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Introduction

About the Cisco TelePresence Conductor

Cisco TelePresence Conductor manages video conference bridge resources, providing resiliency and increased capacity across your video conferencing network. A video providing a high level overview of the TelePresence Conductor can be found at http://www.youtube.com/watch?v=4-C7F2fTEYE. This video focuses on the capabilities of the product up to version XC1.2. Within this video you can see that the TelePresence Conductor integrates tightly with the Cisco TelePresence Video Communication Server (Cisco VCS) and the Cisco TelePresence MCU products. TelePresence Conductor versions XC2.0 and later extend the supported conference bridges to include the Cisco TelePresence Server and the supported call control devices to include the Cisco Unified Communications Manager.

The TelePresence Conductor enables endpoints with sufficient privileges to create and enter a conference by dialing a single number or URI (known as rendezvous conferences). It also supports Multiway conferences, which are initiated when two endpoints already in a call together add another endpoint.

The TelePresence Conductor performs conference bridge resource management and call routing to an appropriate conference bridge. If the conference is hosted on a TelePresence MCU and the size of the conference grows beyond the capacity of a single conference bridge, the conference is cascaded to additional TelePresence MCU conference bridges. (Cascading with TelePresence Server is not supported in the XC2.1 release.)

The TelePresence Conductor is capable of preferentially selecting conference bridges for conferences based on their properties. For example, conference bridges could be selected based on geographic location or on video quality (such as HD or SD services).

This version of the TelePresence Conductor supports the Cisco VCS in the following two types of deployments:

- Using the Cisco VCS’s external policy service interface
  This method may be discontinued in future versions of the TelePresence Conductor software.
- Using the TelePresence Conductor’s back-to-back user agent (B2BUA)
  This method requires a SIP trunk between the Cisco VCS and the TelePresence Conductor. It is the preferred method to use.

This document describes the deployment method using the TelePresence Conductor’s B2BUA. For more information on the deployment using the Cisco VCS’s external policy server interface, see Cisco TelePresence Conductor with Cisco VCS (Policy Service) Deployment Guide.

The TelePresence Conductor supports the Cisco VCS in standalone and clustered modes.

You can configure up to 20 TelePresence Conductors or TelePresence Conductor clusters per Cisco VCS or Cisco VCS cluster using a suitable non-overlapping dial plan.

About this document

This document describes how to configure a Cisco VCS (or Cisco VCS cluster), a TelePresence Conductor and the conference bridges that are used by the system. Following the steps in this deployment guide will allow you to configure the above devices to provide the following functionality:

- An endpoint user can call the rendezvous conference alias meet.<meeting name>.HD@vcs.domain. If they are the first person to call this alias, TelePresence Conductor creates a new conference and they are
routed to it. The conference is created preferentially on a conference bridge with high definition ports, if there are not any ports available on the HD conference bridge then the conference will be created on the SD conference bridge. Alternatively, if the conference already exists then the alias is routed to it.

- An endpoint user can call the rendezvous conference alias meet.<meeting name>@<domain>. If they are the first person to call this alias, a new conference is created by TelePresence Conductor and they are routed to it. The conference is created preferentially on a conference bridge with standard definition ports; if there are not any ports available on this conference bridge then the call is rejected. If the conference already exists then they are routed to it.
- An endpoint user can dial the conference meet.boss@<domain> and arrive at a conference and have the endpoint boss@<domain> automatically dialed into the conference.
- An endpoint user can call the alias teach.<lecture name>@<domain> and create or join a lecture-type conference as a chairperson on a conference bridge with SD ports or, if there are no SD ports available, a conference on the HD conference bridge.
- An endpoint user can call the alias learn.<lecture name>@<domain> and create or join a lecture-type conference as a chairperson on a conference bridge with SD ports or, if there are no SD ports available, a conference on the HD conference bridge.
- If the size of a meet.<meeting name>.HD@<domain> conference or a teach.<lecture name>@<domain> conference grows to a point where the resources required exceed those available on the conference bridge on which it is being hosted, and ports are available on a second conference bridge, then the TelePresence Conductor will direct new conference participants to the second conference bridge and set up a cascade between the conference bridges, provided there are available resources there.

This document also describes how to check that the system is working as expected.

Detailed descriptions of system configuration parameters for the Cisco VCS, TelePresence Conductor and conference bridges can be found in the Administrator Guides and online help for each product. Both the Cisco VCS and the TelePresence Conductor web interfaces offer field help (accessed by clicking the icon next to each input field) and a context-sensitive help system (accessed by clicking the icon in the top right corner of each page).

### Further reading

This document focuses on the use of a single TelePresence Conductor. For more details on how to deploy a cluster of TelePresence Conductors see [Cisco TelePresence Conductor Clustering with Cisco VCS (B2BUA) Deployment Guide](D15034).

For details on how to deploy TelePresence Conductor with Unified CM see [Cisco TelePresence Conductor with Cisco Unified Communications Manager Deployment Guide](D14998).

### Call flow with the TelePresence Conductor

To better understand the configuration steps taken in this document it is useful to understand how the call flows through the different parts of the video network:

1. **Endpoint dials a conference alias.**
2. **This alias matches a search rule on the VCS, and the VCS forwards the call to the Conductor.**
3. **The Conductor identifies the conference details and forwards the call to a conference bridge.**
When these parts of the call flow are complete, the call is set up and media flows between the endpoint and the conference bridge.

**TelePresence Conductor conference bridge selection process**

- **Cisco TelePresence Conductor** with VCS (B2BUA) Deployment Guide (XC2.1)
In a simplified format the set of steps for a conference to be created when the TelePresence Conductor receives an individual valid conference request is:

![Diagram showing the steps for conference creation]

The dotted line indicates an optional step that occurs concurrently with the normal conference request processing.
Example network deployment

The example network shown below is used as the basis for the deployment configuration described in this document.

![Diagram of example network deployment](image)

Note that elements on the internal network have an internal network domain name. This internal network domain name is not resolvable by a public DNS.

For example, the Cisco VCS is configured with an internally resolvable name of vcs.internal-domain.net (which resolves to an IP address of 10.1.2.3 by the internal DNS servers).

**Cisco TelePresence network elements**

**Cisco VCS**

The Cisco VCS acts as a SIP registrar, SIP proxy, and H.323 gatekeeper for devices that are located on the internal network.
Conference bridges

Conference bridges are network devices that enable multiple video calls to come together in a multipoint video conference. TelePresence Conductor version XC2.1 supports the conference bridge types TelePresence MCU and TelePresence Server.

Endpoints

These are devices that receive and make video calls. They can be software clients on PCs and Macs such as Jabber Video (Movi), desktop endpoints such as the EX90 and 9971, or room systems such as the MX300.
Deploying TelePresence Conductor with Cisco VCS

Prerequisites

Before starting the system configuration, ensure you have met the following criteria:

- The Cisco VCS (or Cisco VCS cluster) must be running version X7.0 or later and must already be configured to act as a SIP registrar and proxy. Ensure that the system has been tested by registering at least three endpoints to it and that they are all capable of calling each other. For more information, see Cisco VCS Administrator Guide.
- The TelePresence Conductor must be powered on, running version XC2.1 and accessible over the network. For assistance in reaching this stage, see Cisco TelePresence Conductor Getting Started Guide.
- The TelePresence Conductor must have enough unique IP addresses configured to fulfill the requirements for creating a Unified CM location supporting rendezvous type calls for use by Cisco VCS. The TelePresence Conductor must have an IP address for management plus an IP address for all VCS rendezvous conferences.
- One or more conference bridges are powered on and accessible over HTTP/HTTPS and SIP TLS. Basic configuration for the conference bridge should be completed as described in the relevant Getting Started Guide. These bridges must be dedicated for use by TelePresence Conductor – no other devices must try to route calls to them except via the TelePresence Conductor.
- The following Cisco TelePresence MCUs are supported by the TelePresence Conductor:
  - MCU 4200 series version 4.2 or later
  - MCU 4500 series version 4.2 or later
  - MCU 5300 series version 4.3(2.17) or later
  - MCU MSE 8420 version 4.2 or later
  - MCU MSE 8510 version 4.2 or later
- The following Cisco TelePresence Servers are supported by the TelePresence Conductor:
  - TelePresence Server 7010 version 3.0(2.46) or later
  - TelePresence Server MSE 8710 version 3.0(2.46) or later
- This guide assumes the conference bridges are connected to the network on their port A.
- A web browser is available with access to the web interfaces of the Cisco VCS, TelePresence Conductor and conference bridges that are being configured.

Designing a dial plan

A dial plan defines all the aliases and call routes within your network.

