



Cisco Meeting Management

Cisco Meeting Management 3.1

User Guide for Administrators

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Document revision history

Table 1: Document revision history

Date	Description
2021-02-10	Updated the Backup and restore section about Configuration backup not containing license settings.
2020-11-30	Document published.

1 Introduction

This guide is for administrators of Cisco Meeting Management.

Cisco Meeting Management is a management tool for Cisco's on-premises video conferencing platform, Cisco Meeting Server. It manages licensing and provides a user-friendly interface to the Meeting Server.

As a Meeting Management administrator, you can:

- Install and configure Meeting Management
- Edit licensing settings for the Meeting Server
- Provision space templates and web app users on the Meeting Server
- Act as a video operator

A video operator can:

- View all active meetings and meetings that have ended within the last week
- View upcoming meetings that have been scheduled using Cisco TMS (TelePresence Management Suite)
- Manage active meetings
- See current Meeting Server license status

Cisco Meeting Management 3.0 or later is mandatory with the Meeting Server 3.0 or later, and it requires no additional licensing.

1.1 What is new in 3.1

For a general overview of new features and changes, see the release notes.

1.1.1 Changes to this guide since 3.0

We have added the following sections:

- [Provisioning - Automatically create spaces](#): This section describes how you can provision spaces for groups of users.
- [Cisco Meeting Server Cloud Connector](#): This section describes the Cloud Connector and links to the Cloud Connector documentation.

We have made changes to the following sections:

- [Deployment overview](#): We have added a subsection about Cisco Meeting Server Cloud Connector metrics.
- [Overview - view notifications and license status](#): We have rewritten the section to reflect that Cisco Meeting Server Cloud Connector has been added.
- [Provisioning - Import users](#): We have update the section to reflect that you can now name user imports.
- [Provisioning - Allow users to create spaces](#): We have rewritten the section to reflect that you can now choose who gets to create which types of spaces.
- [Provisioning - LDAP sync](#): We have rewritten the section to reflect that you can now schedule LDAP sync.
- [Backup and restore](#): We have added information about license settings not being saved in configuration backup.

1.2 The software

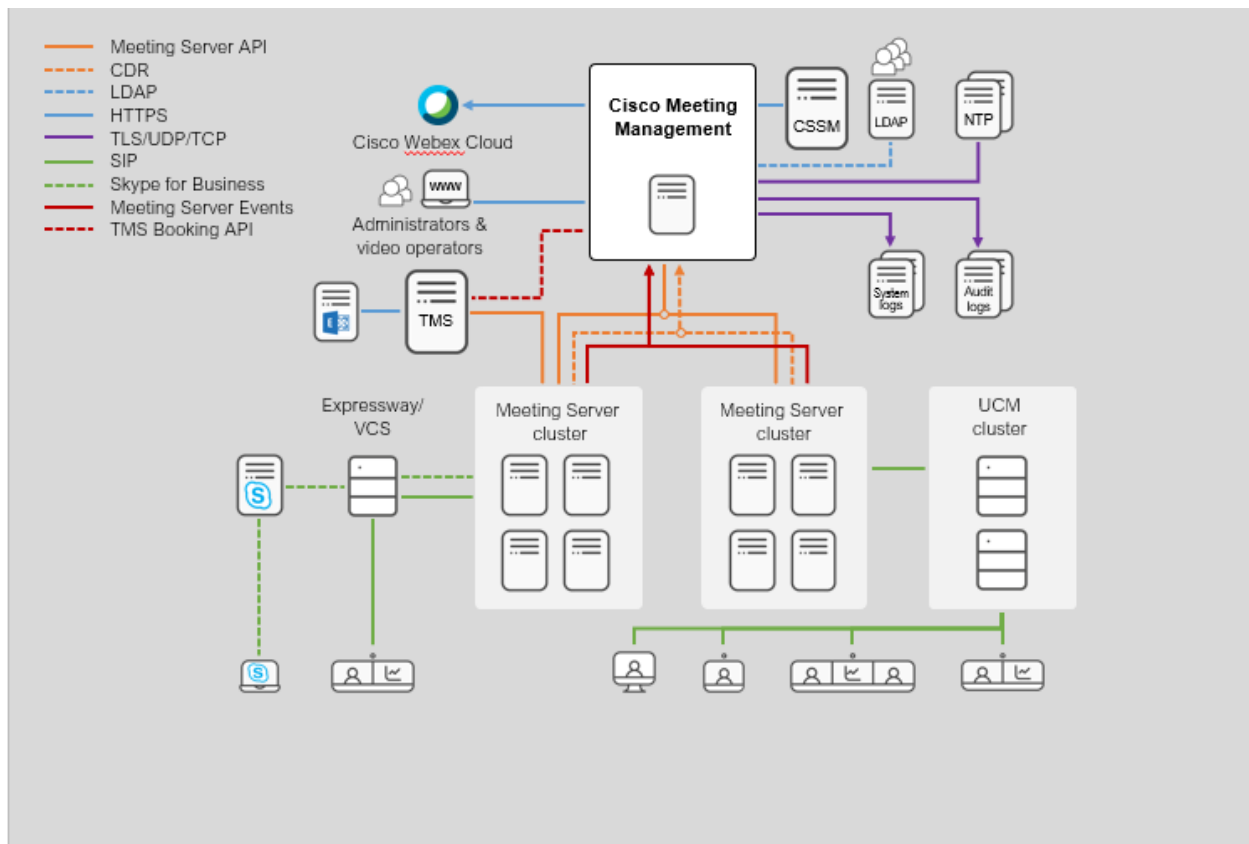
Meeting Management is a virtualized appliance. Specifications of the VM (virtual machine) depend on how many simultaneous actions your Meeting Management has to perform or observe. See the *Installation and Configuration Guide* for specifications and requirements, including our estimates on sizing related to the number of Call Bridges you are managing.

For security, there is no user access to the console after first run. Except for the installation process, all use of Meeting Management is via a browser interface.

2 Deployment overview

One instance of Meeting Management can manage a small Meeting Server deployment with only a single Call Bridge or a large Meeting Server deployment with multiple clusters of Call Bridges as shown below.

Figure 1: A single Meeting Management within a Meeting Server deployment



Meeting Management connects to Meeting Servers via the Call Bridge API. To get information on meeting activity, it installs itself as a CDR (Call Detail Record) receiver and events client on each Call Bridge and gets information about active meetings via API requests, CDRs, and Meeting Server events.

Note: If you choose to only use Meeting Management for licensing and provisioning for a cluster, then Meeting Management will not act as a CDR receiver or events client for Call Bridges in that cluster.

For greater reliability and accuracy you can configure more than one NTP server; Meeting Management supports up to 5 NTP servers. We recommend that all Meeting Servers and all instances of Meeting Management are connected to the same NTP servers.

2.1 Authentication of users

Meeting Management supports locally managed users as well as user authentication via LDAP. You can choose to have only local users, only LDAP users, or both.

- **Local users** are added and managed locally on the Meeting Management **Users** page. These users are authenticated directly by Meeting Management.

One local administrator user is generated during installation, and you can add more users after you have signed in for the first time. Local users are useful for setup and test, and for making LDAP changes without getting locked out of Meeting Management.

- **LDAP users** are added via mappings to existing groups on your LDAP server. Meeting Management uses your LDAP server to authenticate these users by checking their group membership when they sign in.

Authentication via LDAP is recommended for general use and administration.

We recommend that you have at least one local administrator user account. This is to make sure that you can still access Meeting Management if there are LDAP issues. For general use in production we recommend that users are authenticated via LDAP.

Note: All users can be either administrators or video operators. Their permissions depend only on the role, not whether they are managed locally or via LDAP.

2.2 Security and auditing

Meeting Management supports TLS 1.2 for its secure connections to its web interface and to connected servers.

Backup files are protected with a user-supplied password.

Event logs for active and recent meetings are available in Meeting Management. Audit logs and system logs can be sent to external syslog servers.

Also, advanced security settings let you comply with your organization's security policies if specific settings are required.

2.3 Diagnostics and troubleshooting

Meeting Management stores a limited amount of system logs locally. All audit and system logs can be sent to external servers.

Crash logs and a [log bundle](#) are available for support purposes.

Call Bridge details, local user accounts, and passphrase dictionary can be restored separately from other configuration details.

2.4 Integration with Cisco TelePresence Management Suite (TMS)

Cisco Meeting Management can be integrated with TMS, so you can use TMS scheduling, endpoint management, and phone book features while using Meeting Management to monitor and manage your meetings.

Meeting Management connects to TMS via its booking API, and every 5 minutes it checks that it can access phone books and updates information about scheduled meetings. Upcoming meetings are seen in Meeting Management up to 24 hours before their scheduled start time.

For a more seamless management across Meeting Management and TMS, each scheduled meeting has a direct link from its meeting details in Meeting Management to its editing page in TMS.

2.5 Licensing of the Meeting Server

Meeting Management is mandatory with Meeting Server 3.0 or later for licensing purposes. If you are using traditional licensing, then there are no changes to connections in your deployments. If you are using Smart Licensing, then you must connect to the Cisco Smart Software Manager, see below.

For more information on how to enable licensing, see the *Installation and Configuration Guide*. For information on license status levels, trials, and enforcement, see the [License status and enforcement](#) section.

2.6 Connection to the Cisco Smart Software Manager for Smart Licensing

You can use Meeting Management to monitor whether your Cisco Meeting Server deployments are using more licenses than you purchased. For traditional licensing, license files are installed on Call Bridges within the Meeting Server deployments, and Meeting Management receives information about both installed licenses and usage from the Call Bridges.

For Smart Licensing, Meeting Management uses the Smart Agent to communicate with the Cisco Smart Software Manager (Cisco SSM). Meeting Management sends daily usage reports to Cisco SSM, and Cisco SSM then reports back whether the deployment is in compliance.

Note: If you have more than one instance of Meeting Management connected to the same Meeting Server cluster, for example to add resilience, then only one instance of Meeting Management should be connected to the Cisco Smart Software Manager. If you connect both instances, the reported usage will be counted twice.

2.7 Cisco Meeting Server Cloud Connector for email or Webex Teams notifications

You can connect to the Webex Control Hub to see status for Meeting Management deployments from the Webex Control Hub interface and set up email or Webex Teams alerts.

The Cloud Connector also sends statistics to Cisco so we can improve our products. If you want to see what information is sent, see the Cisco Meeting Server Cloud Connector online help.

2.8 Provisioning users and creating space templates on Meeting Server clusters

You can use Meeting Management to provision Cisco Meeting Server web app users by importing users from one or more LDAP servers to connected Meeting Server clusters. You can also create space templates, which are pre-configured space settings that web app users can use to create new spaces.

Note that Meeting Management is not communicating directly with the LDAP servers for this purpose. Instead, LDAP server details and filter settings are sent to the Meeting Server, and the Meeting Server uses the details to provision users when an LDAP sync is triggered.

