing MCU’s.

- Having users in the test user group schedule meetings with CMS as the MCU resource, thus allowing for acceptance testing in order to validate proper operation.

- Updating user training materials and documentation to reflect the scheduling behavior and operation with CMS as the conference resource.

- Transitioning additional groups of users once testing acceptance is completed. Alternatively, the TMS administrator may configure CMS as the “Preferred MCU Routing Type” globally in TMS as shown in Figure 10.

Figure 10. TMS Conference Settings: Preferred MCU Routing Type

5. Understand meeting client application(s) for end-users once they are migrated to CMS.

As shown in Figure 11, there are two meeting client applications available for use with CMS meetings:

- Cisco Meeting Application (CMA) including WebRTC

- Cisco Jabber
Cisco Meeting Application
A Cisco Meeting Server deployment includes the Cisco Meeting Application (CMA) which enables a participant to join a meeting using a web browser. This capability extends the collaboration experience enabling participation beyond room systems.

CMA WebRTC enables users to fully participate in meetings with audio, video and content sharing from a browser without requiring plugins or downloads. CMA also provides access to the self-service user portal for managing spaces and other meeting settings.

Cisco Meeting Application features are shown in Figure 12.
The following configuration on CMS is required in order to use CMA:

- Enable the XMPP server in CMS in order to use CMA.
- Enable Web Bridge in CMS in order to use CMA.
- Enable CMS integration to LDAP via the Active Directory configuration page to allow users to connect CMA to CMS.

CMA Webex RTC supports the following web browsers and versions:

- Google Chrome version 66 or greater
- Mozilla Firefox version 59.0.3 or later
- Apple Safari 11.1
- Microsoft Edge (Beta feature support from CMS 2.8)

Note: It is strongly recommended that the most current version of browsers be used for CMA WebRTC. Important information regarding the CMA can be found at https://www.cisco.com/c/dam/en/us/td/docs/conferencing/ciscoMeetingApps/WebRTC_important_info/Release_Notes_CMA_webRTC_latest.pdf.

Cisco Jabber
An existing Jabber deployment can be integrated seamlessly with the CMS solution via the use of Active Control. Jabber is able to integrate with the CMS
solution providing the functionality users expect from their Jabber meeting workflow.

Cisco Jabber features available with CMS meetings are shown in Figure 13.

Figure 13. Cisco Jabber CMS Meeting Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show participant list</td>
<td>✔️</td>
</tr>
<tr>
<td>Change layout</td>
<td>✔️</td>
</tr>
<tr>
<td>Show active speaker</td>
<td>✔️</td>
</tr>
<tr>
<td>Show presenter</td>
<td>✔️</td>
</tr>
<tr>
<td>Add participant</td>
<td>✔️</td>
</tr>
<tr>
<td>Mute/unmute participants</td>
<td>✔️</td>
</tr>
<tr>
<td>Drop participant</td>
<td>✔️</td>
</tr>
<tr>
<td>Lock/unlock conference</td>
<td>✔️</td>
</tr>
<tr>
<td>Start/stop recording</td>
<td>✔️</td>
</tr>
</tbody>
</table>

Cisco Jabber Active Control integration with Cisco Meeting Server requires the following minimum versions:

- CMS 2.5
- Cisco Unified CM 12.5

6. Understand the join experience for CMS deployments.

Once migrated to CMS the join experiences are consistent with the join experiences in a TS/Conductor deployment.

- Conferences are scheduled in TMS for both TS and CMS deployments with the same join information and join process as shown in Figure 14.
In a CMS deployment, the concept of Spaces is analogous to CMRs on TelePresence Server. Spaces are conferences that are always available and are reached by dialing the address for that conference. There are three types of Space on CMS.
- Personal Meeting Room (PMR) Spaces – These are permanent personal user conferences that are assigned to a specific user.
- Ad-hoc Spaces – These are conferences that are created as needed on an ad-hoc basis by a user.
- Scheduled Spaces – These are conferences that are scheduled in advance.

**Post Transition Considerations**

After the transition is finished, there are additional steps to finalize the deployment. Some of these steps are optional but enable functionality that was not available previously with the Cisco TS/Conductor deployment.

1. CMS meetings experience customization (optional).

CMS may be customized to fit a customer’s meeting experience requirements. CMS branding enables the following customization options:
- Customized CMA WebRTC background image.
- Customized IVR prompts.
- Customized participant welcome screens visible when joining meetings.
- Customized meeting invitation text.
Transition

**Note:** Branding customization may not be optional for all deployments. In fact, it may be required as part of the transition steps for some customers while making this transition. Specifically, customized meeting invitation text may be required, for example, if organization policy dictates the need for special branding or legal statements in meeting invites.


2. Implement recording and streaming functionality (optional).

Recording and streaming capabilities are provided in CMS with the recorder and streamer components. Cisco TelePresence Content Server is not supported as a recording and streaming solution with CMS.

The architecture for recording and streaming is shown in Figure 15.

*Figure 15. Recording and Streaming Architecture*
**Note:** Enabling these features requires an additional CMS license on a per recording/stream basis.

**Note:** CMS XMPP server is also required for Recorder and Streamer functionality.

The CMS recording and streaming functionality relies on standard file formats and streaming protocols. While other solutions can be expected to function, the CMS recording and streaming solution is tested with Vbrick platforms. For more information about the Vbrick integration refer to [https://vbrick.com/cisco-partnership/](https://vbrick.com/cisco-partnership/).

3. Enable @meet scheduling with O365 or Google cloud calendar services (optional).

Referred to as next generation scheduling, CMS together with TMS provides a scheduling experience consistent with cloud meeting scheduling experience. As shown in Figure 16, this functionality enables a user to create a meeting invite and schedule a CMS meeting (with the @meet notation) using O365 or Google cloud-based calendar services.
Figure 16. Next Generation Scheduling with Cloud Calendar Services

This cloud scheduling capability leverages the Expressway-C Calendar Connector service and Webex cloud hybrid calendar services.

4. Enable Cisco Meeting Server interoperation with Microsoft Skype (optional).

If your deployment includes either of the following, you can integrate them with CMS:

- Microsoft Skype for Business (Lync) on premise
- Microsoft Skype for Business O365

The integration of CMS with Microsoft Skype enables SIP to Microsoft gateway conferences with CMS serving as the gateway as shown in Figure 17.
The integration of CMS with Microsoft Skype also supports dual home conferences where Skype participants are hosted on their native MCU (Skype AVMCU) and SIP participants are hosted on the CMS (see Figure 18).

Point-to-point meetings between Skype participants and SIP participants are also able to use the CMS as the gateway.

5. Remove Cisco TelePresence Conductor(s) and Cisco TelePresence Server(s) from the deployment.

Once all users and all scheduled one-time and recurring meetings have been migrated to CMS, you can now remove any Cisco TelePresence Server (TS) and TelePresence Conductor nodes from your deployment.

After all the TS and Conductor nodes have been removed, you should purge the TS and Conductor instances from the TMS database.

6. Disable or remove dial plan and configuration to the SIP trunk pointing at the Cisco TelePresence Conductor in Cisco Unified CM.

Once the TS and Conductor nodes have been removed, you should then update the Unified CM dial plan configuration (route groups, route lists, and route patterns). In addition, remove any SIP trunks that were pointing to the Conductor node(s). This simplifies the Unified CM configuration and reduces database size as well as load on the system.
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