Before you add the Cisco TelePresence Conductor to your network, you will need to consider as part of your dial plan:

- The types of conferences required (see Cisco TelePresence Conductor Administrator Guide for more information).
- The form of the conference aliases that users will dial in order to create or join conferences.
If you are integrating the TelePresence Conductor into an existing deployment it is important that the elements of your dial plan that are used by the TelePresence Conductor are complementary to, and do not conflict with, those elements that are already in use in your deployment.

This deployment guide uses the following dial plan elements and configures the TelePresence Conductor and Cisco VCS accordingly:

<table>
<thead>
<tr>
<th>Element</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference aliases for lecture chairpersons on TelePresence MCUs</td>
<td>teach.&lt;name of lecture&gt;@vcs.domain</td>
</tr>
<tr>
<td>Conference aliases for lecture guests on TelePresence MCUs</td>
<td>learn.&lt;name of lecture&gt;@vcs.domain</td>
</tr>
<tr>
<td>Conference aliases for high definition meeting participants on</td>
<td>meet.&lt;meeting name&gt;<a href="mailto:.HD@vcs.domain">.HD@vcs.domain</a></td>
</tr>
<tr>
<td>TelePresence MCUs</td>
<td></td>
</tr>
<tr>
<td>Conference aliases for standard definition meeting participants on</td>
<td>meet.&lt;meeting name&gt;<a href="mailto:.SD@vcs.domain">.SD@vcs.domain</a></td>
</tr>
<tr>
<td>TelePresence MCUs</td>
<td></td>
</tr>
<tr>
<td>Conference aliases for lecture chairpersons on TelePresence Servers</td>
<td>teachts.&lt;name of lecture&gt;@vcs.domain</td>
</tr>
<tr>
<td>Conference aliases for lecture guests on TelePresence Servers</td>
<td>learnts.&lt;name of lecture&gt;@vcs.domain</td>
</tr>
<tr>
<td>Conference aliases for high definition meeting participants on</td>
<td>meets.&lt;meeting name&gt;<a href="mailto:.HD@vcs.domain">.HD@vcs.domain</a></td>
</tr>
<tr>
<td>TelePresence Servers</td>
<td></td>
</tr>
<tr>
<td>Conference aliases for standard definition meeting participants on</td>
<td>meets.&lt;meeting name&gt;<a href="mailto:.SD@vcs.domain">.SD@vcs.domain</a></td>
</tr>
<tr>
<td>TelePresence Servers</td>
<td></td>
</tr>
</tbody>
</table>

### Configuring the TelePresence MCUs

These tasks can be skipped, if only TelePresence Servers are used as conference bridges in your deployment.

#### Task 1: Creating a user

For the TelePresence Conductor to communicate with the TelePresence MCU it must use credentials for a user that has administrator rights. We recommend that you create a dedicated administrator level user for this task.

1. Go to the web interface of the TelePresence MCU you want to configure and log in as an administrator.
2. Go to Users and click Add new user.
3. Enter the following in the relevant fields:

<table>
<thead>
<tr>
<th>User ID</th>
<th>Enter a username for the TelePresence Conductor to use.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for this user.</td>
</tr>
<tr>
<td>Password</td>
<td>Enter a password for the TelePresence Conductor to use.</td>
</tr>
<tr>
<td>Force user to change password on next login</td>
<td>Uncheck.</td>
</tr>
<tr>
<td>Privilege level</td>
<td>Select administrator.</td>
</tr>
</tbody>
</table>
4. Click Add user.
5. Repeat the steps for any other TelePresence MCUs.

**Task 2: Installing an encryption key**

The TelePresence MCU has the ability to use a secure connection for communications. These security features are enabled with the **Encryption** option key. You must install this option key in order for this deployment to work.

To verify that the key is installed or to install the key:

1. Go to Settings > Upgrade.
2. Go to the Feature Management section and verify that the Encryption key is installed. If the key is not installed, enter the Activation code and click Update features.

   To enable the use of encryption on the TelePresence MCU:
   1. Go to Settings > Encryption.
   2. Set Encryption status to Enabled.
   3. Set SRTP encryption to Secure transport (TLS) only.
   4. Click Apply changes.
   5. Go to Network > Services.
   6. Ensure that Secure web (port 443) is checked.
   7. Ensure that Encrypted SIP (TLS) is checked. SIP (TLS) must also be configured on the Cisco VCS in Configuring the Cisco VCS [p.19].
   8. Ensure that SIP (TCP) is unchecked.
   9. Ensure that SIP (UDP) is unchecked.
10. Ensure that **Incoming H.323** is unchecked.
11. Click **Apply changes**.

![TCP Service Table]

12. Repeat the steps for any other TelePresence MCUs

**Task 3: Configuring SIP**

1. Go to **Settings > SIP**.
2. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIP registrar usage</td>
<td>Select <em>Disabled</em>.</td>
</tr>
<tr>
<td>SIP proxy address</td>
<td>Leave blank.</td>
</tr>
<tr>
<td>Outgoing transport</td>
<td>Select TLS.</td>
</tr>
<tr>
<td>Use local certificate for outgoing connections and registrations</td>
<td>Check this box.</td>
</tr>
</tbody>
</table>
3. Click **Apply changes**.
4. Repeat the steps for any other TelePresence MCUs.

**Task 4: Disabling H.323 registration**

1. Go to **Settings > H.323**.
2. Set **H.323 gatekeeper usage** to **Disabled**.
3. Leave all other fields as their default values.

4. Click **Apply changes**.
5. Repeat the steps for any other TelePresence MCUs.

**Task 5: Changing miscellaneous settings**

On all conference bridges:
1. Go to Settings > Conferences
2. Under Conference Settings ensure Media port reservation is set to Disabled.
3. Click Apply changes.
4. Go to Gatekeeper > Built in Gatekeeper.
5. Under Configuration ensure Status is set to Disabled.
   Note: The MCU 5300 series does not have a built-in Gatekeeper.
6. Click Apply changes.
7. Repeat the steps for any other TelePresence MCUs.

Configuring the TelePresence Server

These tasks can be skipped, if only TelePresence MCUs are used as conference bridges in your deployment.

Task 6: Creating a user

For the TelePresence Conductor to communicate with the TelePresence Server it must use credentials for a user that has administrator rights. We recommend that you create a dedicated administrator level user for this task.

1. Go to the web interface of the TelePresence Server you want to configure and log in as an administrator.
2. Go to User > Add New User.
3. Enter the following in the relevant fields:

<table>
<thead>
<tr>
<th>User ID</th>
<th>Enter a username for the TelePresence Conductor to use.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for this user.</td>
</tr>
<tr>
<td>Password</td>
<td>Enter a password for the TelePresence Conductor to use.</td>
</tr>
<tr>
<td>Access rights</td>
<td>Select Administrator.</td>
</tr>
</tbody>
</table>
4. Click **Add user**.
5. Repeat the steps for any other TelePresence Servers.

**Task 7: Installing an encryption key**

The TelePresence Server has the ability to use a secure connection for communications. These security features are enabled with the **Encryption** option key. You must install the option key in order for this deployment to work.

To verify that the key is installed or to install the key, perform the following tasks:

1. Go to **Configuration > Upgrade**.
2. Go to the **Feature management** section and verify that the **Encryption** key is installed. If the key is not installed, enter the **Activation code** and click **Update features**.

To verify that TLS is enabled on the TelePresence Server:

1. Go to **Network > Services**.
2. Ensure that **Encrypted SIP (TLS)** is checked.
3. Ensure that **Incoming H.323, SIP (TCP)** and **SIP (UDP)** are not checked.
4. Ensure that **HTTPS** is enabled on port 443.

<table>
<thead>
<tr>
<th>Services</th>
<th>Port A</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCP service</td>
<td>IPv4</td>
</tr>
<tr>
<td>HTTP</td>
<td>80</td>
</tr>
<tr>
<td>HTTPS</td>
<td>443</td>
</tr>
<tr>
<td>Incoming H.323</td>
<td>1720</td>
</tr>
<tr>
<td>SIP (TCP)</td>
<td>5060</td>
</tr>
<tr>
<td>Encrypted SIP (TLS)</td>
<td>5001</td>
</tr>
<tr>
<td>FTP</td>
<td>21</td>
</tr>
</tbody>
</table>

5. Click **Apply changes**.

**Task 8: Configuring SIP**

For the TelePresence Server to support auto-dialed participants, the TelePresence Server needs to know where to direct signaling requests.

1. Go to **Configuration > SIP settings**.
2. Enter the following values into the relevant fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outbound call configuration</td>
<td>Select <em>Call direct</em> from the drop-down list.</td>
</tr>
<tr>
<td>Outbound address</td>
<td>Leave blank.</td>
</tr>
<tr>
<td>Outbound domain</td>
<td>Leave blank.</td>
</tr>
<tr>
<td>Username</td>
<td>Leave blank.</td>
</tr>
<tr>
<td>Password</td>
<td>Leave blank.</td>
</tr>
<tr>
<td>Outbound transport</td>
<td>Select <em>TLS</em>.</td>
</tr>
<tr>
<td>Negotiate SRTP using SDES</td>
<td>Select <em>For secure transports (TLS) only</em>.</td>
</tr>
<tr>
<td>Use local certificate for outgoing connections and registrations</td>
<td>Check the box.</td>
</tr>
</tbody>
</table>
3. Click **Apply changes**.

