Phone System Integration

This chapter contains the following sections:

Preparations for Troubleshooting the Phone System

Problems with external and internal calls, message notification calls, and message waiting indicators (MWIs) can be caused by the phone system, by Cisco Unity Connection, or by both, and are therefore difficult to diagnose. Several of the procedures for resolving problems use the single-line test, in which the phone lines connected to Connection are tested one at a time.

Most phone systems provide documentation on the codes that perform transfers, recalls, and other call progress functions. Have the phone system documentation available while doing the procedure steps in this section.

Setting Up For a Diagnostic Test

To do diagnostic tests, you need two test extensions. Phone 1 is assigned to a test user. Phone 2 is set up only in the phone system and does not need to have a Cisco Unity Connection user assigned. The two extensions must be in the same calling search space as the pilot number for Connection.

To Set Up the Test Configuration

Step 1 Set up two test extensions (Phone 1 and Phone 2) on the same phone system that Cisco Unity Connection is connected to.

Step 2 Set Phone 1 to forward calls to the Connection pilot number when calls are not answered or when the phone is busy.

Step 3 To create a test user for testing, in Cisco Unity Connection Administration, expand **Users**, then click **Users**.

Step 4 On the Search Users page, on the User menu, click **New User**.

Step 5 On the New User page, enter the following settings.

Table 4-1 Settings for the New User Page

Field	Setting
User Type	User with Voice Mailbox
Based on Template	<the applicable user template>
Alias	testuser
First Name	Test
Last Name	User
Display Name	Test User
Extension	<the extension of Phone 1>

Step 6 Click **Save**.

Step 7 On the Edit User Basics page, in the Voice Name field, record a voice name for the test user.

Step 8 In the Phone System field, confirm that the phone system selected is the phone system that Phone 1 is connected to.

Step 9 Uncheck the **Set for Self-Enrollment at Next Login** check box.

Step 10 Click **Save**.

Step 11 On the Edit menu, click **Message Waiting Indicators**.

Step 12 On the Message Waiting Indicators page, click the message waiting indictor. If no message waiting indication is in the table, click **Add New**.

Step 13 On the Edit Message Waiting Indicator page, enter the following settings.

Table 4-2 Settings for the Edit Message Waiting Indicator Page

Field	Setting
Enabled	Check this check box to enable MWIs for the test user.
Display Name	Accept the default or enter a different name.
Inherit User's Extension	Check this check box to enable MWIs on Phone 1.

Step 14 Click **Save**.

Step 15 On the Transfer Options page, click the active option.

Step 16 On the Edit Transfer Options page, under Transfer Action, click the **Extension** option and enter the extension of Phone 1.

Step 17 In the Transfer Type field, click **Release to Switch**.

Step 18 Click **Save**.

Accessing Cisco Unity Telephony Integration Manager

Cisco Unity Connection does not use the Cisco Unity Telephony Integration Manager (UTIM) tool. The same functionality is located under Telephony Integrations in Cisco Unity Connection Administration. You can add and edit integrations there, as well as set port capabilities.

Running the Check Telephony Configuration Test

If the following conditions exist, test the telephony configuration in Cisco Unity Connection Administration:

- Calls to Cisco Unity Connection are failing
- The application event log indicates problems with the Cisco Unity-CM TSP
- Ports are failing to register

To run the Check Telephony Configuration test, click the link in the Related Links box in the upper right corner of any Telephony Integrations page in Connection Administration.

Troubleshooting Integrations with Cisco Unified CallManager

See the following sections:

- Viewing or Editing the IP Address of a Cisco Unified CallManager Server, page 4-3
- Troubleshooting Problems That Occur When Cisco Unity Connection Is Configured for Cisco Unified CallManager Authentication and Encryption, page 4-4
- Determining the Correct Port Group Template, page 4-7

Viewing or Editing the IP Address of a Cisco Unified CallManager Server

Do the following procedure to view or change the IP address or other settings of a Cisco Unified CallManager server.

To Change Cisco Unified CallManager Server Settings

Step 1 In Cisco Unity Connection Administration, expand **Telephony Integrations**, then click **Port Group**.

Step 2 On the Search Port Groups page, click the display name of the port group for which you want to change Cisco Unified CallManager server settings.

Step 3 On the Port Group Basics page, on the Edit menu, click **Servers**.