Note: For security and auditing reasons, we recommend that you create a separate bind user account for each Meeting Server cluster on each LDAP server.

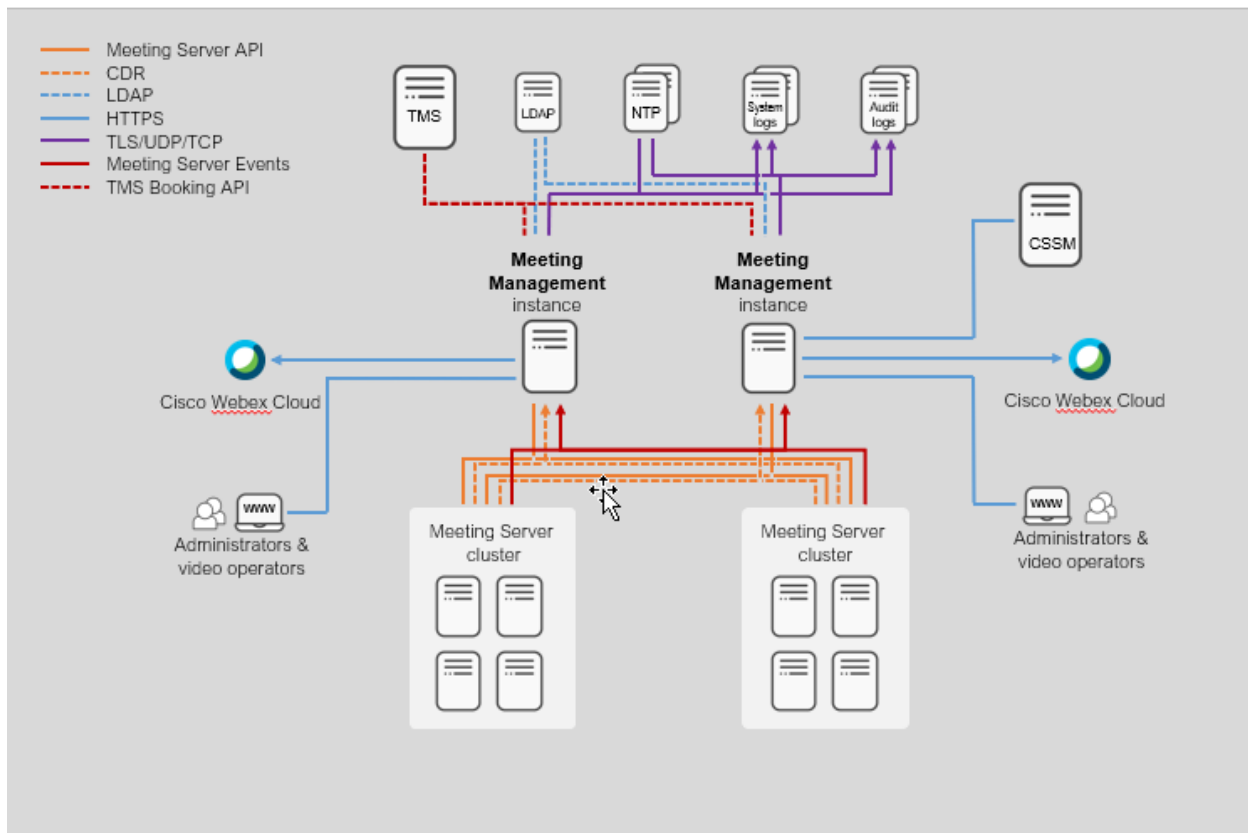
2.9 Resilience

To add resilience to your Meeting Management deployment, you can connect up to two instances of Meeting Management to the same Meeting Server deployments. They must be configured independently; both get their information directly from the connected Call Bridges and TMS servers. No information is exchanged between them. We recommend that the two instances of Meeting Management are placed in different locations so e.g. power outages or connection issues will not affect both instances at once.

There is no failover; both instances are active at all times, and settings that are local to Meeting Management, such as pinning a meeting at the top of the list, are only seen in the instance of Meeting Management where they were set.

Note: For resilient deployments, use only one instance of Meeting Management for licensing to avoid duplicate reporting. See [Licensing](#).

Figure 2: A resilient Meeting Management deployment



2.10 Capacity limitations if you have large volumes of meetings

The performance of the meeting management functionality depends on the volume of meetings on the connected Call Bridges. See the capacity table in the "Before you start" section of the *Installation and Configuration Guide* for capacity limitations. If you have a deployment that exceeds the capacity for large deployments, then you must disable the meeting management functionality. You can do this individually for each connected cluster.

2.11 If you are using the Cisco Meeting Server API or 3rd party tools

We strongly recommend that you do not use the API - or any 3rd party tool using the API - to manage active meetings at the same time as you monitor or manage meetings using Meeting Management.

3 Overview - view notifications, Cloud Connector status, and license status

On the **Overview** page you can always see system notifications and Webex Edge status.

Notifications are always visible on the **Overview** page, and a counter in the top bar tells you if there are any current notifications.

Notifications have 3 levels of severity:

- **Error:** Critical issue
- **Warning:** Issue that you must act on to keep Meeting Management running
- **Information:** Useful information or minor issue

If licensing is enabled on the instance of Meeting Management you are signed in to, you will also see [license status](#) for the Cisco Meeting Servers.

If Meeting Management is using Smart Licensing, then the license status is the same across all connected clusters. When you click on the blue **Smart Licensing** heading you will be taken to the **Licenses** page where you can see and edit details.

The screenshot shows the Cisco Meeting Management Overview page. The top navigation bar includes the Cisco logo, the text "Cisco Meeting Management", a "Notifications" button with a red dot, and the user profile "LDAP/Sally Wood Administrator". The left sidebar contains navigation icons for Overview, Meetings, Users, Servers, Logs, Licenses, and Settings. The main content area is titled "Overview" and features three panels:

- Notifications:** A list of three notifications:
 - Error:** "The credentials provided for server Server 1 are incorrect" (28/10/2020 15:34:19)
 - Warning:** "Events communications with server Server 2 have been disrupted" (28/10/2020 15:34:19)
 - Information:** "The server Server 3 is attempting to synchronize so meeting and participant details may be incomplete" (28/10/2020 15:34:19)
 A link "See notifications (3)" is at the bottom.
- License status:** A section for "Smart Licensing" with three sub-items:
 - Meetings: In compliance (green)
 - Recording or Streaming: In compliance (green)
 - Customization: Unlicensed (grey)
- Cloud Connected Cisco Meeting Server Status:** A status box with a green checkmark and the text "Cloud Connector registered, cloud notifications and usage metrics enabled".

If Meeting Management is using traditional licensing, you will see an individual license status for each cluster. When you click on the blue cluster name you will be taken to the **Licenses** page to see licensing information for that cluster.

The screenshot displays the Cisco Meeting Management Overview page. At the top left, the Cisco logo and 'Cisco Meeting Management' are visible. On the right, there is a 'Notifications' indicator with a red dot and the user profile 'LDAP/Sally Wood Administrator'. The main content area is titled 'Overview' and is divided into three sections:

- Notifications:** A list of three notifications from 28/10/2020 15:34:19. The first is an 'Error' about incorrect credentials for Server 1. The second is a 'Warning' about disrupted communications for Server 2. The third is an 'Information' message about Server 3 attempting to synchronize. A link 'See notifications (3)' is provided.
- License status:** A table showing the status of four clusters. Cluster 1 has 'In compliance' for Meetings, Recording or Streaming, and 'Unlicensed' for Customization. Cluster 2 has 'Insufficient licenses' for Meetings, 'In compliance' for Recording or Streaming, and 'Unlicensed' for Customization. Cluster 3 has 'In compliance' for Meetings, 'Out of compliance' for Recording or Streaming, and 'Licensed' for Customization. Cluster 4 has 'Out of compliance' for Meetings, 'Insufficient licenses' for Recording or Streaming, and 'Licensed' for Customization.
- Cloud Connected Cisco Meeting Server Status:** A single status item indicating 'Cloud Connector registered; cloud notifications and usage metrics enabled' with a green checkmark.

A vertical sidebar on the left contains navigation icons for Overview, Meetings, Users, Servers, Logs, Licenses, Settings, and Help.

Note: The number of notifications in the top bar is updated every 30 seconds, so it may temporarily differ from the number seen on the **Overview** page.

4 Meetings - monitor and manage meetings

On the **Meetings** page, you can act as a video operator to monitor and manage meetings. For instructions, see the *User Guide for Video Operators*, [the online help](#), and our [knowledge base](#) articles.

5 Users – Add users or edit user settings

5.1 About users

Meeting Management supports locally managed users as well as user authentication via LDAP. You can choose to have only local users, only LDAP users, or both.

- **Local users** are added and managed locally on the Meeting Management **Users** page. These users are authenticated directly by Meeting Management.

One local administrator user is generated during installation, and you can add more users after you have signed in for the first time. Local users are useful for setup and test, and for making LDAP changes without getting locked out of Meeting Management.

- **LDAP users** are added via mappings to existing groups on your LDAP server. Meeting Management uses your LDAP server to authenticate these users by checking their group membership when they sign in.

Authentication via LDAP is recommended for general use and administration.

We recommend that you have at least one local administrator user account. This is to make sure that you can still access Meeting Management if there are LDAP issues. For general use in production we recommend that users are authenticated via LDAP.

Note: The LDAP attribute name is case sensitive.

Users can have two roles:

- **Administrators** have full access to Meeting Management. Administrators will typically set up Meeting Management, change configurations, add users, and monitor and maintain the system.
- **Video operators** only have access to the **Meetings** and **Overview** pages. Video operators monitor and manage meetings, and they perform basic troubleshooting related to ongoing meetings. For instance, they may try to call a participant who got disconnected or check the call statistics if someone has audio issues.

For local users, the role is assigned to their user profile.

For LDAP users, the role is assigned to the LDAP group they belong to. If one user is in several groups with different roles, then this user will be assigned the administrator role.

5.2 Edit LDAP server details

LDAP server details are entered during the installation process. For details, see the *Installation and Configuration Guide*.

If you need to edit the details for your LDAP server or to replace the certificate, we recommend that you sign in as a local administrator user. This is to make sure that you can still sign in if there should be any issues with the details.

To edit LDAP server details:

1. Sign as a local administrator.
2. Make any relevant changes.
See the installation guide for requirements and detailed instructions.
3. Scroll down to the **Authorization** section and enter the password for your LDAP bind user.
4. **Save** the changes and **Restart** Meeting Management.

Note: You can restart now or wait until you have completed the configuration.

5.3 Add LDAP groups

LDAP user groups are configured on your LDAP server and mapped to Meeting Management, so Meeting Management can use the LDAP server to authenticate user by checking their group membership when they sign in.

See more about users and LDAP user groups in the [Before you start article](#).

5.3.1 Add LDAP user groups

To add a user group:

1. On the **Users** page, go to the **LDAP user groups** tab.
2. Click **Add LDAP group**.
3. Enter **LDAP path**.
4. Click **Check** to see if the group is found.
5. If the group is found, click **View users** to check if you see the usernames you expected to see in this group.
6. Select a role for the group.
7. Click **Next**.

