



# Telephony Integration

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## Introduction

Telephony Integration is a process that enables the communication between Cisco Unity Connection and the phone system, providing access to various features such as:

- Calls to a user extension that does not answer are forwarded to the personal greeting of the user.
- Messages left for a user activate the message waiting indicator (MWI) on the extension.
- A user has easy access to messages by pressing a button on the phone and entering a password.
- Calls to a user extension that is busy are forwarded to the busy greeting of the user.
- Unity Connection receives caller ID information from the phone system (if available).
- Unity Connection identifies the user who leaves a message during a forwarded internal call, based on the extension from which the call originated.

To know more about integrating Unity Connection with phone system, see the “[Integrating Cisco Unity Connection with the Phone System](#)” chapter of *Design Guide for Cisco Unity Connection, Release 15*, available at [https://www.cisco.com/c/en/us/td/docs/voice\\_ip\\_comm/connection/15/design/guide/b\\_15cucdg.html](https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/design/guide/b_15cucdg.html)

After understanding how the Unity Connection integrates with a phone system, you need to configure and edit the settings for phone system, ports, port group, trunk, and security in Unity Connection.

# Phone System

Cisco Unity Connection Administration identify multiple phone systems that integrate Unity Connection with Cisco Unified Communications Manager. For a matrix of supported combinations, see the *Multiple Phone System Integration Guide for Cisco Unity Connection* at [http://www.cisco.com/en/US/products/ps6509/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6509/products_installation_and_configuration_guides_list.html).

A phone system has one or more port groups that further have voice messaging ports.



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**Note** Cisco Business Edition does not support adding or deleting phone system integrations.

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## Configuring Phone System Integration

The settings for a phone system can be modified after it is integrated with Unity Connection. The phone system settings identify the phone system with which Unity Connection integrates and regulate certain phone system features. (Integration configuration settings are located in the port groups that belong to the phone system.)

You can delete a phone system if it is no longer used by Unity Connection. Before a phone system is deleted, make sure to delete or reassign all of the following objects that are associated with the phone system to another phone system:

- All users (including MWI devices and notification devices)
- All user templates
- All systems
- All call handler templates

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**Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** and select **Phone System**.

The Search Phone System page displays the currently configured phone system integrations.

**Note** The port count is zero for the newly configured phone systems. After adding ports to the specific phone system, the port count shows the number of available voice ports.

**Step 2** Configure a phone system (For more information on each field, see Help> This Page):

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- To create a new phone system, select **Add New**. On the New Phone System page, enter the values of the required fields and select Save.
  - To edit a phone system, select the phone system. On the Phone System Basics page, select Edit and change any of the following settings:
    - Phone System Basics. See [Phone System Basics, on page 3](#).
    - Cisco Unified Communications Manager AXL Servers. See [Cisco Unified Communications Manager AXL Servers, on page 3](#).
    - Phone System Associations. See [Phone System Associations, on page 4](#).

After editing the settings, select Save.

- To delete a phone system, check the check box adjacent to the display name of the phone system that you want to delete. Select **Delete Selected** and OK to confirm deletion.

## Phone System Settings

### Phone System Basics

- If you created the phone system integration to use the same voice messaging port to turn on and off an MWI the Use Same Port for Enabling and Disabling MWIs check box is checked. You can disable this configuration without leaving MWIs on when there are no voice messages for the user by unchecking the Use Same Port for Enabling and Disabling MWIs and **Force All MWIs Off for This Phone System** check boxes.
- If you want to synchronize all the MWIs for a phone system without affecting MWIs on other phone systems, select **Run** in front of Synchronize All MWIs on This Phone System option.
- If you want to change the call loop detection settings to enable or disable the types of calls that are checked, set the applicable settings in Call Loop Detection Using DTMF and select **Save**.




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**Note** Call loop occurs when the forwarded Unity Connection calls (for example, to notify a user that a message has been received) sometimes return back to Unity Connection.