4. Repeat the steps for any other TelePresence Servers.

**Task 9: Disabling H.323 registration**

Perform the following steps to disable H323 registration to a gatekeeper:

1. Go to **Configuration > H323 Settings**.
2. Uncheck the box for **Use gatekeeper**.
3. Leave all other fields as their default values.
4. Click **Apply changes**.
5. Repeat the steps for any other TelePresence Servers.

**Task 10: Configuring the operational mode**

1. Go to **Configuration > Operation mode**.
2. Select **Remotely managed** from the drop down list. This enables the TelePresence Conductor to manage the TelePresence Server.
3. Click **Apply changes**.
4. For the changes to take effect, the TelePresence Server must be restarted. Go to **Configuration > Shutdown**.
5. Click **Shutdown TelePresence Server**.
6. Click **Confirm TelePresence Server shutdown**.
7. Click **Restart TelePresence Server**.
8. After about 3 minutes, the TelePresence Server will be available to the TelePresence Conductor.
9. Repeat the steps for any other TelePresence Servers.
## Configuring the Cisco VCS

### Task 11: Adding the TelePresence Conductor as a neighbor zone

1. Go to VCS configuration > Zones > Zones.
2. Click Create new zone.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter 'Conductor' for example.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Neighbor.</td>
</tr>
<tr>
<td>H.323 mode</td>
<td>Select Off.</td>
</tr>
<tr>
<td>SIP transport</td>
<td>Select TLS. Set the port to 5061.</td>
</tr>
<tr>
<td>Peer 1 address</td>
<td>Enter the TelePresence Conductor's rendezvous IP address for Cisco VCS (not the TelePresence Conductor's primary LAN IP address used to manage the TelePresence Conductor). This will be added on the TelePresence Conductor in Task 16: Adding an IP address for Cisco VCS rendezvous conferences on TelePresence Conductor [p.25].</td>
</tr>
<tr>
<td>Zone profile</td>
<td>Select Custom.</td>
</tr>
<tr>
<td>Automatically respond to SIP searches</td>
<td>Select On.</td>
</tr>
</tbody>
</table>
Create zone

Configuration
- Name: Conductor
- Type: Neighbor
- Hop count: 15

H.323
- Mode: Off
- Port: 1719

SIP
- Mode: On
- Port: 5061
- Transport: TLS
- TLS verify mode: Off
- Account provides registrations: Allow
- Media encryption mode: Auto

Authentication
- Authentication policy: Do not check credentials
- SIP authentication trust mode: Off
4. Click **Create zone**.

**Task 12: Configuring a search rule with the TelePresence Conductor neighbor zone as the target**

Search rules define where the Cisco VCS routes calls. In this case we want calls matching the format of our conference aliases to be sent to the TelePresence Conductor.

To configure the Search rule:

1. Go to **VCS configuration > Dial plans > Search rules**.
2. Click **New**.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Rule name</th>
<th>Enter ‘To Conductor’ for example.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority</td>
<td>Enter ‘10’ for example.</td>
</tr>
</tbody>
</table>
Mode: Select Alias pattern match.

Pattern type: Select Regex.

Pattern string: Enter (meet|meets|teach|learn|teachts|learnts)\..*@<SIP domain>

Note: Replace <SIP domain> with the appropriate SIP domain for your network.

Pattern behavior: Select Leave.

On successful match: Select Stop.

Target: Select Conductor.

4. Click Create search rule.

Configuring the TelePresence Conductor

This section of the guide assumes that the TelePresence Conductor is reachable over the network. For assistance in reaching this stage, see Cisco TelePresence Conductor Getting Started Guide.

The TelePresence Conductor will only accept calls when the following criteria are met:

- The TelePresence Conductor has its root and admin passwords changed from their default values. This is a security feature.
The TelePresence Conductor is configured with at least one conference bridge with a 'usable' status. This is to ensure that requests are not sent to members of a TelePresence Conductor cluster that have lost connectivity with the conference bridges.

**Task 13: Changing the administrator password**

1. Log into the TelePresence Conductor as the user 'admin' and with the default password 'TANDBERG'.
2. Go to **Users > Administrator accounts**.
3. Click **View/Edit** for the 'admin' user.
4. Enter a new password.
5. Click **Save**.

**Note:** the TelePresence Conductor will not handle conference requests if it has the administrator password set to its default value.

**Task 14: Changing the root password**

1. Log in to the TelePresence Conductor as root (default password = ‘TANDBERG’). By default you can only do this using SSH or a serial connection.
2. Type **passwd**.
3. Enter the new password, and when prompted, retype the new password.
4. You will receive the message:  
   ```
   passwd: password updated successfully
   ```
5. Type ‘exit’ to log out of the root account.

**Note:** the TelePresence Conductor will not handle conference requests if it has the root password set to its default value.

**Task 15: Changing the system settings**

1. Log into the TelePresence Conductor as a user with administrator rights.
2. Go to **System > DNS**.
3. Enter the following in the relevant fields:

<table>
<thead>
<tr>
<th><strong>Field</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System host name</strong></td>
<td>Enter the hostname of your TelePresence Conductor.</td>
</tr>
<tr>
<td><strong>Domain name</strong></td>
<td>Enter the domain for your TelePresence Conductor.</td>
</tr>
<tr>
<td><strong>Address 1</strong></td>
<td>Enter the IP address of the DNS server.</td>
</tr>
<tr>
<td><strong>Address 2</strong></td>
<td>Enter the IP address of your backup DNS server.</td>
</tr>
</tbody>
</table>
4. Click **Save**.
5. Go to **System > Time** if the default servers are unreachable then it may be necessary to enter alternate NTP servers.
6. Ensure that under the **Status** section the State is **Synchronized**. This can take a couple of minutes.

---

**DNS**

<table>
<thead>
<tr>
<th>DNS settings</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>System host name</td>
<td>conductor</td>
</tr>
<tr>
<td>Domain name</td>
<td>vcs.domain</td>
</tr>
<tr>
<td>DNS requests port range start</td>
<td>1024</td>
</tr>
<tr>
<td>DNS requests port range end</td>
<td>55535</td>
</tr>
</tbody>
</table>

**Default DNS servers**

| Address 1       | 10.1.2.7 |
| Address 2       | 10.1.2.8 |

**Per-domain DNS servers**

| Address 1       | Don't care |
| Address 2       | Don't care |

**Note:** the FQDN of the TelePresence Conductor is `<System host name>.<Domain name>`.
**Task 16: Adding an IP address for Cisco VCS rendezvous conferences on TelePresence Conductor**

1. Go to **System > IP**.
2. In the **Additional addresses for LAN 1** section click **New**.

   ![IP configuration](image)

3. Enter the new IP address to be used.  
   **Note**: the IP address must be on the same subnet as the primary TelePresence Conductor IP interface, and must be reserved for use by this TelePresence Conductor alone. It is used as the **Peer 1 address** in Task 11: Adding the TelePresence Conductor as a neighbor zone [p.19].

4. Click **Add address**.

   ![Additional IP addresses](image)

---

**IP address needs to be on the same subnet as Conductor**
5. In the **Additional addresses for LAN 1** list, verify that the IP address was added correctly.

6. Go to **Maintenance > Restart options**.
7. Click **Restart** so that network interface changes are applied.
8. Wait for the TelePresence Conductor to restart.
9. To verify the new TelePresence Conductor IP address is active on the network, ping the IP address from another device.

**Task 17: Configuring a Unified CM location for Cisco VCS**

A Unified CM location is used to allow the Cisco VCS to forward conference call requests directly to the TelePresence Conductor back-to-back-user-agent (B2BUA). A single Unified CM location can be set up for all traffic between any Cisco VCS (or Cisco VCS cluster) and the TelePresence Conductor.

Because the Cisco VCS only supports rendezvous conferences (not ad hoc), a conference alias is required. Endpoints registered to a Cisco VCS are able to initiate a Multiway conference, which is similar to an ad hoc conference initiated by endpoints registered to a Unified CM, but still uses a conference alias to create a spontaneous rendezvous conference.

1. Go to **Conference configuration > Unified CM locations**.
2. Click **New**.
3. Enter the following into the relevant fields, leaving the other fields as their default values:

   | Location name | Enter a name for the Unified CM location, for example VCS location. |
   | Conference type | Select **Rendezvous**. |
   | Rendezvous IP address | From the drop down list, select the TelePresence Conductor IP address to be used for Cisco VCS calls. This must match the **Destination address** of the neighbor zone on the Cisco VCS. |
### Trunk IP address
This is only required if TelePresence Conductor needs to forward auto-dialed participants or any other out-dialed calls such as those initiated by Cisco TMS to the Cisco VCS.