- Optional: **Copy link** so you can send it to your users.

The link you see here is your CDR receiver address. If your team has chosen to provide a different address to users for accessing the browser interface, then give them that address instead.

- Click **Done**.
- Restart** Meeting Management

Note: You can restart now or wait until you have completed the configuration.

5.4 Set up security policies for local users

You can set up security policies for local users on the **Users** page, **Local configuration** tab.

You can set up the following policies:

- **Enforce password policy** to require a minimum password length

This is disabled until you select it. The default minimum length is 8 characters

- **Use a passphrase generator** to enable a built-in passphrase generator

The built-in passphrase generator combines words from a dictionary to suggest new passwords. The default number of words in a passphrase is 5, and you can choose any number between 1 and 8.

If you want to use the built-in passphrase generator, you need to provide a dictionary.

Dictionary requirements:

- *The dictionary must be a text file with one word in each line.*
 - *Characters must be UTF-8 encoded.*
 - *The file must not contain any null characters.*
 - *Maximum file size is 10 MB.*
- **Enforce password reuse policy** to restrict password reuse

This is disabled until you select it. The input fields are blank until you enter a value.

Note: Changes to the security policies only take effect after you **restart** Meeting Management.

Note: Note that **Enforce password policy** and **Enforce password reuse policy** are applied only when users change their own password.

Note: If the passphrase generator is enabled, Meeting Management will suggest passphrases for all users.

5.5 Add local users

You can add, remove, or edit local user accounts on the **Users** page, **Local** tab.

See more about users in the [Before you start article](#).

To add a local user:

1. On the **Users** page, go to the **Local** tab.
2. Click **Add local user**.
3. Enter a username.

Note: The username cannot be changed later, so check carefully before you save the details.

4. Optional: Enter first and last name.
5. Assign a role.
6. Create a new password.
7. Confirm password and click **Add**.

To delete a local user:

1. On the **Users** page, go to the **Local** tab.

2. Find the user you want to delete, and click  in the **Actions** column.

Note: You can never delete the administrator account you are currently signed in with.

If you only have one local administrator user account and you want to delete it, then sign in as an LDAP administrator to delete the local account.

6 Servers - add or edit Call Bridges

On the **Servers** page you can see and edit all your connected Meeting Server Call Bridges. You can also add new Call Bridges, or you can edit details for a cluster, such as whether you want to [disable meeting management](#). For each cluster, you can [set up provisioning of users and create space templates](#), you can [associate the cluster with TMS](#) to see upcoming meetings in Meeting Management. If you or another user has already used Meeting Management to set up provisioning, but did not commit the changes, you will see a notification banner for the cluster with a link that sends you to the **Provisioning** page, [Review and commit](#) tab for the cluster.

Your Meeting Management connects to Meeting Servers via the Call Bridge API. If you did not set up an API user account on each Call Bridge for your Meeting Management, please do that before you continue. For instructions, see "Accessing the API" in *Cisco Meeting Server API Reference guide*. You can find it on the [Programming Guides](#) page on cisco.com.

Also, if your [CDR receiver address](#) is not set correctly your Meeting Management cannot receive all the relevant information about active meetings, which you need if you enable the meeting management functionality.

To add a Call Bridge:

1. On the **Servers** page, click **Add Call Bridge**.
2. In the **Server address** field, enter the IP address or FQDN (fully qualified domain name) for your Call Bridge API.

This is the same as your Web Admin Interface address.

Note: If you type in IPv6 addresses, use square brackets.

3. In the **Port** field, enter the port number for your Call Bridge API.

Note: If you leave this field empty, Meeting Management will use port 443.

4. Enter the **Username** and **Password** for your Call Bridge API.

Note: For security and auditing reasons, we strongly recommend that you use a separate user account for Meeting Management.

5. Enter a **Display name**.

You can choose any display name you want. Keep in mind that it must make sense to other administrators and to video operators.

6. Optional: check **Use a trusted certificate chain to verify** if you want to use certificates.

7. Optional: **Check certificates against certificate revocation lists (CRLs)** if you have chosen to use certificates, and you want Meeting Management to reject the connection if a certificate has been revoked.

Meeting Management will block the connection if a certificate in the chain has been revoked, or if there is a CRL it cannot access.

We recommend that you enable this when possible.

Note: Only certificates with HTTP Certificate Distribution points (CDPs) are supported. If you are using CRL checks, and a certificate has no CDP, or if the CDP is not reachable via HTTP, then the connection is rejected.

Also, Meeting Management must be set up so it can connect to external address via HTTP.

8. Optional: If you have chosen to use certificate security, then **Upload certificate**.

Certificate requirements:

- *The certificate chain should include the certificate of the CA that signed the Web Admin Interface's certificate, plus any certificates higher in the certificate chain, up to and including the root CA certificate.*
- *The server address you entered for your Call Bridge must be included in the Web Admin Interface certificate.*

Note: If the SAN (Subject Alternative Name) field is used, Meeting Management does not look at the Common Name, so make sure that the server address is added to the SAN field.

9. Optional: If you want to use Meeting Management only for licensing and provisioning, then uncheck the **Use Meeting Management to manage meetings on this cluster** check box.


Note: You can change this later by editing cluster settings, see [Disable meeting management for a cluster](#).

Note: There is no information on the Meetings page to let video operators know that meeting management had been disabled for one or more clusters.


10. Click **Add**.
11. Optional: **Edit cluster** to give it a display name that makes sense to you as well as all other users.

If the Call Bridge you added is part of a cluster, the other Call Bridges in the cluster are auto-discovered and displayed below so you can easily add them.

To add auto-discovered Call Bridges:

1. Click **show**.
2. In the **Actions** column for a Call Bridge, click .
3. Enter details for the Call Bridge and upload certificate if relevant.
4. Continue until you have added all Call Bridges in the cluster.

To edit a Call Bridge:

1. Scroll down to the Call Bridge you want to edit and click  or click anywhere in the row.
2. Edit details.
3. Click **Done**

To disable or enable the meeting management functionality for an existing cluster:

1. Click **Edit cluster**
2. Check or uncheck the **Use Meeting Management to manage meetings on this cluster** check box
3. Click **Done**

7 Disable meeting management for a cluster

If you only want to use Meeting Management for licensing and provisioning, then you can disable meeting management for individual clusters. This can be useful if you want to free up CDR capacity for other tools, if a cluster has tenants, or if a cluster hosts high volumes of meetings. See Meeting Management capacity in the *Installation and Configuration Guide*.

To disable meeting management for a cluster:

1. Go to the Servers page
2. Click Edit cluster
3. Uncheck the Use Meeting Management to manage meetings on this cluster check box.

Meeting Management will no longer be a CDR receiver and events client on the Call Bridges in the cluster, and it will stop requesting information about meetings hosted on Call Bridges in the cluster.

Note: For new clusters you can set this as part of adding the first Call Bridge in a cluster.

8 Provisioning

You can use Meeting Management to provision users and space templates on connected Meeting Servers.

You can access provisioning settings from the **Servers** page. For the cluster you want to set up provisioning for, you can click **Set up provisioning** to go to a page that lets you configure the provisioning settings.

8.1 What is a space?

A space is a virtual meeting room that participants can dial into to have audio or video meetings. All members of a space have access to the space and see it in their app, similar to a shared meeting room where all members have a key and can enter the room when they want. Others can be invited in for a meeting by the members of the space.

For more information about what spaces are and how the apps work, see the [web app user guide and the visual "how to" guides](#), as well as the [Important Information](#) documents.

8.2 What is a space template?

A space template is a combination of pre-configured settings that can be used to create new spaces. The most basic settings are related to participants:

- What participant roles exist in the space, and which permissions each role has
For instance, some participants can have a host or leader role and have full permissions to add or remove people, start recording, mute others, etc, while others have guest or staff roles with limited permissions. You can also have spaces with just one role where all members have the same permissions.
- Whether participant roles should be differentiated by their passcode, or if they should each have a unique URI and Meeting ID

There are also settings that are related to the behavior of meetings held in the space, such as the default layout, whether meetings are automatically recorded, whether there is a participant limit, etc.

8.3 Provisioning steps

Setting up provisioning consists of setting up LDAP filters, defining space templates and a few other settings, and committing the changes.

1. [Before you start, get things ready.](#)
2. [Connect the cluster to LDAP servers.](#)
3. [Define which users to import.](#)
4. [Automatically create spaces.](#)
5. [Allow users to create spaces.](#)
6. [Review and commit your settings.](#)
7. [Start an LDAP sync to perform the provisioning.](#)

8.4 Provisioning - Before you start

8.4.1 Supported LDAP implementations

The Meeting Server supports the following LDAP implementations:

- Microsoft Active Directory (AD)
- OpenLDAP
- Oracle Internet Directory (LDAP version 3)

For information about which versions have been tested with each version of the Meeting Server, see the [Interoperability Database](#).

CAUTION: If you have set up LDAP via the Meeting ServerWeb Admin Interface then provisioning via Meeting Management will not work. Before you set up provisioning in Meeting Management, sign in to the Web Admin Interface, go to **Configuration, Active Directory** page, and empty all input fields, then click **Submit**. To avoid locking users out, do not synchronize before you have finished setting up provisioning on Meeting Management.

8.4.2 LDAP server details

For each LDAP server you want the Meeting Server cluster to connect to, you need the following:

- Protocol (LDAP/LDAPS)

We recommend that you use LDAPS.

- LDAP server address
- LDAP server port number

Defaults are 389 for LDAP, 636 for LDAPS. We recommend that you use LDAPS on port 636.

If you want to use certificate verification: LDAP server certificate uploaded to the Meeting Server and TLS certificate verification enabled.

- *We recommend that you use certificate verification. For information on how to do this, see the FAQ article [How do I enable LDAP server certificate verification?](#)*
- Credentials for your LDAP bind user

For security and auditing reasons, we recommend that you create a separate bind user account for Cisco Meeting Server.

8.4.3 User import details

For each group of users you want to import, you need:

- Base distinguished name (DN)
- LDAP search filter
- Sign-in user name mapping

*This corresponds to what we call **Search attribute** when you connect an LDAP server to Meeting Management. It defines which LDAP attribute you want to use as the username that Meeting Server web app users will use to sign in to the app. It must have a format similar to \$sAMAccountName\$@example.com, and the attribute must be one that is unique for each user.*

- Display name mapping

This defines which LDAP attribute you want to be used as app users' display name. It must have a format similar to \$cn\$.

- Sufficient PMP Plus licenses

The import settings for a group define whether the users in the group are assigned personal licenses. If you choose to assign the users personal licenses, then you need one PMP Plus for each user in the group.

You do not need to install the licenses before you can provision users, but you need to install them before you start using the Meeting Server.