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### Cisco Unified Communications Manager AXL Servers

AXL servers are supported only for Cisco Unified CM phone systems and are needed when Unity Connection must have access to the Cisco Unified CM database for:

- Importing Cisco Unified CM users (In a Unity Connection cluster configuration, you must be signed in to the publisher server to import Cisco Unified CM user data).
- Changing certain phone settings for users of Unity Connection personal call transfer rules.

Cisco Unity Connection	Cisco Unified Communications Manager			
	8.x	9.x	10.x	11.x
version	8.x	9.x	10.x	11.x
8.x	Yes	Yes	Yes	No
9.x <sup>1</sup>	Yes	Yes	Yes	No
10.x	Yes	Yes	Yes	No
11.x	Yes	Yes	Yes	Yes

<sup>1</sup> Unity Connection 9.1(2) SU4 and later supports all the versions of Cisco Unified CM for AXL server integration.



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**Note** AXL servers are not supported for Cisco Unified Communications Manager Express integrations or Cisco Business Edition.

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## Configuring an AXL Server in Unity Connection

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- Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** and select **Phone System** .
- On the Phone Systems Basics page of the selected Cisco Unified CM phone system, in the Edit menu, select **Cisco Unified Communications Manager AXL Servers**.
- Step 2** Configure an AXL server (For more information on each field, see Help> This Page):
- To add an AXL server:

On the Edit AXL Servers page, in the AXL Servers field, select **Add New**. Enter the values of the required fields and select Save.

**Note** Make sure that the username entered on Edit AXL Server page must match the username of a Cisco Unified CM application user who is assigned to the "Standard AXL API Access" role. Also, the password must match the password of the Cisco Unified CM application username.
  - To add a corresponding application server in Cisco Unified CM:
    - a. Sign in to Cisco Unified CM Administration, expand **System** and select **Application Server**.
    - b. On the Find and List Application Servers page, select **Find** to display all application servers .
    - c. In the Name column, select the name of the Unity Connection server.
    - d. On the Application Server Configuration page, in the Available Application User field, select the Cisco Unified CM application user and move it to the Selected Application User field. Select Save.
  - To edit an AXL server integration:

On the Edit AXL Servers page, select the AXL server that you want to edit. Enter the values of the required fields and select Save.
  - To delete an AXL server:

On the Edit AXL Servers page, in AXL Servers field, check the check box next to the AXL server that you want to delete. Select **Delete Selected and OK to confirm deletion** .
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## Phone System Associations

You can view the list of all Unity Connection users associated with the phone system by selecting the Phone System Associations option on the Edit menu of Phone System Basics page.

## Port

The voice messaging ports allow Unity Connection to receive calls (for example, to record a message) and make calls (for example to send message notifications or to set MWIs).

Each voice messaging port belongs to only one port group. Port groups have their own voice messaging ports.



**Note** Ports are no longer licensed in the Unity Connection server. The ports are now configurable as per the hardware of the server deployed for installing Unity Connection.

## Configuring Ports

Voice messaging ports provide the connections for calls between Unity Connection and the phone system. You can add voice messaging ports after the phone system has been created.

*Cisco Business Edition only:* Before you add ports, you must have existing voice messaging ports in Cisco Unified CM Administration that do not belong to a port group.

This section includes information on configuring a port group for Unity Connection, define the settings for the ports, and save them.

**Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** and select **Port**.

The Search Ports page displays the currently configured ports.

**Step 2** Configure ports (For more information on each field, see Help> This Page):

- To add a port:

On the Search Ports page, select **Add New**.

On the New Port page, enter the values of the required settings and select **Save**.

In Cisco Unity Connection Administration, in the Related Links list, select **Check Telephony Configuration**, and select **Go** to confirm the phone system integration settings.

If the test is not successful, the Task Execution Results list displays one or more messages with troubleshooting steps. After correcting the problems, check the configuration again.