Enter the IP address of the Cisco VCS.

<table>
<thead>
<tr>
<th>Trunk port</th>
<th>Enter '5061'.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trunk protocol</td>
<td>Select TLS.</td>
</tr>
</tbody>
</table>

### Unified CM locations

<table>
<thead>
<tr>
<th>Location name</th>
<th>Description</th>
<th>Conference type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rendezvous conference settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rendezvous IP address (local)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unified CM trunk settings for outdial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdial local IP address</td>
</tr>
<tr>
<td>Trunk IP address</td>
</tr>
<tr>
<td>Trunk port</td>
</tr>
<tr>
<td>Trunk transport protocol</td>
</tr>
</tbody>
</table>

Click Add location.

#### Task 18: Setting up conference bridge pools

![Diagram of conference bridge pools]

- Conference alias
- Conference template
- Service Preference
- Conference bridge pool
- Conference bridge

- Auto-dialed participant

- Conference alias
- Conference template
- Service Preference
- Conference bridge pool
- Conference bridge

- Auto-dialed participant
To set up a conference bridge pool, you need to create a conference bridge pool and then add one or more conference bridge(s) to it. The following examples show how to set up conference bridge pools for:

- TelePresence MCU hosted HD conferences
- TelePresence MCU hosted SD conferences
- TelePresence Server hosted HD conferences
- TelePresence Server hosted SD conferences

**Creating a TelePresence MCU HD conference bridge pool**

1. Go to Conference configuration > Conference bridges > Conference bridge pools.
2. Click New.
3. In the Pool name field enter a name for the conference bridge pool, for example HD MCU pool.
4. Choose the correct Conference bridge type, in this case TelePresence MCU.
5. Select from the drop-down list the Unified CM location configured for the Cisco VCS.
6. Click Create pool.

**Adding a TelePresence MCU to the HD conference bridge pool**

1. From the Conference bridge pools page click Create conference bridge.
2. Enter the following in the relevant fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for the conference bridge, for example HD MCU.</td>
</tr>
<tr>
<td>State</td>
<td>Select Enabled.</td>
</tr>
<tr>
<td>IP address or FQDN</td>
<td>Enter the IP address of the HD conference bridge.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Select HTTPS.</td>
</tr>
<tr>
<td>Port</td>
<td>Enter '443'.</td>
</tr>
<tr>
<td>Conference bridge username</td>
<td>Enter the conference bridge admin username, for example conductoradmin. (This is created in Task 1: Creating a user [p.11].)</td>
</tr>
<tr>
<td>Conference bridge Password</td>
<td>Enter the conference bridge password for this user.</td>
</tr>
</tbody>
</table>
Dedicated content ports Enter the appropriate value for your TelePresence MCU. To discover if a TelePresence MCU has any dedicated content ports follow the steps given in Appendix 1: Identifying dedicated content ports on a Cisco TelePresence MCU [p.58].

SIP port Enter the SIP port on which the conference bridge listens for SIP TLS traffic, typically this is ‘5061’.

H.323 cascade call routing Select Direct.

3. Click Create conference bridge.
4. Ensure that under the Conference bridges in this pool section, under the Status header the conference bridge is listed as Active.
5. Repeat the steps to add any further TelePresence MCUs to the conference bridge pool.

Creating a TelePresence MCU SD conference bridge pool.

Repeat the steps under Creating a TelePresence MCU HD conference bridge pool [p.28] to create a TelePresence MCU SD conference bridge pool. Enter the same values for the fields, apart from the Pool name, which should be SD MCU pool, for example.

Adding a TelePresence MCU to the SD conference bridge pool

Repeat the steps under Adding a TelePresence MCU to the HD conference bridge pool [p.28] to add a TelePresence MCU to the SD conference bridge pool. Enter the same values for the fields, apart from:

<table>
<thead>
<tr>
<th>Name</th>
<th>Enter a name for the conference bridge, for example SD MCU.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP address or FQDN</td>
<td>Enter the IP address of the SD conference bridge.</td>
</tr>
</tbody>
</table>
Creating a TelePresence Server HD conference bridge pool

1. Go to Conference configuration > Conference bridges > Conference bridge pools.
2. Click New.
3. In the Pool name field enter a name for the conference bridge pool, for example HD TS pool.
4. Choose the correct Conference bridge type, in this case TelePresence Server.
5. Select from the drop-down list the Unified CM location configured for the Cisco VCS.
6. Click Create pool.

Adding a TelePresence Server to the HD conference bridge pool

Before adding a TelePresence Server to the conference bridge pool, ensure that the Operation mode on the TelePresence Server is set to Remotely managed (see Task 10: Configuring the operational mode [p.18]).

1. Click Create conference bridge.
2. Enter the following in the relevant fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for the conference bridge, for example HD TS.</td>
</tr>
<tr>
<td>State</td>
<td>Select Enabled.</td>
</tr>
<tr>
<td>IP address or FQDN</td>
<td>Enter the IP address of the HD conference bridge.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Select HTTPS.</td>
</tr>
<tr>
<td>Port</td>
<td>Enter '443'.</td>
</tr>
<tr>
<td>Conference bridge username</td>
<td>Enter the conference bridge admin username, for example conductoradmin.</td>
</tr>
<tr>
<td>Conference bridge password</td>
<td>Enter the conference bridge password for this user.</td>
</tr>
<tr>
<td>SIP port</td>
<td>Enter the SIP port on which the conference bridge listens for SIP TLS traffic, typically this is '5061'.</td>
</tr>
</tbody>
</table>
3. Click **Create conference bridge**.

4. Ensure that under the **Conference bridges in this pool** section, under the **Status** header the conference bridge is listed as **Active**.

5. Repeat the steps to add any further TelePresence Servers to the conference bridge pool.

**Creating a TelePresence Server SD conference bridge pool**

Repeat the steps under **Creating a TelePresence Server HD conference bridge pool [p. 30]** to create a TelePresence Server SD conference bridge pool. Enter the same values for the fields, apart from the **Pool name**, which should be **SD TS pool**, for example.

**Adding a TelePresence Server to the SD conference bridge pool**

Repeat the steps under **Adding a TelePresence Server to the HD conference bridge pool [p. 30]** to add a TelePresence Server to the SD conference bridge pool. Enter the same values for the fields, apart from:

| Name | Enter a name for the conference bridge, for example **SD TS**. |
| IP address or FQDN | Enter the IP address of the SD conference bridge. |

**Task 19: Creating Service Preferences**

A Service Preference is a prioritized list of conference bridge pools that defines the order in which resources are used for conferences. During the configuration process, the conference bridge type is chosen as either...
**TelePresence MCU or TelePresence Server.** You cannot mix the two types of conference bridges. For TelePresence MCUs a conference can be cascaded from one TelePresence MCU to another, taking into account the prioritized list of conference bridge pools. Cascading between TelePresence Servers is not supported, because TelePresence Server version 3.0 does not have this feature.

The following examples show how to create Service Presences for:

- TelePresence MCU hosted HD conferences
- TelePresence MCU hosted SD conferences
- TelePresence Server hosted HD conferences
- TelePresence Server hosted SD conferences

**Creating a Service Preference for TelePresence MCU hosted HD conferences**

1. Go to **Conference configuration > Conference bridges > Conference bridge Service Preferences.**
2. Click **New.**
3. In the **Service Preference name** field enter **Prefer HD with SD fallback.**
4. In the **Conference bridge type** field, choose **TelePresence MCU.**
5. Click **Add Service Preference.**
6. In the **Pools** section of the page under **Pool name** select **HD MCU pool.**
7. Click **Add selected pool.**
8. In the **Pools** section of the page under **Pool name** select **SD MCU pool.**
9. Click **Add selected pool.**
10. Click **Save.**

**Creating a Service Preference for TelePresence MCU hosted SD conferences**

1. Go to **Conference configuration > Conference bridges > Conference bridge Service Preferences.**
2. Click **New.**
3. In the **Service Preference name** field enter **Prefer SD with HD fallback.**
4. In the **Conference bridge type** field, choose **TelePresence MCU.**
5. Click **Add Service Preference.**
6. In the **Pools** section of the page under **Pool name** select **SD MCU pool.**
7. Click **Add selected pool.**
8. In the Pools section of the page under Pool name select HD MCU pool.