For more information about using LDAP with the Cisco Meeting Server, see the appropriate [Meeting Server deployment guide](#). There is a section on LDAP configuration as well as an appendix with more information on LDAP field mappings.

8.5 Provisioning - LDAP servers

The first step of provisioning users and space templates is to connect the Meeting Server cluster to one or more LDAP servers that you want the Meeting Servers to import users from.

On the **Provisioning** page, **LDAP servers** tab, you can enter the details that the cluster will use to connect to the LDAP servers.

8.5.1 How to add an LDAP server

To connect the cluster to LDAP servers:

1. In Meeting Management, go to the **Servers** page and click **Set up provisioning**.
2. On the **LDAP servers** tab, click **Add LDAP server**.
3. Optional: Enter a server name that makes sense to you and other Meeting Management administrators.
4. Choose protocol.
LDAP is for unencrypted TCP connections, LDAPS is for secure connections, optionally using the certificate trust store for authentication.
5. Enter server address and port number for the LDAP server.

Default port numbers:

- *LDAP: 389*
- *LDAPS: 636*

Note: You cannot upload a certificate via Meeting Management. To make an LDAPS connection fully secure, you must enable certificate verification on the Meeting Server and upload a certificate to its trust store. For instructions, see [How do I enable LDAP server certificate verification?](#)

6. Enter **Bind DN** and **Password** for the LDAP server.

These are credentials for the user account that will bind (authenticate) the Meeting Server cluster to your LDAP server.

7. Choose **Use LDAP paged results control** if you want the Meeting Server to receive search results in chunks, corresponding to pages in the LDAP library, rather than going through the whole database in one single operation.

We recommend that you use paged results, unless you are using Oracle Internet Directory.

Note: Paged results are not supported by Oracle Internet Directory.

Note: Your changes will not be applied before you have committed them. After you have committed the changes, template settings will take effect immediately. Changes to LDAP server details and any changes that affect users will take effect next time the Meeting Server is synchronized with the LDAP servers.

Note: All changes to provisioning settings that you have entered in Meeting Management will be lost if you restart Meeting Management before the changes have been committed.

8.6 Provisioning - Import users

As part of provisioning users and space templates on a Meeting Server cluster you must define which users to import from the LDAP servers that are connected to the cluster.

On the **Provisioning** page, **Import users** tab, you can add user imports, which are sets of LDAP filters and mappings that each define a subset of users to import from one of the connected LDAP servers.

8.6.1 How to add a user import

You can add as many user imports as you like. For each user import, you define subset of users to import from a specific LDAP server, you decide how their username and display names should be created, and you decide if you want to assign them a PMP Plus license.

We recommend that you make sure that the same users are included in only one user import. If PMP Plus licenses are assigned via one user import and not another, and a user matches the LDAP search filter for both user imports, then the user may or may not be assigned a PMP Plus license.

Note: If the same user is included in two different user imports, Meeting Management cannot control which user import the user will be associated with. This means that if a user is included in one user import that assigns PMP Plus licenses to users and is also included in a user import that does not assign any licenses, then you cannot control whether that user is assigned a license.

To define a subset of users to import:

1. Go to the **Servers** page and click **Set up provisioning**.
2. On the **Import users** tab, click **Add user import**.
3. Add a **Name** for the user import.

We recommend that you choose a name that will make it easy for you and other administrators to distinguish this user import from others. If you leave the field blank, Meeting Management will create a name based on the settings you configure below.

4. From the drop-down, choose the LDAP server you want to set this user import filter for.
5. Enter **Base distinguished name**.

The base distinguished name is the starting point for the directory search. The Meeting Server will search for LDAP groups in this node and all nodes below it in the LDAP tree.

6. Enter **LDAP search filter**.

This filter defines the subset of users that you want to import. The syntax for the Filter field is described in rfc4515.

Note: If you are using Active Directory, make sure that you enter a filter that only includes user objects.

7. Enter **Login user name mapping**.

This defines which LDAP attribute you want to use as the username that Meeting Server web app users will use to sign in to the app. It must have a format similar to \$sAMAccountName\$@example.com, and the attribute must be one that is unique for each user.

Note: The LDAP attribute name is case sensitive.

8. Enter **Display name mapping**.

This is the LDAP attribute that you want to use as participant name in meetings and on each web app user's own Home screen. It must have a format similar to \$cn\$.

Note: The LDAP attribute name is case sensitive.

9. Check the **Assign Personal Multiparty Plus (PMP+) license to imported users** check box if you want to assign PMP Plus licenses to users who are imported based on these filter settings.

If you prefer to use SMP Plus licenses, or if you want these users to only join meetings that have a different owner, then leave this check box unchecked.

Note: Your changes will not be applied before you have committed them. After you have committed the changes, template settings will take effect immediately. Changes to LDAP server details and any changes that affect users will take effect next time the Meeting Server is synchronized with the LDAP servers.

Note: All changes to provisioning settings that you have entered in Meeting Management will be lost if you restart Meeting Management before the changes have been committed.

8.7 Provisioning – Automatically create spaces

As a part of provisioning you can create spaces for users.

On the **Automatically create spaces** tab you can see all space templates that have been defined, and you can see which subsets of users will have spaces created with each template.

You can also create new space templates, and you can define which space templates to use to automatically create spaces. You can do this by setting up rules that map groups of users to space templates along with details of how space names and video addresses should be generated.

8.7.1 Add rules for automatically creating spaces

To define a rule:

1. Click **Add rule**.
2. Choose a user import from the **User import** drop-down.
3. Optional: Add a **Filter** to specify a smaller group of these users if you want to provision the same type of space to only some of them.

You can leave the field blank if you want to provision the same type of space to all of the users in the chosen subset.

4. Define a **Space name mapping**.

This defines a rule for how the space name will be generated. For instance, if you enter \$cn\$'s space, and a user's Common Name is Sally Wood, then this user's space will be named Sally Wood's space.

Note: The LDAP attribute name is case sensitive.

5. Define a **URI user part mapping**.

This defines a rule for how the URIs for the space are defined. For instance, if you enter \$sAMAccountName\$, and a user's SAM account name is swood, and the domain for the user is example.com, then the URIs will be swood@example.com, swood.host@example.com, or similar, depending on how the unique URI generator for a role is defined.

Note: The LDAP attribute used in the URI user part mapping must be unique for the user.

Note: It is possible to use more than one LDAP attribute in the URI user part mapping. If you use more than one LDAP attribute, then make sure that at least one of them is unique for the user.

Note: The Meeting Server will convert attribute values to lower case. No other characters are removed or modified (including spaces), so make sure that the URI user part mapping will result in a URI that can be used for all users.

6. Under **Choose a space template**, choose **Create new template** or choose an existing one.

*If you chose an existing template, click **Done** and ignore the following steps.*

*If you chose **Create new template**, click **Create space template** and continue to step 7.*

7. Define a **Template name**.

Note: This name is also what users see in the Cisco Meeting Server web app. Make sure that you choose a name that would make sense to ordinary app users.

8. Write a space **Template description**.

Note: This description is also seen in the web app, and they choose space templates based on this description. Make sure that you write a description that is easy for ordinary app users to understand.

-
9. Decide if different roles should be differentiated by their passcode, or if they should each have a unique URI and Meeting ID.
 10. Click **Add role**.
 11. Enter a **Role name**.

Note: Make sure that the name is descriptive so app users can guess from the name what this role is.

12. Enter a **Unique URI generator** to define a rule for how the Meeting Server should generate the URI that participants with this role should use to access the space.

*The URIs are created based on the URI user part mapping, the URI generator, and the domain. For example, if you entered \$.host, and the URI user part mapping is \$givenName\$.space, then a space for someone named Sally created on the domain example.com will have the URI **sally.space.host@example.com**.*

Note: This field is disabled if you chose to use the same URI for all roles.

13. Define the minimum passcode length.

If you ignore this setting, Meeting Management will choose to use the system default. If you do not want to require a passcode, then enter 0.

Note: The system default is 0, unless your Meeting Server administrator has set a different default on system or tenant level.

Note: If you have chosen to use the same URI and numeric ID for all roles, and there is more than one role, then you can only set one role to have no passcode. If you set more than one role to have no passcode, then the Meeting Server will ignore your setting for these and provide a 4 character passcode for them.

14. Click **Next**.
15. Check the **Make role and Activator** check box if you want participants with this role to be Activators.

An Activator is a participant who can start a meeting. For information about scenarios where this is relevant, see "Use the meeting lobby and lock meetings" in the [Cisco Meeting Management User Guide for Video Operators](#).

16. Define permissions for the role.

*To use the system value for a setting, leave the **Override** check box unchecked.*

*To define a new setting, check the **Override** check box and choose the value that you want.*

17. Click **Next**.

18. Repeat steps 10-18 until you have added all the roles you want in this space template.

19. Click **Next**.

20. Define default settings for the space.

*To use the system value for a setting, leave the **Override** check box unchecked.*

*To define a new setting, check the **Override** check box and choose the value that you want.*

21. Click **Done**.

Note: Your changes will not be applied before you have committed them. After you have committed the changes, template settings will take effect immediately. Changes to LDAP server details and any changes that affect users will take effect next time the Meeting Server is synchronized with the LDAP servers.

Note: All changes to provisioning settings that you have entered in Meeting Management will be lost if you restart Meeting Management before the changes have been committed.

8.8 Provisioning - Allow users to create spaces

As part of provisioning you can decide which web app users will be allowed to create which types of spaces. This is done by assigning space templates to specific user imports, or to groups within a user import.

On the **Provisioning** page, **Allow users to create spaces** tab, you can create space templates and assign them to specific groups of web app users.

8.8.1 Limitations

- The user who creates a space is not assigned any of the roles that you define in Meeting Management. The space creator, who is also the space owner, will receive the default call leg profile for the space.
- The user who creates a space will be a member of the space.
- All members of a space will get the same call leg profile as the user who created it.

- When you make changes to a template, not all changes are applied to existing spaces.
*New **Participant role settings** and **Space template settings** are applied to existing spaces. Other template changes, such as adding or removing roles, do not affect existing spaces. If you want to make changes to existing spaces, you can do this manually via the API.*

Note: spaces that have been automatically created but have not yet been activated by the user do not count as existing spaces. An automatically created space will have the settings applied that are valid at the time the user activates it.

- The web app does not indicate to users if a template has been changed.
We recommend that you update the name or the description when you make significant changes to templates that are already in use.
- Meeting Management provides a small subset of possible space settings.
If you want to configure additional settings to space templates you have created using Meeting Management, then you can use the Meeting Server API. See the [Cisco Meeting Server API Reference Guide](#).
- Templates that you have created or edited via the API will be visible in Meeting Management but you can only see the subset of the settings that can be edited in Meeting Management.
- Some settings in Meeting Management are a combination of multiple API settings.
We have combined some settings to make it easier to configure templates.
- The settings you configure using Meeting Management will replace any existing settings when you commit them.
This will only affect the specific settings that you configure. For instance, if you have defined a streaming URI for the space, this is not affected by settings you can configure from Meeting Management.