Verify that there are appropriate number of ports set to answer calls and an appropriate number of ports are set to dial out otherwise the integration may not function correctly. See the “Usage of Voicemail Ports in Cisco Unity Connection” section of the applicable Cisco Unity Connection integration guide at [http://www.cisco.com/en/US/products/ps6509/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6509/products_installation_and_configuration_guides_list.html).

- To edit an existing port:

On the Search Ports page, select a port that you want to edit.

On the Port Basics page, enter the values of the required fields and select **Save**.

- To delete one or more ports:

On the Search Ports page, check the check box next to the voice messaging ports that you want to delete.

Select **Delete Selected** and OK to confirm deletion.

## Viewing the Port Certificate

Port certificates for voice messaging ports are used only by SCCP integrations with Cisco Unified Communications Manager 6.x and later and are required for authentication of the Unity Connection voice messaging ports. You can view the port certificate that helps in troubleshooting authentication and encryption problems.

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- Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** and select **Port**.
  - Step 2** On the Search Ports page, select the display name of the voice messaging port for which you want to see the device certificate.
  - Step 3** On the Port Basics page, select **View Certificate**.
  - Step 4** In the View Port Certificate window, the information from the port device certificate is displayed.
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## Port Group

Port Groups are assigned voice messaging ports that define Unity Connection integration configuration settings. Most of the phone system integrations need only one port group. However, you may need multiple port groups in the following scenarios:

- For integration with phone systems through PIMG/TIMG units, each PIMG/TIMG unit is connected to one port group with the applicable voice messaging ports. For example, a system that uses five PIMG units requires five port groups, one port group for each PIMG unit.
- For integrations with other phone systems, an additional port group with its own voice messaging ports may be used for testing a new configuration or for troubleshooting.

*Cisco Business Edition only:* Before you can add a port group, you must have the existing voice messaging ports in Cisco Unified CM Administration, which do not belong to a port group.




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**Note** You can create a maximum of 90 port groups if you are using only TUI (touchtone conversation) and VUI (voice-recognition) features of Unity Connection. However, if you are using all the features of Unity Connection, you are allowed to create a maximum of 60 port groups.

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You can change the settings of a port group, which affects only the voice messaging ports of that port group. When you delete a port group, any voice messaging port belonging to that port group are deleted at the same time. However, the phone system to which the port group belongs is not deleted.

## Configuring Port Group

This section includes information on configuring a port group for Unity Connection, define the settings of the port group, and save them.

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- Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** and select **Port Group**.

The Search Port Groups page displays the currently configured port groups.

**Step 2** Configure port groups (For more information on each field, see [Help > This Page](#)):

- To add a port group:

On the Search Port Groups page, select Add New.

On the New Port Group page, enter the values of the required fields and select **Save**.

- To edit a port group:

On the Search Port Groups page, select the port group name that you want to edit.

On the Port Group Basics page, select Edit and change any of the following settings:

- Port Group Basics. For information, see [Phone System Basics, on page 3](#).
- Servers. For information, see [Servers, on page 8](#).
- Advanced Settings. For information, see [Advanced Settings, on page 10](#).
- Codec Advertising. For information, see [Codec Advertising, on page 11](#).

Select **Save** after editing the settings.

- To delete a port group:

On the Search Port Groups page, check the check box next to the port group name of the port groups that you want to delete.

Select **Delete Selected** and OK to confirm deletion.

## Port Group Settings

You can change the settings of a port group after it has been added. Changes to the settings affect only the voice messaging ports that belong to the port group.

### Port Group Basics

#### Message Waiting Indicators (MWI)

An MWI is a flashing LCD panel or special dial tone on user phones, which allows the user to know that a voice message is waiting. The type of indicator depends on the phone system and the user phones. Phone systems that support message counts may also display the number of messages that the user has.

To change the MWI settings, on the Port Group Basics page of a selected port group, change the applicable settings in Message Waiting Indicator Settings and select **Save**.

#### Session Initiation Protocol (SIP) Settings

You can change the SIP settings after the phone system integration has been created.