9. Click Add selected pool.

   ![Conference bridge Service Preferences](image)

   - **Service Preference name**
     - Prefer HD with HD fallback
     - TelePresence MCU

   - **Conference bridge type**

   - **Pool name**
     - SD MCU pool
     - HD MCU pool
     - Please select

   - Add selected pool

10. Click Save.

Creating a Service Preference for TelePresence Server hosted HD conferences

1. Go to Conference configuration > Conference bridges > Conference bridge Service Preferences.
2. Click New.
3. In the Service Preference name field enter Prefer HD TS.
4. In the Conference bridge type field, choose TelePresence Server.
5. Click Add Service Preference.
6. In the Pools section of the page under Pool name select HD TS pool.
7. Click Add selected pool.

   ![Conference bridge Service Preferences](image)

   - **Service Preference name**
     - Prefer HD TS

   - **Conference bridge type**

   - **Pool name**
     - HD TS pool
     - Please select

   - Add selected pool

8. Click Save.

Creating a Service Preference for TelePresence Server hosted SD conferences

1. Go to Conference configuration > Conference bridges > Conference bridge Service Preferences.
2. Click New.
3. In the Service Preference name field enter Prefer SD TS.
4. In the **Conference bridge type** field, choose *TelePresence Server*.
5. Click **Add Service Preference**.
6. In the **Pools** section of the page under **Pool name** select *SD TS pool*.
7. Click **Add selected pool**.

![](image1.png)

8. Click **Save**.

**Task 20: Creating conference templates for Meeting-type conferences**

A Meeting-type conference template provides all its participants with the same privileges and requires one or more conference aliases. The following examples show how to create conference templates for:

- 'HD Meetings' hosted on TelePresence MCUs
- 'SD Meetings' hosted on TelePresence MCUs
- 'HD Meetings' hosted on TelePresence Servers
- 'SD Meetings' hosted on TelePresence Servers

**Creating a conference template for an ‘HD Meeting’ hosted on TelePresence MCUs**

This template uses a Service Preference that prioritizes HD pools over SD pools for TelePresence MCU resources.

1. Go to **Conference configuration > Conference templates**.
2. Click **New**.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Name</th>
<th>Enter a name for the conference template, for example <em>HD Meeting</em>.</th>
</tr>
</thead>
</table>
4. **Click Create conference template.**

**Creating a conference template for an ‘SD Meeting’ hosted on TelePresence MCUs**

This template uses a Service Preference that prioritizes SD pools over HD pools for TelePresence MCU resources.

Repeat the steps under *Creating a conference template for an ‘HD Meeting’ hosted on TelePresence MCUs* [p.34] to create a conference template for an ‘SD Meeting’ hosted on TelePresence MCUs. Enter the same values for the fields, apart from:

<table>
<thead>
<tr>
<th>Name</th>
<th>Enter a name for the conference template, for example SD meeting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference bridge Service Preference</td>
<td>Select Prefer SD with HD fallback.</td>
</tr>
</tbody>
</table>

**Creating a conference template for an ‘HD Meeting’ hosted on TelePresence Servers**

The following steps demonstrate how to create an HD meeting template for a TelePresence Server. Remember when configuring TelePresence Server pools and Service Preference that cascading between multiple TelePresence Servers is not supported.

1. Go to Conference configuration > Conference templates.
2. Click New.
3. Enter the following in the relevant fields, leave other fields as their default values:

| Name | Enter a name for the conference template, for example HD TS meeting. |
Conference type | Select Meeting.
Call Policy mode | This feature is not supported for this deployment.
Conference bridge Service Preference | Select Prefer HD TS.
Participant quality | Choose one of the HD choices from the drop-down box. When using a CTS3000 you must select Full HD (1080p 30fps / 720p 60fps video, multi-channel audio) or a custom quality setting that has an audio quality level of multi-channel, otherwise insufficient resources will be allocated to display multiple screens.
Provision for multiscreen | Decide whether this conference will support multiscreen systems, or whether it will only display single screen systems and the center camera of a multiscreen system. The default is No. If Yes is selected and the expectation is for multiscreen systems to have all three screens active, then create a pre-configured endpoint to match each multiscreen system in the call. (To do this go to Conference configuration > Pre-configured endpoints).
Content quality | Select the maximum content quality allowed for this conference.

<table>
<thead>
<tr>
<th>Conference templates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: HD TS Meeting</td>
</tr>
<tr>
<td>Call Policy mode: Off</td>
</tr>
<tr>
<td>Conference bridge Service Preference: Prefer HD TS</td>
</tr>
<tr>
<td>Limit number of participants: Minimum</td>
</tr>
<tr>
<td>Limit the conference duration (minutes): Maximum</td>
</tr>
<tr>
<td>Participant quality: Yes</td>
</tr>
<tr>
<td>Provision for multiscreen: Yes</td>
</tr>
<tr>
<td>Detect maximum contents: Yes</td>
</tr>
<tr>
<td>Optimize resources:</td>
</tr>
<tr>
<td>Content quality: HD (720p 30fps video, stereo audio)</td>
</tr>
<tr>
<td>Scheduled conference: Yes</td>
</tr>
</tbody>
</table>

4. Click Create conference template.
Creating a conference template for an ‘SD Meeting’ hosted on TelePresence Servers

Repeat the steps under Creating a conference template for an ‘HD Meeting’ hosted on TelePresence Servers [p.35] to create a conference template for an ‘SD Meeting’ hosted on TelePresence Servers. Enter the same values for the fields, apart from:

<table>
<thead>
<tr>
<th><strong>Name</strong></th>
<th>Enter a name for the conference template, for example SD TS meeting.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conference bridge Service Preference</strong></td>
<td>Select Prefer SD TS.</td>
</tr>
<tr>
<td><strong>Participant quality</strong></td>
<td>Choose one of the SD choices from the drop-down box. Note that CTS3000 endpoints require the audio level to be set to multi-channel to be allocated sufficient resources to display three screens. The pre-defined SD setting does not have an audio level of multi-channel, which will result in only the center screen of the CTS3000 to be displayed.</td>
</tr>
</tbody>
</table>

Task 21: Creating conference templates for Lecture-type conferences

A Lecture-type conference template defines two role types, Chairperson and Guest, with different privileges and requires at least one conference alias per role type. The following examples show how to create conference templates for:

- Lecture-type conferences hosted on TelePresence MCUs
- Lecture-type conferences hosted on TelePresence Servers

Creating a conference template for a Lecture-type conference hosted on HD TelePresence MCUs

The following steps set up a ‘Lecture’ template that uses an TelePresence MCU Service Preference:

1. Go to Conference configuration > Conference templates.
2. Click New.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th><strong>Name</strong></th>
<th>Enter a name for the conference template, for example Lecture.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conference type</strong></td>
<td>Select Lecture.</td>
</tr>
<tr>
<td><strong>Number of chairperson participants to reserve</strong></td>
<td>Enter ‘2’ in this example.</td>
</tr>
<tr>
<td><strong>Call Policy mode</strong></td>
<td>This feature is not supported for this deployment.</td>
</tr>
</tbody>
</table>
4. Click **Create conference template**.

5. Click **View/Edit** for the Lecture template.

6. Click **Edit** under the **Advanced parameters** section.

7. Enter the following in the relevant fields, leave other fields as their default values:

   **Field** | **Input**
   --- | ---
   PIN | Check the on box next to the field in the primary column then enter a PIN for the chair to use when entering the conference.

   Note: for TelePresence MCU software versions lower than 4.3 a Guest PIN must be specified if a Chair PIN is specified.

8. Click **Save** to exit the advance parameters.

9. Click **Save** on the **Conference template** page.

Creating a conference template for a Lecture-type conference hosted on HD TelePresence Servers

1. Go to **Conference configuration > Conference templates**.

2. Click **New**.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th><strong>Name</strong></th>
<th>Enter a name for the conference template, for example Lecture - TS.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conference type</strong></td>
<td>Select Lecture.</td>
</tr>
<tr>
<td><strong>Number of chairperson participants to reserve</strong></td>
<td>Enter '2' in this example.</td>
</tr>
<tr>
<td><strong>Call Policy mode</strong></td>
<td>This feature is not supported for this deployment.</td>
</tr>
<tr>
<td><strong>Conference bridge Service Preference</strong></td>
<td>Select Prefer HD TS.</td>
</tr>
<tr>
<td><strong>Chairperson quality</strong></td>
<td>Enter the maximum quality setting to apply to chairpersons using this conference template. When using a CTS3000 you must select Full HD (1080p 30fps / 720p 60fps video, multi-channel audio) or a custom quality setting that has an audio quality level of multi-channel, otherwise insufficient resources will be allocated to display multiple screens.</td>
</tr>
<tr>
<td><strong>Guest quality</strong></td>
<td>Enter the maximum quality setting to apply to guests using this conference template. When using a CTS3000 you must select Full HD (1080p 30fps / 720p 60fps video, multi-channel audio) or a custom quality setting that has an audio quality level of multi-channel, otherwise insufficient resources will be allocated to display multiple screens.</td>
</tr>
<tr>
<td><strong>Provision for multiscreen</strong></td>
<td>Decide whether this conference will support multiscreen systems, or whether it will only display single screen systems and the center camera of a multiscreen system. The default is No. If Yes is selected and the expectation is for multiscreen systems to have all three screens active, then create a pre-configured endpoint to match each multiscreen system in the call. (To do this go to Conference configuration &gt; Pre-configured endpoints). For more information on pre-configuring endpoints see Cisco TelePresence Conductor Administrator Guide.</td>
</tr>
<tr>
<td><strong>Content quality</strong></td>
<td>Select the maximum quality allowed for this conference.</td>
</tr>
</tbody>
</table>
4. Click Create conference template.
5. Click View/Edit for the Lecture - TS template.
6. Click Edit under the Advanced parameters section.
7. Enter the following in the relevant field, leave other fields as their default values:

   **PIN**  Check the on box next to the Pin field and then enter a PIN for the chair to use when entering the conference.

8. Click Save to exit the advance parameters.

9. Click Save on the Conference template page.
Task 22: Creating the auto-dialed participants

An auto-dialed participant is a participant that is automatically dialed from the conferencing resource at the start of the conference. The auto-dialed participant is associated with templates and is commonly used for dialing an endpoint, an external audio bridge, or a recording device.

Although the TelePresence Conductor and its conference bridges use SIP to call auto-dialed participants, H.323 endpoints can be called into a conference through the Cisco VCS’s inter-working feature.

The following examples show how to create an auto-dialed participant for:
- an endpoint to join the 'HD Meeting'
- a recording device to join the 'Lecture' hosted on TelePresence MCUs
- a recording device to join the 'Lecture - TS' hosted on TelePresence Servers

Note: auto-dialed participants that are multiscreen endpoints are not supported. For multiscreen auto-dialed participants only the center screen is displayed in the conference.

Creating an auto-dialed participant for an endpoint

1. Go to Conference configuration > Auto-dialed participants.
2. Click New.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Name</th>
<th>Enter a name for the auto-dialed participant, for example Invite boss to meeting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference template</td>
<td>Select HD Meeting.</td>
</tr>
<tr>
<td>Conference name match</td>
<td>Enter meet\boss. (HD</td>
</tr>
<tr>
<td>Address</td>
<td>Enter boss@&lt;SIP domain&gt;.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Select SIP.</td>
</tr>
<tr>
<td>Role type</td>
<td>Select Participant.</td>
</tr>
<tr>
<td>Keep conference alive</td>
<td>Select Yes.</td>
</tr>
</tbody>
</table>
4. Click **Create participant**.
5. Click **View/Edit** for the ‘Invite boss to meeting’ auto-dialed participant.
6. At the bottom of the page, there is a chart with the templates that are associated with this auto-dialed participant. Verify this association is correct.

7. Click **Save**.

**Creating an auto-dialed participant for a recording device joining a TelePresence MCU hosted conference**

1. Go to **Conference configuration > Auto-dialed participants**.
2. Click **New**.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Enter a name for the auto-dialed participant, for example <strong>TCS – Recording device</strong>.</td>
</tr>
<tr>
<td><strong>Conference template</strong></td>
<td>Select <strong>Lecture</strong> to use with the ‘Lecture’ meeting on TelePresence MCUs.</td>
</tr>
<tr>
<td><strong>Conference name match</strong></td>
<td>Enter (<strong>.</strong>*) This will match on all conference names.</td>
</tr>
<tr>
<td><strong>Address</strong></td>
<td>Enter <strong>TCSrecording@&lt;SIP domain&gt;</strong>.</td>
</tr>
<tr>
<td><strong>Protocol</strong></td>
<td>Select <strong>SIP</strong>.</td>
</tr>
<tr>
<td><strong>Role type</strong></td>
<td>Select <strong>Guest</strong>.</td>
</tr>
<tr>
<td><strong>Keep conference alive</strong></td>
<td>Select <strong>No</strong>.</td>
</tr>
</tbody>
</table>
4. Click **Create participant**.
5. Click **View/Edit** for the 'TCS - Recording device' auto-dialed participant.
6. Click **Edit** under the **Advanced parameters** section.
7. Enter the following in the relevant fields, leave other fields as their default values:

   **Appear as a recording device**
   - Check the on box next to the field and then change the value to *True* from the drop-down list.

8. Click **Save** to exit the advance parameters.

9. At the bottom of the page, there is a chart with the templates that are associated with this auto-dialed participant. Verify this association is correct.

10. Click **Save** on the **Auto-dialed participants** page.

**Creating an auto-dialed participant for a recording device joining a TelePresence Server hosted conference**

1. Go to **Conference configuration > Auto-dialed participants**.
2. Click **New**.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Enter a name for the auto-dialed participant, for example TCS – Recording device for TS.</td>
</tr>
<tr>
<td><strong>Conference template</strong></td>
<td>Select Lecture to use with the Lecture meeting on the TelePresence MCU</td>
</tr>
<tr>
<td><strong>Conference name match</strong></td>
<td>Enter (.*) This will match on all conference names.</td>
</tr>
<tr>
<td><strong>Address</strong></td>
<td>Enter TCSrecording@&lt;SIP domain&gt;</td>
</tr>
<tr>
<td><strong>Protocol</strong></td>
<td>Select SIP.</td>
</tr>
<tr>
<td><strong>Role type</strong></td>
<td>Select Guest.</td>
</tr>
<tr>
<td><strong>Keep conference alive</strong></td>
<td>Select No.</td>
</tr>
<tr>
<td><strong>Maximum quality</strong></td>
<td>Enter the maximum quality setting to apply to this auto-dialed participant.</td>
</tr>
</tbody>
</table>

4. Click **Create participant**.

5. At the bottom of the page, there is a chart with the templates that are associated with this auto-dialed participant. Verify this association is correct.

<table>
<thead>
<tr>
<th>Template associated with this auto-dialed participant</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture – TS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Click **Save** on the **Auto-dialed participants** page.
**Task 23: Creating conference aliases for the Meeting-type conferences**

Meeting-type conferences require one or more conference aliases for the role-type of 'Participant'. The following examples show how to create a conference alias for:

- TelePresence MCU hosted 'HD Meeting' conference template
- TelePresence MCU hosted 'SD Meeting' conference template
- TelePresence Server hosted 'HD Meeting' conference template
- TelePresence Server hosted 'SD Meeting' conference template

### Creating a conference alias for the TelePresence MCU hosted ‘HD Meeting’ template

1. Go to Conference configuration > Conference aliases.
2. Click **New**.
3. Enter the following in the relevant fields, leave other fields as their default values:

   | **Name** | Enter a name for the alias, for example HD Meeting. |
   | **Incoming alias** | Enter (543.|meet\..*\.HD)@<SIP domain>. This pattern will either match a numerical alias of 543 and any single digit or meet.any_characters.HD@vcs.domain. |
   | **Conference name** | Enter \1. |
   | **Priority** | Enter '25' for example. |
   | **Conference template** | Select HD Meeting. |
   | **Role type** | Select Participant. |

4. Click **Create conference alias**.

---

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Creating a conference alias for the TelePresence MCU hosted ‘SD Meeting’ template

Repeat the steps under Creating a conference alias for the TelePresence MCU hosted ‘HD Meeting’ template [p.45] to create a conference alias for the ‘SD Meeting’ hosted on TelePresence MCUs. Enter the same values for the fields, apart from:

<table>
<thead>
<tr>
<th>Name</th>
<th>Enter a name for the alias, for example SD Meeting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming alias</td>
<td>Enter (544.</td>
</tr>
<tr>
<td>Priority</td>
<td>Enter ‘40’ for example.</td>
</tr>
<tr>
<td>Conference template</td>
<td>Select SD Meeting.</td>
</tr>
</tbody>
</table>

Creating a conference alias for the TelePresence Server hosted ‘HD TS Meeting’ template

The following steps create a conference alias that uses the ‘HD TS Meeting’ template and hosts the conference on a TelePresence Server:

1. Go to Conference configuration > Conference aliases.
2. Click New.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Name</th>
<th>Enter a name for the alias, for example HD TS Meeting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming alias</td>
<td>Enter (643.</td>
</tr>
<tr>
<td>Conference name</td>
<td>Enter \1.</td>
</tr>
<tr>
<td>Priority</td>
<td>Enter ’30’ for example.</td>
</tr>
<tr>
<td>Conference template</td>
<td>Select HD TS Meeting.</td>
</tr>
<tr>
<td>Role type</td>
<td>Select Participant.</td>
</tr>
</tbody>
</table>

4. Click Create conference alias.
Creating a conference alias for the TelePresence Server hosted ‘SD TS Meeting’ template