8.8.2 How to assign space templates to specific web app users

To create a space template:

1. Go to the **Servers** page and click **Set up provisioning**.
2. On the **Provisioning** page, **Allow users to create spaces** tab, click **Add Rule**.
3. Choose a **User import**.
4. Optional: Add a **Filter**.
5. From the **Chose space template** drop-down, choose an existing template, or **Create new template**.

-
6. If you chose an existing template, click **Done** and ignore the following steps.

If you chose to create a new template, click **Create space template** and continue with the following steps.

7. Enter a space **Template name**.

This is the template name that users will see in the web app when they choose which type of space to create.

Note: If you use special characters in the template name, then they may appear differently in status messages, displaying escape characters instead. The name will still appear correctly in the web app.

8. Write a space **Template description**.

This is the template description that users will see in the web app when they choose which type of space to create.

9. Decide if different roles should be differentiated by their passcode, or if they should each have a unique URI and Meeting ID.

URI is called video address in the web app.

Note: The Meeting Server recognizes roles by a participant's access method, which can be either the weblink or a unique combination of URI and passcode. The Meeting Server will add auto-generated passcodes if they are necessary to tell roles apart, or if you set a minimum password length. web app users can add or change passcodes when they manage their spaces.

10. Click **Add role**.

11. Enter a **Role name**.

This is the participant role name that web app users see when they choose which invitation details to send to someone.

12. Enter a **Unique URI generator** to define a rule for how the Meeting Server should generate the URI that participants with this role should use to access the space.

*The URIs are created based on the space name, the URI generator, and the domain. For example, if you entered \$.host, and a user creates a space called The A team on the domain example.com, then the URI would be **the.a.team.host@example.com***

Note: This field is disabled if you chose to use the same URI for all roles.

13. Decide if you want to override the system default for minimum passcode length.

If you ignore this setting, Meeting Management will choose to use the system default.

14. If you chose to override the system default, enter a minimum passcode length.

The default minimum length is 4 characters. If you do not want to require a passcode, then enter 0.

Note: If you have chosen to use the same URI and numeric ID for all roles, and there is more than one role, then the Meeting Server will ignore that you have chosen 0.

15. Click **Next**.
16. Check the **Make this role an Activator** check box if you want participants with this role to be Activators.

Activators can start meetings, and they can let other participants in from the lobby.

If you are creating a host and guest space, we recommend that hosts are Activators and guests are non-Activators. If you are creating a team space where you want all participants to have the same role, then you should make them Activators.

17. Configure permissions for the role.

*For each of the listed settings, you can check the **Override** check box if you want to override the settings that are configured for the default space call leg profile. The default call leg profile is defined by a combination of factory settings and settings defined via the API.*

18. Click **Next**.
19. Repeat adding more roles until you have added all the roles you want in this space template.
20. Click **Next**.
21. Define settings for the spaces that will be created from this template.

*To use the system value for a setting, leave the **Override** check box unchecked.*

*To define a new setting, check the **Override** check box and choose the value that you want.*

Note: If you want to define other settings than listed here, then you can adjust the templates via the Meeting Server API. See the *Cisco Meeting Server API Reference Guide* for information.

22. Click **Done**.

Note: Your changes will not be applied before you have committed them. After you have committed the changes, template settings will take effect immediately. Changes to LDAP server details and any changes that affect users will take effect next time the Meeting Server is synchronized with the LDAP servers.

Note: All changes to provisioning settings that you have entered in Meeting Management will be lost if you restart Meeting Management before the changes have been committed.

8.9 Provisioning – Review and commit

The provisioning **Review and commit** tab will show provisioning settings.

If you have made changes that have not yet been committed, then the tab will show the settings that are local to Meeting Management.

- **Commit changes:** If you commit the changes, they will overwrite the current settings on the Meeting Server with the ones displayed here.

Note: Your changes will not be applied before you have committed them. After you have committed the changes, template settings will take effect immediately. Changes to LDAP server details and any changes that affect users will take effect next time the Meeting Server is synchronized with the LDAP servers.

Note: If you get the error message "Changes could not be committed at this time", some of the changes may have been committed. Check that all provisioning settings in Meeting Management are correct, and try again.

- **Discard changes:** If you discard the changes, then Meeting Management will retrieve the last committed settings from the Meeting Server and update the tab to show these.

If you have not configured any new settings, the tab will show the settings that Meeting Management has retrieved from the Meeting Server, and the buttons will be disabled. Settings are retrieved from the Meeting Server every 5 minutes, except while you are making changes to your settings.

8.10 Provisioning – LDAP sync

The last step of provisioning is to run an LDAP sync. This is required for the Meeting Server to import users from the LDAP server and apply the committed provisioning settings.

We also recommend that you perform an LDAP sync when there are changes to the information on the LDAP server, such as new users.

On the **Provisioning** page, **LDAP sync** tab, you can set up a regular sync schedule or manually trigger a sync, and you can see the status of recent syncs.

To configure scheduled syncs:

1. Click **View / edit sync schedule**.
2. To minimize disruption to active meetings, choose which Call Bridge should run the LDAP sync.
3. Choose on which days of the week the sync should run.
4. Choose at which time of day the sync should run, and click **OK**.

Note: The sync schedule is set on Meeting Management, and Meeting Management triggers each sync at the scheduled time. If you remove the Call Bridge the sync runs on, then scheduled syncs will not be run.

To manually trigger an LDAP sync:

1. Below the table, from the **Run a sync now on:** drop-down, choose which Call Bridge should run the LDAP sync.

To minimize disruption to active meetings, choose the Call Bridge that hosts fewer or less important meetings than the other Call Bridges.

2. Click **Run sync now**.

Note: The Meeting Server will sync with all LDAP servers that are connected to it.

Note: Every time you change any provisioning settings, we strongly recommend that you check that your settings have been applied correctly. Meeting Management reports whether the sync was successful, but it cannot check whether the defined groups or mappings were implemented as you planned.

9 Logs - logs, crash reports, detailed tracing

As an administrator, you can access all logs for Meeting Management.

Note: All logs accessed from Meeting Management are for Meeting Management, even though many of the messages are based on information received from Meeting Server Call Bridges.

Note: Most timestamps are in UTC. The exception is event logs which are displayed in your browser's time zone when viewed within Meeting Management.

Note: Event logs for a specific meeting are available on the **Meetings** page, meeting details view, for up to a week after the meeting has ended. See the *User Guide for Video Operators* for details. Event log information is also included in the Meeting Management system log, but you will not see the messages neatly sorted by the meeting they belong to.

9.1 Log bundle

From the **Logs** page, **Log bundle** tab, you can download a log bundle that contains information that Cisco Support would need for troubleshooting:

- The latest system and audit logs
- Configuration details (redacted to not include passwords)
- Version number
- A list of crash reports

If you need to contact Cisco Technical Support, always include the log bundle.

9.2 System logs

System logs contain all information on what has happened on Meeting Management. The latest system logs are included in the log bundle.

Only the latest logs are stored locally, so we strongly recommend that you set up an external syslog server to keep the full history in case you need it for Support.

Note: When troubleshooting issues with Meeting Management, you may need to look at Meeting Server logs as well. We strongly recommend that you use external syslog servers for all instances of Meeting Management, and for all your Meeting Servers.

9.3 Audit logs

Audit logs contain information about actions performed by Meeting Management users.

If audit logs are required in your organization, we recommend that you set up an external syslog server for audit logs.

9.4 Crash reports

From the **Logs** page, **Crash reports** tab, you can download or delete crash reports.

9.5 Detailed tracing

When requested from support, you can enable detailed tracing while reproducing an issue to gather comprehensive logs.

9.6 Add or edit log servers

We strongly recommend that you set up at least one syslog server for system logs. This is required for our support team to be able to offer efficient support.

Note: The latest system logs are stored locally, but the limit is 500 MB of system logs. When the limit is reached, the oldest 100 MB of logs are deleted.

To add a system log server:

1. On the **Logs** page, choose **System log servers**.
2. Click **Add log server**.
3. Enter server address and port number.

Default ports are:

- *UDP: 514*
- *TCP: 514*
- *TLS: 6514*

Note: If you type in IPv6 addresses, do not use square brackets here.

4. Choose protocol.

- Optional: **Check certificates against certificate revocation lists (CRLs)** if you have chosen to use certificates, and you want Meeting Management to reject the connection if a certificate has been revoked.

Meeting Management will block the connection if a certificate in the chain has been revoked, or if there is a CRL it cannot access.

We recommend that you enable this when possible.

Note: Only certificates with HTTP Certificate Distribution points (CDPs) are supported. If you are using CRL checks, and a certificate has no CDP, or if the CDP is not reachable via HTTP, then the connection is rejected.

Also, your network must be configured so Meeting Management can connect to external address via HTTP.

- If you chose TLS, **Upload certificate**.

The requirements for the certificate chain are:

- It must include the full certificate chain, up to and including the root CA certificate.*
- The address listed in the certificate must be the same as the one you have entered for the log server.*

- Click **Add**.
- Repeat until you have added the log servers you need.
- [Restart](#) Meeting Management

Optional: If required in your organization, add a syslog server for audit logs.

To add an audit log server:

- On the **Logs** page, choose **Audit log servers**.
- Click **Add log server**.
- Enter server address and port number.

Default ports are:

- UDP: 514
- TCP: 514
- TLS: 6514

Note: If you type in IPv6 addresses, do not use square brackets here.

- Choose protocol.

5. Optional: **Check certificates against certificate revocation lists (CRLs)** if you have chosen to use certificates, and you want Meeting Management to reject the connection if a certificate has been revoked.

Meeting Management will block the connection if a certificate in the chain has been revoked, or if there is a CRL it cannot access.

We recommend that you enable this when possible.

Note: Only certificates with HTTP Certificate Distribution points (CDPs) are supported. If you are using CRL checks, and a certificate has no CDP, or if the CDP is not reachable via HTTP, then the connection is rejected.

Also, your network must be configured so Meeting Management can connect to external address via HTTP.