**Note** Cisco Business Edition does not support phone system integrations that use SIP.

To change the SIP settings, on the Port Group Basics page of a selected port group, change the applicable settings in Session Initiation Protocol (SIP) Settings and select **Save**.

## Servers

### Cisco Unified Communications Manager Servers

For Cisco Unified Communications Manager integrations, Related Links helps you to integrate with one Cisco Unified CM server only. The secondary Cisco Unified CM server in the cluster must be added after the integration is completed. You can change the Cisco Unified CM server settings after the server has been added.

You can delete a Cisco Unified Communications Manager server when it is no longer used by the phone system integration. If you want to move a Cisco Unified CM server to another port group, you must delete the Cisco Unified CM server from one port group and add it to the second port group.




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**Note** Cisco Business Edition does not support adding or deleting secondary Cisco Unified CM servers.

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### Configuring Cisco Unified Communications Manager Server

**Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** and select **Port Group**.

The Search Port Groups page displays the currently configured Cisco Unified CM servers. On the Port Group Basics page of a selected port group, select Edit and select **Servers**.

**Step 2** Configure a Cisco Unified Communications Manager Server (For information on each field, see Help> This Page):

- To add a secondary Cisco Unified CM server, on the Edit Servers page, in the Cisco Unified Communications Manager Servers list, select Add. Enter the values of the required fields and select Save.
- To edit a Cisco Unified CM server, on the Edit Servers page, in Cisco Unified Communications Manager Servers, enter the values of the required fields and select Save.
- To delete a Cisco Unified CM server, in Cisco Unified Communications Manager Servers, check the check box next to the Cisco Unified CM servers that you want to delete. Select **Delete Selected** and **OK** to confirm the deletion.

### TFTP Servers

For Cisco Unified Communications Manager integrations, TFTP servers are required only when the Cisco Unified CM cluster uses authentication and encryption for the Unity Connection voice messaging ports. You must add a TFTP server after you create the Cisco Unified CM phone system integration.

You can change the TFTP server settings after the server has been added. You can also delete a TFTP server when it is no longer used by the port group.

### Configuring a TFTP Server in Unity Connection

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- Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** and select **Port Group**.  
The Search Port Groups page displays the currently configured TFTP servers. On the Port Group Basics page of a selected port group, select Edit > **Servers**.
- Step 2** Configure a TFTP server (For more information on each field, see Help > This Page):
- **To add a TFTP server:**  
On the Edit Servers page, in the TFTP Servers field, select **Add**.  
Enter the values of the required fields and select **Save**.
  - **To edit a TFTP server:**  
On the Edit Servers page, in TFTP Servers, enter the values of the required fields and select **Save**.
  - **To delete a TFTP server:**
    - On the Edit Servers page, in TFTP Servers, check the checkbox next to the TFTP server that you want to delete.
    - Select **Delete Selected** and **OK** to confirm the deletion.
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## SIP Server

For a phone system integration with Cisco Unified Communications Manager through a SIP trunk or with another SIP server, you can add SIP server after the phone system has been created. You can change the SIP server settings after the server has been added. A SIP server can be deleted if it is no longer used by a port group.



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**Note** Cisco Business Edition does not support SIP servers.

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## Configuring a SIP Server

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- Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** and select **Port Group**.  
The Search Port Groups page displays the currently configured SIP servers. On the Port Group Basics page of a selected port group, select Edit and then select **Servers**.
- Step 2** Configure a SIP server (For more information on each field, see Help > This Page):
- To add a SIP server:
    - a. On the Edit Servers page, in the SIP Servers field, select **Add**.
    - b. Enter the values of the required fields and select **Save**.
  - To edit a SIP server:
    - a. On the Edit Servers page, in the SIP Servers field, select the SIP server you want to edit.
    - b. Change the values of the required fields and select **Save**.
  - To delete a SIP server:

- a. On the Edit Servers page, in the SIP Servers field, check the check box next to the SIP server that you want to delete.
- b. Select

**Delete Selected**

and

**OK to confirm deletion.**

## PIMG/TIMG Units

If the phone systems are integrated through PIMG/TIMG units, each PIMG/TIMG unit is created in a separate port group. You can add, change, or delete PIMG/TIMG units after the phone system integration has been created.