Repeat the steps under Creating a conference alias for the TelePresence Server hosted ‘HD TS Meeting’ template [p.46] to create a conference alias for the 'SD Meeting' hosted on TelePresence Servers. Enter the same values for the fields, apart from:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Enter a name for the alias, for example SD TS Meeting.</td>
</tr>
<tr>
<td><strong>Incoming alias</strong></td>
<td>Enter (852.\ meetts.*\ SD)@&lt;SIP domain&gt;. This pattern will either match a numerical alias of 852 and any single digit or <a href="mailto:meetts.any_characters.SD@vcs.domain">meetts.any_characters.SD@vcs.domain</a>.</td>
</tr>
<tr>
<td><strong>Priority</strong></td>
<td>Enter '45' for example.</td>
</tr>
<tr>
<td><strong>Conference template</strong></td>
<td>Select SD TS Meeting.</td>
</tr>
</tbody>
</table>

Task 24: Creating conference aliases for the Lecture-type templates

Lecture-type conferences require one or more conference aliases per role-type. The role types are 'Chairperson' and 'Guest'. The following examples show how to create a conference alias for:

- TelePresence MCU hosted 'Lecture' template with a role of 'Chairperson'
- TelePresence MCU hosted 'Lecture' template with a role of 'Guest'
- TelePresence Server hosted 'Lecture-TS' template with a role of 'Chairperson'
- TelePresence Server hosted 'Lecture-TS' template with a role of 'Guest'

Creating a conference alias for the TelePresence MCU hosted ‘Lecture’ template with a role of ‘Chairperson’

1. Go to Conference configuration > Conference aliases.
2. Click New.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Enter a name for the alias, for example Training - Teacher.</td>
</tr>
<tr>
<td><strong>Incoming alias</strong></td>
<td>Enter (231.</td>
</tr>
<tr>
<td><strong>Conference name</strong></td>
<td>Enter training.</td>
</tr>
<tr>
<td><strong>Priority</strong></td>
<td>Enter '10' for example.</td>
</tr>
</tbody>
</table>
4. Click **Create conference alias**.

**Creating a conference alias for the TelePresence MCU hosted 'Lecture' template with a role of 'Guest'**

1. Go to **Conference configuration > Conference aliases**.
2. Click **New**.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td>Enter a name for the alias, for example <strong>Training - Students</strong>.</td>
</tr>
<tr>
<td><strong>Incoming alias</strong></td>
<td>Enter (388.</td>
</tr>
<tr>
<td><strong>Conference name</strong></td>
<td>Enter <strong>Training</strong> for example.</td>
</tr>
<tr>
<td><strong>Priority</strong></td>
<td>Enter '20' for example.</td>
</tr>
<tr>
<td><strong>Conference template</strong></td>
<td>Select <strong>Lecture</strong>.</td>
</tr>
<tr>
<td><strong>Role type</strong></td>
<td>Select <strong>Guest</strong>.</td>
</tr>
</tbody>
</table>
4. Click Create conference alias.

**Creating a conference alias for the TelePresence Server hosted ‘Lecture - TS’ template with a role of ‘Chairperson’**

1. Go to Conference configuration > Conference aliases.
2. Click New.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Name</th>
<th>Enter a name for the alias, for example Training - Teacher - TS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming alias</td>
<td>Enter (232.</td>
</tr>
<tr>
<td>Conference name</td>
<td>Enter TrainingTS for example.</td>
</tr>
<tr>
<td>Priority</td>
<td>Enter '15' for example.</td>
</tr>
<tr>
<td>Conference template</td>
<td>Select Lecture - TS.</td>
</tr>
<tr>
<td>Role type</td>
<td>Select Chairperson.</td>
</tr>
</tbody>
</table>

4. Click Create conference alias.
Creating a conference alias for the TelePresence Server hosted ‘Lecture - TS’ template with a role of ‘Guest’

1. Go to Conference configuration > Conference aliases.
2. Click New.
3. Enter the following in the relevant fields, leave other fields as their default values:

<table>
<thead>
<tr>
<th>Name</th>
<th>Enter a name for the alias, for example Training - Students - TS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming alias</td>
<td>Enter (389.</td>
</tr>
<tr>
<td>Conference name</td>
<td>Enter TrainingTS for example.</td>
</tr>
<tr>
<td>Priority</td>
<td>Enter '23' for example.</td>
</tr>
<tr>
<td>Conference template</td>
<td>Select Lecture - TS.</td>
</tr>
<tr>
<td>Role type</td>
<td>Select Guest.</td>
</tr>
</tbody>
</table>

4. Click Create conference alias.
Testing system configuration

When the configuration described in the previous sections is complete, you should test that the system is working correctly.

Creating a Meeting-type conference

To test that two or more endpoints can join an HD TelePresence MCU conference based on a template with a type of Meeting, dial 5432@<SIP domain> or meet.test.HD@<SIP domain> from each endpoint. Both endpoints should be taken to the same conference.

To test that two or more endpoints can join an HD TelePresence Server conference based on a template with a type of Meeting, dial 6432@<SIP domain> or meetts.test.HD@<SIP domain> from each endpoint. Both endpoints should be taken to the same conference.

Adding an auto-dialed participant

To test that auto-dialed participants are called when an HD Meeting TelePresence MCU conference is created, dial 5432@<SIP domain> or meet.boss.HD@<SIP domain> from an endpoint. The auto-dialed participant boss@<SIP domain> and TCSrecording@<SIP domain> should receive a call from the TelePresence MCU conference bridge.

To test that auto-dialed participants are called when an HD Meeting TelePresence Server conference is created, dial 6432@<SIP domain> or meetts.boss.HD@<SIP domain> from an endpoint. The auto-dialed participant boss@<SIP domain> and TCSrecording@<SIP domain> should receive a call from the TelePresence Server conference bridge.

Creating a Lecture-type conference

To test that two or more endpoints can use different aliases to join the same TelePresence MCU conference based on a template with a type of Lecture, have one endpoint dial 2311@<SIP domain> or teach.test@vcs.domain to represent the teacher and have the other endpoint dial 3881@<SIP domain> or leamt.test@vcs.domain. All endpoints should be taken to the same conference. The endpoints that dialed 3881@vcs.domain or leamt.test@vcs.domain will see a blank screen until the endpoint that dialed 2311@vcs.domain or teach.test@vcs.domain enters the conference.

To test that two or more endpoints can use different aliases to join the same TelePresence Server conference based on a template with a type of Lecture, have one endpoint dial 2321@<SIP domain> or teachtst.test@vcs.domain to represent the teacher and have the other endpoint dial 3891@<SIP domain> or leamts.test@vcs.domain. All endpoints should be taken to the same conference. The endpoints that dialed 3891@vcs.domain or leamts.test@vcs.domain will see a blank screen until the endpoint that dialed 2321@vcs.domain or teachtst.test@vcs.domain enters the conference.

Testing cascading

To check that cascading is working properly it is necessary to occupy all the ports on the first conference bridge so that the TelePresence Conductor cascades the conference to the second conference bridge. If there are enough endpoints registered to the Cisco VCS you can test this by adding callers to the conference until it is cascaded. Alternatively, you can increase the number of chairperson participants to be reserved by
a Lecture-type template to a level that fills the primary conference bridge. This will cause the conference to be cascaded when guests dial in to a conference that is based on that template.

Note that cascading is only supported on TelePresence MCUs; this capability does not exist on TelePresence Servers.
Creating a system backup

To create a backup of TelePresence Conductor system data:

1. Go to Maintenance > Backup and restore.
2. Optionally, enter an Encryption password with which to encrypt the backup file. If a password is specified, the same password will be required to restore the file.
3. Click Create system backup file.
4. After the backup file has been prepared, a pop-up window appears and prompts you to save the file (the exact wording depends on your browser). The default name is in the format:
   `<software version>_<hardware serial number>_<date>_<time>_backup.tar.gz`
   (The file extension is normally `.tar.gz.enc` if an encryption password is specified. However, if you use Internet Explorer to create an encrypted backup file, the filename extension will be `.tar.gz.gz` by default. These different filename extensions have no operational impact; you can create and restore encrypted backup files using any supported browser.)
   The preparation of the system backup file may take several minutes. Do not navigate away from this page while the file is being prepared.
5. Save the file to a designated location.

Log files are not included in the system backup file.

**Note:** a system backup can only be restored to the peer from which the backup was taken.

For more information see Cisco TelePresence Conductor Administrator Guide (D14826) or the TelePresence Conductor’s online help.
Troubleshooting

Tracking a call from Cisco VCS to TelePresence Conductor

Event log
To see the events associated with a particular call on both Cisco VCS and TelePresence Conductor look at the search history on the Cisco VCS (Status > Search history, then click View for a particular call). Searching for the tag associated with that call in the event log on the TelePresence Conductor yields the events associated with that call:

- For calls which create conferences this tag is then associated with all future events associated with this conference (for example, conference destruction and auto-dialed participant requests to the conference bridge).
- For calls which are joining existing conferences, the tag is associated with their conference join request.