6. If you chose TLS, **Upload certificate**.

The requirements for the certificate chain are:

- *It must include the full certificate chain, up to and including the root CA certificate.*
- *The address listed in the certificate must be the same as the one you have entered for the log server.*

7. Click **Add**.
8. [Restart](#) Meeting Management

10 Licenses

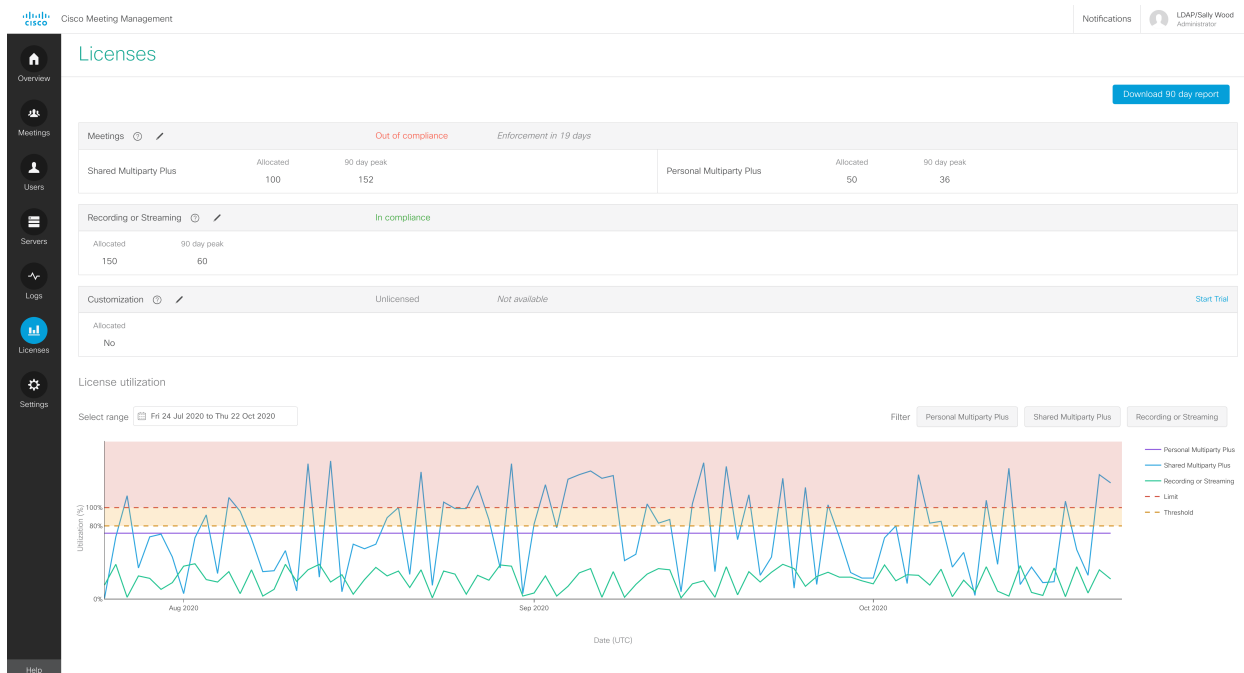
The **Licenses** page shows the following:

- A box displaying license status for each feature.
See status definitions in [License status and enforcement](#).
- Graphs of license utilization over time. You can specify a date range, and you can filter the graph based on license type.

Note: For date ranges of one day, Meeting Management displays one data point per 5 minutes. For longer date ranges, there is one data point per day showing the peak value.

Note: If you are in traditional licensing mode, and you are using license of a type that has not been installed, no percentage can be calculated, and any utilization will be shown at the top of a broken y-axis.

The screenshot below shows the **Licenses** page in Smart Licensing mode. If you are in traditional licensing mode, a drop-down in the top left corner lets you choose the cluster you want to see license information for, and there will be no edit button in the feature license boxes.



For each feature, the box displays the following information:

- Box header: Name of feature, then license status, and then enforcement warning, if any. If you have not used your trial, then there will also be a **Start trial** button to the right.

See the [License status and enforcement section](#) for more information.

- **Allocated:** The number of available licenses

For traditional licensing, Meeting Management gets this number from the license files that are installed on your Call Bridges. For Smart Licensing, you enter the number, and Meeting Management verifies with the Cisco Smart Software Manager.

- **90 day peak:** Highest number of licenses used within the last 90 days

If you want more details than you can see in the summary, you can **download 90 day report**.

Meeting Management will provide a zip file named **license-data.zip**, which contains the following files:

- **host-reported.csv**

This file contains the raw data as Meeting Management receives it from the separate Call Bridges in the cluster. Each row will display:

- Host ID for the specific Call Bridge
- Time stamp (UTC)
- For each license type, number of licenses used.

- **cluster-bins.csv**

This file contains cluster wide license use for each 5-minute interval, as calculated by Meeting Management. Each row will display:

- Time stamp for start time of the 5-minute interval (UTC)
- For each license type, summary of licenses used for all Call Bridges.

- **daily-peaks.csv**

This file contains daily peaks, as calculated by Meeting Management. Each row will display:

- Date (UTC)
- For each license type, peak number of licenses used that day after 3 point median smoothing

11 License status and enforcement

If licensing is enabled in the instance of Meeting Management that you are signed in to, it keeps you up to date on the licensing status for your Cisco Meeting Server deployment.

Licenses are sorted by functionality:

- **Meetings:** This consists of activation of the Call Bridge and user licenses. If you have the appropriate licenses, then the Call Bridge can be used.

For traditional licensing: All Call Bridges must have an activation key installed as well as PMP Plus or SMP Plus licenses.

Call Bridge activation keys are called `callBridgeEncryption` or `callBridgeNoEncryption` in the Meeting Server API.

For Smart Licensing: No activation key is required. If you have any PMP Plus or SMP Plus licenses available in your Virtual Account, then all connected Call Bridges can be used.

- **Recording or streaming:** These licenses allow recording or streaming.

For both traditional licensing and Smart Licensing, recording and streaming is licensed when you have recording or streaming licenses available.

- **Customization:** This license allows customized layouts.

For both traditional licensing and Smart Licensing, you can create customized layouts on the Meeting Server if you have a customization license.

The license status levels for Meetings are:

- **In compliance:** You have used 80% or less of the installed licenses.
- **Unlicensed:** You have not allocated any licenses.
- **Over 80% threshold:** You are still in compliance with your license agreement, but you have used more than 80% of the installed licenses.
- **Insufficient licenses:** You have used more licenses than available on 1 - 14 days within the last 90 days.

We allow temporary overuse as you may have unexpected peaks. However, we recommend that you evaluate your usage data and consider if you need to purchase more licenses.

- **Out of compliance:** You have used more licenses than available on 15 days or more within the last 90 days.

You are out of compliance with the license agreement. You should contact your Cisco partner or account team to discuss your needs and purchase more licenses.

The license status levels for Recording or streaming are:

- **Unlicensed:** You have not allocated any licenses for recording or streaming.
- **In compliance:** You have used 80% or less of the installed licenses.
- **Over 80% threshold:** You are still in compliance with your license agreement, but you have used more than 80% of the installed licenses.
- **Insufficient licenses:** You have used more licenses than available on 1 - 14 days within the last 90 days.

We allow temporary overuse as you may have unexpected peaks. However, we recommend that you evaluate your usage data and consider if you need to purchase more licenses.

- **Out of compliance:** You have used more licenses than available on 15 days or more within the last 90 days.

You are out of compliance with the license agreement. You should contact your Cisco partner or account team to discuss your needs and purchase more licenses.

The license status levels for customization are:

- **Licensed:** You have a customization license.
- **Unlicensed:** You do not have a customization license.
- **Out of compliance:** You have turned customization on in Meeting Management, but you do not have a customization license.

*This is only seen for Smart Licensing. You are out of compliance with the license agreement. You should change the allocation to **No** or contact your Cisco partner or account team to discuss your needs and purchase a license.*

11.1 Available trials

There are three types of trial:

- **Meetings trial:** This trial gives you unlimited licensing of all features, including recording or streaming and customization, for a period of 90 days.

You will not be offered a Meetings trial if Meetings is licensed, or if you have previously used your trial.

- **Recording or streaming trial:** This trial gives you unlimited use of recording and streaming for a period of 90 days.

You will not be offered a recording or streaming trial if you already have recording or streaming licenses, or if you have previously used your trial.

- **Customization trial:** This trial allows you to use customized layouts for a period of 90 days. You will not be offered a customizations trial if you already have a customizations license, or if you have previously used your trial.

Note: There is a difference between how Smart Licensing and traditional licensing use trials.

- **If you are using Smart Licensing**, then you get one trial of each type per Meeting Management deployment, shared between all the connected clusters. You cannot get a new trial by moving a cluster to a new Meeting Management deployment, as Meeting Management will not offer a trial if any of the connected clusters have previously been connected to a Meeting Management instance during a trial of the same type. Also, you cannot get a new trial by adding a new cluster that was not connected during the first trial.
- **If you are using traditional licensing**, then you can get one trial of each type per cluster.

Note: If you do not add licenses before a trial ends, then you will be out of compliance, and enforcement will be active. See details in the table below.

11.2 License status during and after trial

Trial type	What is included in the trial	License status during trial	License status after trial
Meetings	Unlimited use of meetings, recording and streaming, and customized layouts for 90 days	In compliance	<p>If you have any PMP Plus or SMP Plus licenses, then meetings will be in compliance.</p> <p>If you do not have any PMP Plus or SMP Plus licenses, then you will be unlicensed, and enforcement will be active until you add licenses.</p> <p>If you have any recording or streaming licenses, then recording or streaming will be in compliance.</p> <p>If you do not have any recording or streaming licenses, then recording or streaming will be unlicensed and unavailable.</p> <p>If you have a customization license, then customization will be licensed.</p> <p>If you do not have a customization license, then customization will be unlicensed and unavailable.</p>
Recording or streaming	Unlimited recording and streaming for 90 days	In compliance	<p>Recording or streaming will be in compliance if you have any recording or streaming licenses.</p> <p>If you do not have any recording or streaming licenses, then it will be unlicensed and unavailable.</p>
Customization	Customized layouts for 90 days	Licensed	<p>Customization will be licensed if you have a customization license.</p> <p>If you have no customization license, it will have the status unlicensed, and it will not be available.</p>

11.3 Enforcement and warnings

On the **Licenses** page you can see both license statuses and warnings about upcoming enforcement.

Warnings and enforcement for meetings:

- **Enforcement in <number> days:** This is Alarm 1. You are out of compliance, and Meeting Management is counting down to enforcement.
- **Enforcement active, high enforcement in <number> days:** This is Alarm 2, which means that enforcement is active. Meeting participants will see and hear warnings at the beginning of each meeting.
- **High enforcement active:** This is Alarm 3, which means that the highest level of enforcement is active. Meeting participants will hear warnings at the beginning of each meeting, and they will see an on-screen warning in larger text during the whole meeting.

Warnings and enforcement for recording or streaming:

- **Available for <number> more days:** Meeting Management management counts down to enforcement.
- **Not available:** You cannot record or stream meetings.

Warnings and enforcement for customization:

- **Available for <number> more days:** Meeting Management management counts down to enforcement.
- **Not available:** You cannot use customized layouts.

12 Settings - configure Meeting Management

On the **Settings** page, you can configure settings for Meeting Management, such as:

- [Network](#) settings for your Meeting Management
- The [certificate](#) that Meeting Management presents in incoming HTTPS connections.
- The [CDR receiver address](#) on which Meeting Management receives information from Call Bridges
- [TMS](#) settings
- [NTP](#) settings
- [Sign in messages](#)
- [Advanced security](#)

This is also where you can back up, restore, upgrade, and [restart](#) Meeting Management.

12.1 Edit network details

You have already set up basic network details, but you may want to add a DNS server or edit the configuration.