**Note** In Unity Connection, integration with multiple phone systems is supported only with Cisco Business Edition 6000/7000.

## Configuring PIMG/TIMG Units

**Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** and select **Port Group**.

The Search Port Groups page displays the currently configured PIMG/ TIMG units.

**Step 2** Configure a PIMG/TIMG unit (For more information on each field, see Help> This Page):

- To add a PIMG/TIMG unit, in Port Group Search Results, select **Add New**. On the New Port Group page, in the Phone System field, select the phone system for which you want to add a PIMG/TIMG unit. Enter the applicable settings and select **Save**.
- To edit a PIMG/TIMG unit, select the display name of the port group for which you want to change PIMG/TIMG settings. On the Port Group Basics page, in PIMG Settings, enter the applicable settings and select **Save**.
- To delete a PIMG/TMG unit, in Port Group Search Results, check the check box next to the port group for the PIMG/TIMG unit that you want to delete. Select **Delete Selected** and then select **OK to confirm deletion**.

## Advanced Settings

The port group advanced settings control the settings that are not often used, such as delays and MWI usage. Do not change the default values of port group advanced settings.

Normalization controls automatic volume adjustments for recording messages. For enabling or disabling normalization, make sure to leave normalization enabled and do not change the value of the Target Decibel Level for Recordings and Messages field in **System Settings > General Configuration**.

## Editing Port Group Advanced Settings

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- Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations**, and then select **Port Group**.
- On the Search Port Groups page, select the display name of the port group for which you want to change the advanced settings.
- Step 2** On the Port Group Basics page, on the Edit menu, select **Advanced Settings** and do the following:
- To edit a port group, change the applicable settings in Port Group Advanced Settings and select **Save**.
  - To enable or disable normalization, change the applicable settings in Audio Normalization for Recordings and Messages and select **Save**.
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## Codec Advertising

For calls, Unity Connection advertises the audio or video format (or codec) that is preferred for the media stream with the phone system.

For the following reasons, Unity Connection should use the same audio or video format for the media stream that the phone system uses:

- To reduce the need for transcoding the media stream from one audio or video format to another.
- To minimize the performance impact on the Unity Connection server and on the phone system.
- To preserve the audio or video quality of calls.

When Unity Connection advertises a different audio or video format other than the one used by the phone system, the phone system transcodes the media stream.

## Changing the Audio or Video Format Used for Calls

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- Step 1** In Cisco Unity Connection Administration, expand Telephony Integrations, and then select Port Group.
- Step 2** On the Search Port Groups page, select the port group that belongs to the phone system integration for which you want to change the audio or video format of the media stream.
- Step 3** On the Port Group Basics page, select Edit, and then select Codec Advertising.
- Step 4** On the Edit Codec Advertising page, select the Up and Down arrows to move the codec between the Advertised Codec box and the Unadvertised Codecs box, and then select Save.
- Step 5** (Only SIP integrations) If you want to change the packet size that is used by the advertised codecs, select the applicable packet setting for each codec in the Packet Size list, and then select Save.
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## Trunk

When multiple phone systems are integrated with Cisco Unity Connection, you can configure a phone system trunk so that calls on one phone system can be transferred to extensions on another phone system. Phone system trunks are accessed by dialing extra digits (for example, dialing 9) before dialing the extension.



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**Note** Cisco Business Edition does not support phone system trunks.

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## Configuring Trunk

If another phone system integration exists, you can add a phone system trunk to provide access of calls from one phone system to extensions on the other phone system. You can add phone system trunks after the phone system integration has been created.

Phone system trunk settings cannot be changed. However, you can delete the phone system trunk that you want to change and add a new phone system trunk with the settings that you want. A phone system trunk can be deleted when it is no longer used by a phone system integration.