A full explanation of all the terms in the event log can be found in Cisco TelePresence Conductor Administrator Guide.

Note that the call tag is specific to a call across multiple Cisco VCSs.

Diagnostic log
Use diagnostic logging (Maintenance > Diagnostics > Diagnostic logging) to see the call signaling in the Cisco VCS.

Tracking a conference on the TelePresence Conductor

Event log
To see all events associated with a particular conference alias (i.e. across multiple individual conferences) filter by Conference_alias_UUID in the event log either by copying it to the filter box from the event log or by clicking on the hyperlink.

Diagnostic log
Use diagnostic logging (Maintenance > Diagnostics > Diagnostic logging) to see the call signaling in the TelePresence Conductor Back-to-back-user-agent (B2BUA).

Specific issues

Unable to enable more than one conference bridge
If only a single conference bridge can be enabled, the reason could be that there is no valid release key installed on the TelePresence Conductor.

Contact your Cisco account representative to obtain release key and option keys.

TelePresence Conductor does not communicate with any conference bridges
If the TelePresence Conductor is running without a release key, only a single un-clustered conference bridge is supported.
If the only conference bridge that is enabled on the TelePresence Conductor is clustered, the conference bridge shows as Unusable on the Conference bridge status page (Status > Conference bridges) and the TelePresence Conductor is unable to communicate with any conference bridges.

Contact your Cisco account representative to obtain release key and option keys.

**Auto-dialled participant not connected**

If the auto-dialled participant does not get called:

1. On the TelePresence Conductor go to Conference configuration > Auto-dialed participants and verify that the settings for the auto-dialled participant are correct, specifically check that:
   - Participant address is correct.
   - Conference name match will match a valid conference.
   - State of the participant is Enabled.

2. On the TelePresence Conductor go to Status > Logs > Event Log > All events to check whether the TelePresence Conductor tried to call the auto-dialed participant.

3. On the TelePresence MCU, verify how the conference bridge will dial the auto-dialed participant and perform the relevant steps:

<table>
<thead>
<tr>
<th>Method of dialing auto-dialed participant</th>
<th>Configuration to verify</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIP via Cisco VCS trunk</td>
<td>On the TelePresence Conductor go to Conference configuration &gt; Unified CM locations and verify that</td>
</tr>
<tr>
<td></td>
<td>- the Conference type is Rendezvous or Both</td>
</tr>
<tr>
<td></td>
<td>- the Unified CM trunk settings for out-dial calls are set correctly to route the auto-dialed participant back to Unified CM.</td>
</tr>
<tr>
<td></td>
<td>- On the TelePresence MCU go to Settings &gt; SIP and ensure the conference bridge is not registered to a SIP Proxy by having the SIP registrar usage field set to Disabled.</td>
</tr>
<tr>
<td>SIP via a proxy</td>
<td>On the TelePresence MCU</td>
</tr>
<tr>
<td></td>
<td>- go to Network &gt; Services and verify that SIP (TLS) is ticked</td>
</tr>
<tr>
<td></td>
<td>- go to Settings &gt; SIP and verify that the TelePresence MCU has the correct SIP proxy address defined and Outgoing transport set to TLS</td>
</tr>
<tr>
<td></td>
<td>- check that the TelePresence MCU is registered to the SIP proxy</td>
</tr>
<tr>
<td></td>
<td>- check that the TelePresence MCU can make outbound calls via that proxy</td>
</tr>
<tr>
<td>H323 via a gatekeeper</td>
<td>On the TelePresence MCU</td>
</tr>
<tr>
<td></td>
<td>- go to Network &gt; Services and verify that Incoming H.323 is ticked</td>
</tr>
<tr>
<td></td>
<td>- go to Settings &gt; H323 and verify that</td>
</tr>
<tr>
<td></td>
<td>○ H.323 gatekeeper usage is Enabled</td>
</tr>
<tr>
<td></td>
<td>○ Gatekeeper address contains the correct address</td>
</tr>
<tr>
<td></td>
<td>○ H.323 ID to register is correct</td>
</tr>
<tr>
<td></td>
<td>- check that the TelePresence MCU is registered to the H323 gatekeeper</td>
</tr>
<tr>
<td></td>
<td>- check that the TelePresence MCU can make outbound calls via that gatekeeper</td>
</tr>
</tbody>
</table>

4. On the TelePresence Server go to Configuration > SIP Settings and verify that the Outbound call configuration is set to Call direct.
Pre-configured endpoint cannot join conference

When you pre-configure single-screen and multiscreen endpoints on the TelePresence Conductor, you specify the address of each codec used by the endpoint.

In certain scenarios the address of the endpoint may change depending on where it registers to (for example if the domain portion of the URI is the IP address of the peer the endpoint is registering to). If not all addresses that the endpoint can be known as are listed in the pre-configured endpoints configuration in TelePresence Conductor, the TelePresence Conductor may not recognize its address and the endpoint will use the template default settings rather than the known endpoint settings.

To resolve this, you must ensure that all possible addresses that could be used by the codec are listed.

To do this:

1. On the TelePresence Conductor, go to Conference configuration > Pre-configured endpoints.
2. From the list of pre-configured endpoints select the endpoint in question.
3. In the Codecs section at the bottom of the page, click on the first codec.
4. In the Optional address fields, ensure that all possible addresses from which calls for this codec could be received are listed.
5. Click Save.
6. Repeat steps 3-5 for each codec configured for that endpoint.

Encrypted calls drop on Cisco TelePresence System (CTS) Series endpoints

When a CTS is registered to a Unified CM, which has a SIP trunk to a Cisco VCS and this Cisco VCS is connected to a TelePresence Conductor via the TelePresence Conductor’s B2BUA, calls will drop when the conference that the CTS dials into is hosted on a TelePresence Server and when the SIP session is refreshed. In this scenario we recommend that you create a SIP trunk directly from the Unified CM to the TelePresence Conductor as detailed in the Optimized Conferencing for Cisco Unified Communications Manager Solution Guide.

Error messages

Error communicating with mcu error="Method not supported" – this may be because a physical TelePresence Server has been added as a TelePresence MCU bridge.

Unsupported conference bridge software version - this may be because a physical TelePresence MCU has been added as a TelePresence Server bridge.

Regular expression match and replace

A regular expression replace of \12\2 will replace with 12th bracket match and follow it with the 2nd bracket match.

If a match of the 1st bracket match, followed by the insertion of the literal digit 2 followed by the 2nd bracket match is required, then named matches need to be used. These work as follows:

(?P<id>123) 456 (789) will store
123 as \1
789 as \2
123 as named replace: \<id> (the name used inside the "<" and ">") is user selectable

to replace, use:
\g<id>

so to replace the 1st bracket match, followed by the insertion of the literal digit 2 followed by the 2nd bracket
match use:
\g<id>2\2
Appendix 1: Identifying dedicated content ports on a Cisco TelePresence MCU

This information is available on the spec sheet for the TelePresence MCU, but it is also available through the web interface, the steps below describe how to locate and use this information.

1. Go to the TelePresence MCU in a browser.
2. Log in as administrator.
3. Go to Status > Conferences and look at the line marked Streaming and content ports in use 0 (0)/##, where ## is the number of dedicated content ports of this TelePresence MCU.

![Conference status table]

<table>
<thead>
<tr>
<th>Conference status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active conferences 0</td>
</tr>
<tr>
<td>Active auto attendants 0</td>
</tr>
<tr>
<td>Completed conferences 9</td>
</tr>
<tr>
<td>Completed auto attendants 0</td>
</tr>
<tr>
<td>Active conference participants 0</td>
</tr>
<tr>
<td>Previous conference participants 38</td>
</tr>
<tr>
<td>Active streaming viewers 0 (0) / 24</td>
</tr>
<tr>
<td>TCP streaming viewers 0 (0) / 24</td>
</tr>
<tr>
<td>ConferenceMC users connected 0 (0) / 12</td>
</tr>
<tr>
<td>Video ports in use 0 (11) / 12</td>
</tr>
<tr>
<td>Audio-only ports in use 0 (1) / 12</td>
</tr>
<tr>
<td>Streaming and content ports in use 0 (2) / 12</td>
</tr>
</tbody>
</table>
Document revision history

The following table summarizes the changes that have been applied to this document:

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>August 2013</td>
<td>Corrected the zone profile setting on the Cisco VCS and added the description of an issue to the troubleshooting section.</td>
</tr>
<tr>
<td>01</td>
<td>May 2013</td>
<td>Initial release.</td>
</tr>
</tbody>
</table>
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