To edit network settings:

1. Go to the **Settings** page, **Network** tab.
2. Enter the relevant details.

Note: If you type in IPv6 addresses, do not use square brackets here.

3. To save the details, [Restart](#) Meeting Management.

12.2 Upload certificate

When the Meeting Management certificate expires, you must replace it with a new one.

Note: Meeting Management does not have capabilities to create a certificate signing request. Use a separate tool, for instance OpenSSL toolkit, to create the private key and the certificate signing request.

To replace the certificate:

1. Go to the **Settings** page, **Certificate** tab.
2. **Upload certificate** to replace the expired certificate with a new one.
3. **Upload key**.
4. **Save** the details and **Restart** Meeting Management.

Certificate requirements:

- *The certificate chain should include the certificate of the CA that signed the certificate, plus any certificates higher in the certificate chain, up to and including the root CA certificate.*
- *Your CDR receiver address, as well as any addresses your users will use for the browser interface, should be included in the certificate.*

Note: When the SAN field is used, Meeting Management does not look at the Common Name. The CDR receiver address must be included in the SAN field.

12.3 Edit CDR receiver address

The CDR receiver address is the address that Meeting Management will tell Call Bridges to send CDRs (call detail records) to. It is crucial that the CDR receiver address is set correctly for you to see meeting information in Meeting Management.

Note: We strongly recommend that you use an FQDN, as IP addresses may change. The CDR Receiver address field configures *only* what Meeting Management tells Call Bridges to use, not how your Meeting Management is presented to the wider network. You need to enter an address that is set up in your network to be resolvable and reachable from your Call Bridges.

To enter your CDR receiver address:

1. Go to the **Settings** page, **CDR** tab and enter your **CDR receiver address**.
2. Click **Save** and **Restart** Meeting Management.

12.4 Connect to TMS

To see scheduled meetings before they start, or to use TMS phonebooks to look up contacts when you add participants, you need to connect TMS to your Meeting Management.

Note: Before you can connect to TMS, your Call Bridges must be connected to the TMS booking API. For details, see the "Before you start" section of the *Installation and Configuration Guide*.

To connect Meeting Management to TMS:

1. Go to the **Settings** page, **TMS** tab.
2. Check the **Use TMS with Meeting Management** check box.
3. Enter IP address or FQDN for your TMS server.
4. Choose HTTP or HTTPS.
5. Optional: **Check certificates against certificate revocation lists (CRLs)** if you have chosen to use certificates, and you want Meeting Management to reject the connection if a certificate has been revoked.

Meeting Management will block the connection if a certificate in the chain has been revoked, or if there is a CRL it cannot access.

We recommend that you enable this when possible.

Note: Only certificates with HTTP Certificate Distribution points (CDPs) are supported. If you are using CRL checks, and a certificate has no CDP, or if the CDP is not reachable via HTTP, then the connection is rejected.

Also, your network must be configured so Meeting Management can connect to external address via HTTP.

6. If you are using HTTPS, upload certificate for your TMS.

Certificate requirements are:

- *The certificate should be a chain that includes the certificate of the CA that signed TMS certificate, plus any certificates higher in the certificate chain, up to and including the root CA certificate.*
- *The server address you entered for your TMS server must be included in the TMS server certificate.*

Note: When the SAN field is used, Meeting Management does not look at the Common Name. The TMS FQDN must be included in the SAN field.

7. Enter **Username** and **Password** for your TMS.
8. **Save** and **Restart** Meeting Management.

Note: You will not receive any information from TMS before you associate clusters with TMS.

12.4.1 Associate cluster with TMS

To tell Meeting Management which Call Bridge is connected to TMS and to enter its TMS System ID:

1. On the **Servers** page, click **Associate cluster with TMS**.
2. Select the Call Bridge that is the primary Call Bridge in TMS.
3. Enter the **TMS System ID**.
4. Click **Done** to start seeing scheduled meetings for the Call Bridge.

Meeting Management will then verify the information and show the status **Associated with TMS** for the cluster, and the Call Bridge that is connected to TMS will get the label **TMS**.

5. Repeat until you have verified all clusters you want to see upcoming meetings for.

12.4.2 Get access to TMS phonebooks

Meeting Management can access TMS phonebooks so video operators can use them to look up contacts when they add participants to a meeting. The search will work the same way as it does when you search for contacts in TMS.

Note: TMS may support contacts that cannot be reached by your Meeting Servers. Make sure that you either update your outbound dial plans for the Meeting Servers or filter out phonebook entries the Meeting Servers cannot reach following the existing dial plan rules.

If a video operator tries to add a participant who cannot be reached from your Meeting Servers then Meeting Management will try to connect and fail. There will be no warnings or error messages. The video operator will see a spinner for a short while, and after that the participant will appear in the participant list as a disconnected participant.

Note: In TMS you can configure the number of search results to be displayed. This does not affect Meeting Management. Meeting Management always displays up to 50 search results.

To let your video operators use TMS phonebooks, you must go through three steps:

- Add Meeting Management as a phonebook client in TMS.
We recommend that you edit your phonebooks first so it only includes contacts who can be reached
- Assign phonebooks to your Meeting Management in TMS.
- Enable use of TMS phonebooks in Meeting Management.

Note: You need to [connect Meeting Management to TMS](#) before you can do this.

To add your Meeting Management as phonebook client in TMS:

1. In Meeting Management, go to the **Settings** page, **TMS** tab.
2. Copy the MAC address.
3. Sign in to TMS and go to **Phone Books**, then **Phone Book for Cisco Meeting Management**.
*If you click the **Phonebook for Cisco Meeting Management** link in Meeting Management you will be taken directly to the correct view after you sign in to TMS.*
4. Click **New**.
5. In the Server Name field, enter a name for your Meeting Management.
You can choose any name you want as long as it makes sense for other Meeting Management and TMS administrators.
6. In the MAC Address field, enter the address you copied from Meeting Management.

To assign phonebooks to your Meeting Management:

1. In TMS, go to **Phone Books**, then **Phone Book for Cisco Meeting Management**.
2. Click on the name you gave your Meeting Management in TMS.
3. Choose the phonebooks you want to use for your Meeting Management, then **Save**.

To start using the phonebooks:

1. In Meeting Management, go to the **Settings** page, **TMS** tab.
2. Check the **Use TMS phonebook** check box.
3. In the area above, enter the password for the account you used when you first connected Meeting Management to TMS, then **Save** and **Restart** Meeting Management.

12.5 See NTP status or add NTP servers

It is important that your Meeting Management is always synchronized with your Meeting Server Call Bridges, so we recommend that your Meeting Management uses the same NTP servers as your Meeting Server deployments. You can connect up to 5 NTP servers to Meeting Management, and you can monitor their status on the **Settings** page, **NTP** tab.

Note: The time displayed is for your Meeting Management server and may differ from the time settings on your computer. The offsets shown are between each connected NTP server and your Meeting Management server.

To add an NTP server:

1. Go to the **Settings** page, **NTP** tab.
2. **Add NTP server.**

Note: If you type in IPv6 addresses, do not use square brackets here.

3. To save the changes, [Restart](#) your Meeting Management.

12.6 Licensing

On the Settings page, Licensing tab, you can choose the licensing mode. If you have chosen Smart Licensing, you can also configure some of the Smart Licensing settings here.

You must choose a licensing mode. Choose between:

- **Smart Licensing** (recommended)

When you choose Smart Licensing, then Meeting Management gets information about purchased licenses from the Cisco Smart Software Manager.

Note: Smart Licensing for Meeting Management has the following limitations:

- Reservation of licenses is not supported by Meeting Management.
 - There is no CLI (command line interface) for the Meeting Management Smart Licensing integration. This is by design as Meeting Management provides a graphical user interface.
-

- **Traditional licensing**

When you choose traditional licensing, then Meeting Management gets information about purchased licenses from license files that are installed on connected Call Bridges.

Note: This option is only available if you already have some traditional licenses installed on connected Call Bridges. Traditional licensing is being phased out and will not be offered to new customers.

CAUTION: If any of the Call Bridges has no activation key (called callBridge or callBridgeNoEncryption in the API), then the whole cluster will be at highest enforcement level until your Meeting Server administrator installs the correct activation key on all Call Bridges.

- **No licensing**

This option is only for resilient deployments. Choose this option if you have a resilient deployment, and you have enabled either Smart Licensing or traditional licensing on the other instance of Meeting Management.

Note: After you change licensing mode or add a new cluster, it may take up to 5 minutes before the changes affect the license status for connected Meeting Servers.

12.6.1 How to enable traditional licensing

If you have the licenses you need installed on the connected Call Bridges, then you do not need to do anything after you have chosen the traditional licensing mode.

Note: After you change the licensing mode or add a new cluster, it may take a while before Meeting Management has fetched all the usage information to update the license status. This can take from a few minutes to over 15 minutes, depending on the speed of your connection and the volume of data.

Note: If you want to test Meeting Management and do not have licenses for all features, you can start a trial on the **Licenses** page.

12.6.2 How to enable Smart Licensing

To enable Smart Licensing:

1. Sign in to the Cisco SSM and generate a registration token.
2. Copy the token to your clipboard.
3. Open the instance of Meeting Management that you want to use for license reporting.
4. Go to the **Settings** page, **Licensing** tab.
5. Click **Change**.
6. Choose **Smart Licensing** and **Save**.
7. Click the **Register** button.
8. Paste the registration token.
9. Optional: Register this product instance if it is already registered

Usually Cisco SSM will not let you register an instance of Meeting Management that is already registered. If you check this check box, then Cisco SSM will let you register the same instance again. This is useful if your Meeting Management has lost the registration details, for instance if you have tried to deregister and Meeting Management could not reach Cisco Smart Software Manager while deregistering.

10. Click **Register**.
11. When you have registered, check how many licenses you have in your Virtual Account.
12. In Meeting Management, go to the **Licenses** page.
13. Enter information about the licenses you have in your Virtual Account.

Note: If you want to test Meeting Management and don't yet have licenses, then you can click **Start trial** instead.

Note: If you do not have any licenses of a specific type, enter 0 rather than leaving the field blank.

Note: After you update the licensing mode or add a new cluster, it may take while before Meeting Management has fetched all the usage information to update the license status. This can take from a few minutes to over 15 minutes, depending on the speed of your connection and the volume of data.

Note: Every time you change the number of allocated licenses, it may take up to 5 minutes before the changes affect the license status for connected Meeting Servers.

12.6.3 Smart Licensing actions after Smart Licensing has been enabled

You can do the following:

- **Renew Authorization Now:** The system automatically renews your authorization daily, at midnight UTC. However, if you want to renew manually, you can do that here. This is useful if you have purchased new licenses or allocated more licenses to the Virtual Account for this Meeting Management, and you want to see the changes in Meeting Management immediately.
- **Renew Registration Now:** The system automatically renews your registration every 6 months. You may want to renew the registration manually if you have moved licenses to or from the Virtual Account for this Meeting Management, or if you have moved this instance of Meeting Management to a different Virtual Account.
- **Reregister:** You can reregister manually if you want to use different Virtual Account with this instance of Meeting Management.