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**Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations**, and then select **Trunk**.

The Search Phone System Trunks page displays the currently configured phone system trunks.

**Step 2** Configure a phone system trunk (For information on each field, see Help> This Page):

- a) To add a new phone system trunk, in Phone System Trunk Search Results, select **Add New**. On the New Phone System Trunk page, enter the applicable settings and select **Save**.
  - b) To delete a phone system trunk, in Phone System Trunk Search Results, check the check box next to the phone system trunk that you want to delete. Select **Delete Selected**. Select OK to confirm deletion.
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## Speech Connect Port

Speech Connect uses voice-enabled directory handlers that allow both the employees and outside callers to speak the name of an employee and instantly get connected, without navigating to an audio-text tree, and without knowing the extension of the employee. For easy access, you can configure a Speech Connect speed dial on user phones.

Speech Connect port can be configured as per the hardware profile of the virtual machine deployed for installing Unity Connection.



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**Note** By default Unity Connection provide two system generated Speech Connect ports. These ports are not mapped to actual licenses. To use Speech Connect Port functionality properly, you must install proper licenses on Prime License Manager. For more information on the Licenses, see "[Managing Licenses](https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/install_upgrade/guide/b_15cuciumg.html)" chapter of the Install, Upgrade, and Maintenance Guide for Cisco Unity Connection Release 15 [https://www.cisco.com/c/en/us/td/docs/voice\\_ip\\_comm/connection/15/install\\_upgrade/guide/b\\_15cuciumg.html](https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/install_upgrade/guide/b_15cuciumg.html) available at

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## Configuring a Speech Connect Port

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**Step 1** In Cisco Unity Connection Administration, expand Telephony Integrations, and then select Speech Connect Port.

The Speech Connect Port Configuration page displays the currently configured speech connect ports.

- Step 2** In New Speech Connect Port, select the Unity Connection server from the Server drop down list and in the Number of Ports field, enter the number of Speech Connect ports that you want to configure.
- Step 3** Select Save.
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## Audio and Video Format Using Phone

Cisco Unity Connection advertises the audio format (or codec) that is preferred for the media stream with the phone system.

Consider the following when setting the audio format:

- When Unity Connection advertises a different audio format than the one used by the phone system, the phone system transcodes the media stream.
- Unity Connection should use the same audio format for the media stream that the phone system uses for the following reasons:
  - To reduce the need for transcoding the media stream from one audio format to another.
  - To minimize the performance impact on the Unity Connection server and on the phone system.
  - To preserve the audio quality of the calls.

For more information on audio format codecs, see the “Audio Codecs” section in the “Sizing and Scaling Cisco Unity Connection Servers” chapter of the *Design Guide for Cisco Unity Connection* available at, [https://www.cisco.com/c/en/us/td/docs/voice\\_ip\\_comm/connection/15/design/guide/b\\_15cucdg.html](https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/design/guide/b_15cucdg.html).

## Configuring the Audio and Video Format

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- Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations**, and then select **Port Group**.
- Step 2** On the Search Port Groups page, select the port group that belongs to the phone system integration for which you want to change the audio format of the media stream.
- Step 3** On the Port Group Basics page, on the Edit menu, select **Codec Advertising**.
- Step 4** On the Edit Codec Advertising page, select the Up and Down arrows to change the order of the codecs or to move codecs between the Advertised Codec box and the Unadvertised Codecs box.
- If only one codec is in the Advertised Codecs box, Cisco Unity Connection sends the media stream in that audio format. The phone system transcodes if it does not use this audio format.
- If two or more codecs are in the Advertised Codecs box, Unity Connection advertises its preference for the first codec in the list. It sends the media stream in the audio format from the list that the phone system selects.
- Step 5** Select **Save**.
- Step 6** (*All integrations except SCCP*) If you want to change the packet size that is used by the advertised codecs, on the Port Group Basics page, under Advertised Codec Settings, select the applicable packet setting for each codec in the Packet Size list, and select **Save**.

**Step 7** (Only SIP integrations) If you want to change the packet size that is used by the advertised codecs, on the Port Group Basics page, under Advertised Codec Settings, select the applicable packet setting for each codec in the Packet Size list, and select Save.

For both the audio and video calls, change the packet size for the codecs G711, G729, and G722 in Cisco Unified Communications Manager and the remaining codecs is changed in Cisco Unity Connection Administration.

**Note** In SIP integration, you can also send comfort noise packets through telephony. For information on how to send comfort noise packets, see [Configuring Unity Connection to Send Comfort Noise Packets every second during Record](#) section.

**Step 8** On the Port Group menu, select **Search Port Groups**.

**Step 9** Repeat Step 2 through Step 8 for all remaining port groups that belong to the phone system integration for which you want to change the audio format of the media stream.

## Configuring Unity Connection to Send Comfort Noise Packets every second during Record

In SIP integration, you can configure Unity Connection to send comfort noise packets through telephony interface. Do the following procedure for configuring Unity Connection to send comfort noise packets:

**Step 1** In Cisco Unity Connection Administration, navigate **System Settings > Advanced > Telephony**. On the Telephony Configuration page, check the **Vad Enabled** check box.

**Note** By default, VAD is enabled on the system.

**Step 2** Execute below CLI command:

```
run cuc dbquery unitydirdb execute procedure
csp_configurationmodify(pfullname='System.Mixer.EnableSendSIDPacketsDuringRecord',pvaluebool=1)
```

**Step 3** Restart Connection Mixer service for the changes to take effect.



**Caution** It is recommended to perform the given steps during off peak hours as it requires restart of a "Connection Mixer" critical service.



**Note**

- In case of a cluster, execute CLI command only on publisher server and make sure that database replication is working fine for the cluster.
- Restart the Connection Mixer service on both the nodes.

## Configuring Unity Connection to clean up Inactive Calls caused by Phone Inactivity

Cisco Unity Connection can be configured to clean up the inactive call after five minutes of phone inactivity to conserve resources.

Enabling this configuration helps prevent the ports from congestion by performing call cleanup for inactive and unresponsive endpoints. It also reduces the frequency of ICMP floods caused by such endpoints. Do the following procedure for configuring Unity Connection to activate this behavior :

**Step 1** The configuration is disabled by default. To enable it, execute the following CLI command :

```
run cuc dbquery unitydirdb execute procedure
csp_configurationmodify (pfullname='System.Mixer.EnableEpInactivityDetection', pvaluebool=1)
```

**Step 2** Restart the **Connection Mixer** service for the changes to take effect.

**Caution**

It is recommended to perform the given steps during off hours as it require restart of a **Connection Mixer** service.

**Note**

- In case of a cluster, execute CLI command only on publisher node and make sure that database replication is working fine for the cluster.
- Restart the **Connection Mixer** service on both the nodes of cluster.

## Security

Certificates and security profile can be managed when Cisco Unified Communications Manager authentication and encryption is configured for Unity Connection voice messaging ports.

### Viewing and Saving Unity Connection Root Certificate

The root certificate is used by SCCP integrations with Cisco Unified Communications Manager 7.x and later and SIP trunk integrations with Cisco Unified CM 7.0 and later. It is required for authentication of the Unity Connection voice messaging ports. You can view the root certificate that helps in troubleshooting authentication and encryption problems.

#### Viewing and Save the Unity Connection Root Certificate

**Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** > **Security**, and then select **Root Certificate**.

**Step 2** To view the root certificate, on the View Root Certificate page, the information from the root certificate is displayed.

**Step 3** To save the root certificate as a file, on the View Root Certificate page, right-click the **Right-Click to Save the Certificate as a File** link, and select **Save Target As**.

- a) In the Save As dialog box, browse to the location where you want to save the Unity Connection root certificate as a file and in the File Name field, confirm that the extension is .pem (rather than .htm) for Cisco Unified CM 5.x or later. Select **Save**.