- **Deregister:** You can deregister this instance of Meeting Management if you want to use the Virtual Account for another deployment, or if you have a resilient Meeting Management deployment and want to use the other instance for reporting.

Note: If you change the licensing mode, then Meeting Management will automatically disable Smart Licensing and deregister from the Cisco Smart Software Manager.

Note: If you have lost connection to an instance of Meeting Management then you can also deregister from the Cisco SSM.

12.7 Cisco Meeting Server Cloud Connector

Note: The Cloud Connector is a beta feature in Meeting Management 3.1.0, and it is not generally available in Control Hub and the Webex Cloud. If you want to test this feature, contact your Cisco Account team or send an email to personalmultiparty@cisco.com.

Note: Cisco does not guarantee that a beta feature will become a fully supported feature in the future. Beta features are subject to change based on feedback, and functionality may change or be removed in the future.

On the Settings page, Cisco Meeting Server Cloud Connector tab, you can see status for the Cisco Meeting Server Cloud Connector service, or you can disable it.

Note: If you disable the service from Meeting Management, you only stop sending information from Meeting Management to the Webex Cloud. To fully deregister Meeting Management and disable the service, go to WebexControl Hub.

Cisco Meeting Server Cloud Connector is a hybrid service that lets you connect Meeting Management deployments to the Webex Control Hub and the Webex Cloud.

The service lets you:

- See information about Meeting Management instances in the Control Hub interface.
- Set up email and Webex Teams alerts, so you can get notified about Meeting Management errors and warnings.

The service also sends metrics to the Webex Cloud.

12.7.1 Cisco Meeting Server Cloud Connector status

You can see the following status information on the Cisco Meeting Server Cloud Connector tab:

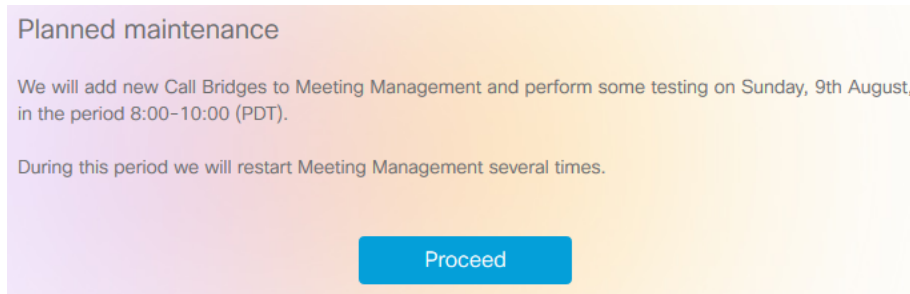
- Registration: This tells you if this instance of Meeting Management is registered to the Webex Cloud.
- Addresses of Webex Cloud services: This tells you which addresses Meeting Management needs to reach for Cisco Meeting Server Cloud Connector to work.

For detailed instructions and information see the [Cloud Connector online help](#).

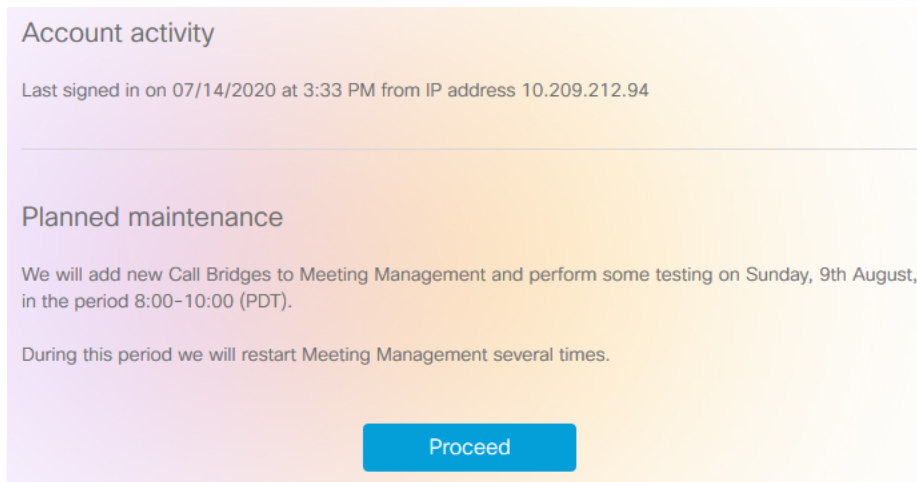
12.8 Display messages when users sign in

You can insert a page with a message for your users before or after the sign-in page. For example, you can use the pre-sign-in message for a legal warning and the post-sign-in message to notify them of planned maintenance.

The page will display the message you type in, and a **Proceed** button like the example below.



If you check the **Display account activity after sign-in** check box, the account activity will appear after sign-in. The screenshot below shows an example where both the account activity and a post-sign-in message are displayed.



Note: The changes will take place immediately.

12.9 Configure advanced security settings

On the settings page, **Advanced security** tab, you can configure advanced security settings. The default settings keep your Meeting Management functional and secure, so they are appropriate for most environments. We recommend that you only change the advanced security settings if your organization's local security policies require specific settings.

Note: All security settings require a restart before they are applied. If you set up advanced security settings as part of the first time setup, you can finish configuring all settings on the **Settings** and **Logs** pages before you restart.

12.9.1 Rate limit sign-in attempts

You can limit how many times users can attempt to sign in within a given interval. If you enable rate limiting, the settings configured here take effect for both LDAP users and local users.

The number of allowed sign-in attempts is measured in tokens. Each user starts with a maximum number of tokens that you have defined. They lose one token for each failed sign-in attempt, and they gain one at the end of each interval until they again have the maximum number of tokens available.

There are two settings:

- **Rate at which one token is added to a bucket (in seconds)**

This is the length of each interval, measured in seconds. The default is 300 seconds.

- **The maximum numbers of tokens held in a bucket**

This is the maximum number of sign-in attempts a user can be allowed within a given interval. The default is 3 tokens.

That means if users spend all tokens during the first interval, then they only get one attempt to sign in during the second interval. If users try to sign in after they have used up all their tokens, then they are given the message **Too many sign in attempts. Please try again later**. This happens even if the credentials are correct.

12.9.2 Idle session timeout

You can configure Meeting Management to sign out users who are inactive for a certain period of time. Meeting Management defines users as active when they move the mouse, click buttons, or enter text in input fields.

When you enable idle session timeout, the default timeout is 3600 seconds (one hour). The minimum is 60 seconds, and the maximum is 86400 seconds (24 hours).

Note: Meeting Management checks the status every 30 seconds which means that the timeout can be the set time limit plus up to 30 seconds.

Note: Even when you enable idle session timeout, users will still be signed out 24 hours after they signed in, whether they are active or not.

12.9.3 TLS settings

You can choose which TLS cipher suites to enable for connections to and from Meeting Management.

The settings configured here take effect for all TLS connections, so it affects how Meeting Management connects to the following:

- Browsers
- LDAP server
- Call Bridges
- System log servers
- Audit log servers
- TMS
- Cisco Smart Software Manager

All connected browsers and servers support a range of cipher suites. If a connected unit supports more than one of the cipher suites that are enabled in Meeting Management, then Meeting Management will use the one that is closest to the top of the list.

By default, the following cipher suite is disabled:

- AES256-SHA

CAUTION: If you disable all cipher suites that are supported by a specific browser or server, then it can no longer be connected to Meeting Management.

Be particularly careful checking that you have cipher suites enabled that are supported by your preferred browser and your LDAP server. If your browser cannot connect to Meeting Management, or Meeting Management cannot connect to your LDAP server, then you may be locked out of Meeting Management.

12.10 Backup and restore

We recommend that you always create a new backup before you make any changes to Meeting Management. The backup contains:

- **Configuration:**

- All details from the **Settings** page other than the licensing settings
- LDAP server details
- Details for all LDAP groups
- Security policy settings for local users

This includes settings for the passphrase generator, but not the dictionary

- **Database:**

- Details for local users, including hashes of recent passwords
- Details for all Call Bridges, including any TMS System IDs
- Passphrase dictionary

12.10.1 Create a backup

We recommend that you create a backup before you start using your Meeting Management. Then you can easily re-use settings if you need to re-deploy.

1. If a [restart](#) is required, do this now so all settings can take effect.
2. On the **Settings** page, go to the **Backup and restore** tab.
3. Click **Download backup file**.
4. Enter a password, then **Download**.
5. Save the backup file and the password in a secure location.

Note: The backup is encrypted and cannot be used without the password.

12.10.2 Restore a backup

Before you restore a backup:

- Make sure that you have your backup file and the password ready.
The password was chosen when you or another administrator created the backup.
- Decide if you want to restore all settings, or if you just want to restore either database or configuration details (see step 4 below).
- Make sure that your LDAP server is online while you restore the backup.
- If you have TMS connected, make sure TMS is online while you restore the backup.

Note: If your LDAP server or TMS is offline while you restore, then the restore will fail.

Note: If you restore LDAP details, we recommend that you sign in as a local administrator to restore the backup.

To restore a previously saved backup:

1. On the **Settings** page, go to the **Backup and restore** tab.
 2. Click **Upload backup file**.
 3. **Select backup file**.
 4. Choose one or both options:
 - **Restore configuration:**
 - All details from the **Settings** page other than the licensing settings
 - LDAP server details
 - Details for all LDAP groups
 - Security policy settings for local users

This includes settings for the passphrase generator, but not the dictionary
 - **Restore database:**
 - Details for local users, including hashes of recent passwords
 - Details for all Call Bridges, including any TMS System IDs
 - Passphrase dictionary
- You will not be able to restore a backup if you do not check either of the two options.
5. Enter password, then **Restore**.

Note: If you are signed as a local user when you restore Meeting Management, then Meeting Management will add your account to the list from the backup, or it will update the backed-up profile with the current settings. All other settings will be replaced with the settings from the backup.

12.11 Restart Meeting Management

Most settings in Meeting Management require a restart before they are applied.

To restart Meeting Management:

1. Go to the **Settings** page, **Restart** tab.
2. Click **Restart**.

Note: When you restart Meeting Management, all users are signed out without warning, and all information about meetings is deleted from Meeting Management. Start times for meetings that are still active after restart, as well as join times for participants who are still connected, will be restored via API requests. The times displayed in the meeting details will be correct, but entries in the event log will be given new timestamps.

Appendix A Security hardening

Security Hardening Information on how to deploy and operate VMware products in a secure manner is available from the [VMware Security Hardening Guides](#).

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Cisco is committed to designing and delivering accessible products and technologies.

The Voluntary Product Accessibility Template (VPAT) for Cisco Master Project is available here:

http://www.cisco.com/web/about/responsibility/accessibility/legal_regulatory/vpats.html#telepresence

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www.cisco.com/web/about/responsibility/accessibility/index.html

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