**Caution** The certificate must be saved as a file with the correct extension otherwise Cisco Unified CM does not recognize the certificate.

- b) In the Download Complete dialog box, select **Close**. The Unity Connection root certificate file is ready to be copied to all Cisco Unified CM servers in this Cisco Unified CM phone system integration. For instructions, see the applicable Cisco Unified CM integration guide at [http://www.cisco.com/en/US/products/ps6509/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6509/products_installation_and_configuration_guides_list.html).

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## Configuring a SIP Security Profile (Cisco Unified Communications Manager SIP Trunk Integrations Only)

The SIP security profile is used only by SIP trunk integrations with Cisco Unified CM 7.0 and later, and is required for authentication of the Unity Connection voice messaging ports. You can change a SIP security profile after it is created. You can delete a SIP security profile when the Cisco Unified CM server is no longer configured for authentication of the Unity Connection voice messaging ports.

### Adding a SIP Security Profile (Cisco Unified Communications Manager SIP Trunk Integrations Only)

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**Step 1** In Cisco Unity Connection Administration, expand **Telephony Integrations** > **Security**, and then select **SIP Security Profile**.

The Search SIP Security Profiles page displays the currently configured SIP security profiles.

**Step 2** Configure a SIP security profile (For information, see Help> This Page):

- To add a SIP security profile:

On the Search SIP Security Profiles page, select **Add New**.

On the New SIP Security Profile page, in the Port field, enter the port number that the Cisco Unified CM server uses for SIP trunk authentication and encryption of the voice messaging ports.

To encrypt the call signaling messages, check the **Do TLS** check box and select **Save**.

- To edit a SIP security profile:

On the Search SIP Security Profiles page, select the name of the SIP security profile that you want to edit.

On the Edit SIP Security Profile page, enter the applicable settings and select **Save**.

- To delete a SIP security profile:

On the Search SIP Security Profiles page, check the check box next to the display name of the SIP security profile that you want to delete.



Select **Delete Selected** and then select OK.

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## IPv6 in Unity Connection (Cisco Unified Communications Manager Integrations Only)

Unity Connection supports IPv6 addressing with Cisco Unified Communications Manager phone system integrations using SCCP or SIP:

- IPv6 support is disabled by default. When you enable IPv6, you can configure Unity Connection to obtain an IPv6 address either through router advertisement, through DHCP, or by manually configuring an address. You can also configure the mode in which Unity Connection listens for incoming traffic—IPv4, IPv6, or both IPv4 and IPv6.
- For SCCP integrations with Cisco Unified CM, if Unity Connection is configured to listen for the incoming IPv4 and IPv6 traffic, you can configure the addressing mode that Unity Connection uses for call control signaling for each port group to use either IPv4 or IPv6. (This mode is also used when connecting to a TFTP server.)
- For SIP integrations with Cisco Unified CM, if Unity Connection is configured to listen for the incoming IPv4 and IPv6 traffic, you can configure the addressing mode that Unity Connection uses for call control signaling for each port group to use either IPv4 or IPv6. (This mode is also used when connecting to a TFTP server.) In addition, you can configure the addressing mode that Unity Connection uses for media for each port group to use either IPv4 or IPv6.

For instructions on enabling and configuring IPv6 for an existing Cisco Unified CM integration, see the “[Upgrading Cisco Unity Connection](#)” chapter in *Install, Upgrade, and Maintenance Guide for Cisco Unity Connection, Release 15*, available at [https://www.cisco.com/c/en/us/td/docs/voice\\_ip\\_comm/connection/15/install\\_upgrade/guide/b\\_15cuciumg.html](https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/connection/15/install_upgrade/guide/b_15cuciumg.html).

For instructions on enabling and configuring IPv6 while setting up a new Cisco Unified CM integration, see the applicable Cisco Unified CM integration guide at [http://www.cisco.com/en/US/products/ps6509/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6509/products_installation_and_configuration_guides_list.html).