Step 4 On the Edit Servers page, under Cisco Unified CallManager Servers, change the applicable settings and click **Save**.

Step 5 In the Windows taskbar, right-click the Cisco Unity Connection icon and click **Restart > Voice Processing Server Role**.

Step 6 When prompted to confirm stopping the Voice Processing server role, click **Yes**.

Troubleshooting Problems That Occur When Cisco Unity Connection Is Configured for Cisco Unified CallManager Authentication and Encryption

When Cisco Unity Connection is integrated by SCCP with a Cisco Unified CallManager phone system, you have the option of setting up Cisco Unified CallManager authentication and encryption. If the IP address for the TFTP server has not been entered correctly, or if the root certificate for the Connection server has not been copied to the Cisco Unified CallManager server, problems can occur.

See the following sections:

- Cisco Unity Connection Will Not Start, page 4-4
- Cisco Unity Connection Does Not Answer Calls, page 4-5

Note For information on integrating Cisco Unity Connection with Cisco Unified CallManager, see the applicable Cisco Unified CallManager integration guide at http://www.cisco.com/en/US/products/ps6509/products_installation_and_configuration_guides_list.html.

Cisco Unity Connection Will Not Start

If the following conditions exist, you will need to confirm that the IP address for the TFTP server has been entered correctly:

- Connection ports are set properly for authentication or encryption.
- The port settings match on Connection and Cisco Unified CallManager.
- On restart there are errors in the application event log.
- Connection will not start.

If the IP address for the TFTP server has not been entered, or was entered incorrectly, do the following "To Add or Edit the IP Address for a TFTP Server" procedure.

To Add or Edit the IP Address for a TFTP Server

Step 1 In Cisco Unity Connection Administration, expand **Telephony Integrations**, then click **Port Group**.

Step 2 On the Search Port Groups page, click the display name of the port group for your Cisco Unified CallManager integration.

Step 3 On the Port Group Basics page, on the Edit menu, click **Servers**.

Step 4 On the Edit Servers page, under TFTP Servers, click **Add**.

Step 5 Enter the IP address for the TFTP server and click **Save**.

Step 6 In the Windows taskbar, right-click the Cisco Unity Connection icon and click **Restart > Voice Processing Server Role**.

Step 7 When prompted to confirm stopping the Voice Processing server role, click **Yes**.

Cisco Unity Connection Does Not Answer Calls

If the following conditions exist, confirm that the root certificate for the Connection server has been copied to the Cisco Unified CallManager server:

- The Connection ports are set properly for authentication or encryption.
- The port settings match on Connection and Cisco Unified CallManager.
- On restart there are errors in the application event log.
- Connection does not answer calls.

If the root certificate for the Connection server has not been copied to the Cisco Unified CallManager server, do the applicable procedure:

- To Copy the Root Certificate for Cisco Unified CallManager 4.x, page 4-5
- To Copy the Root Certificate for Cisco Unified CallManager 5.0, page 4-5

To Copy the Root Certificate for Cisco Unified CallManager 4.x

Step 1 In Cisco Unity Connection Administration, expand **Telephony Integrations**, then click **Phone System**.

Step 2 On the Search Phone Systems page, click the name of the Cisco Unified CallManager phone system for which you want to enable authentication and encryption of the Connection voice messaging ports.

Step 3 On the Phone System Basics page, on the Edit menu, click **Root Certificate**.

Step 4 On the View Root Certificate page, right-click the **Right-Click to Save the Certificate as a File** link, and click **Save Target As**.

Step 5 In the Save As dialog box, browse to the location on the Connection server where you want to save the Cisco Unity Connection root certificate as a file.

Step 6 In the File Name field, confirm that the extension is .0 (rather than .htm), and click **Save**.

Caution The certificate must be saved as a file with the extension .0 (rather than .htm) or Cisco Unified CallManager will not recognize the certificate.

Step 7 In the Download Complete dialog box, click **Close**.

Step 8 Copy the Cisco Unity Connection root certificate file to the C:\Program Files\Cisco\Certificates directory on all Cisco Unified CallManager servers in this Cisco Unified CallManager phone system integration.

Step 9 In Cisco Unity Connection Administration, in the Related Links list, click **Check Telephony Configuration** and click **Go** to confirm the connection to the Cisco Unified CallManager servers.

To Copy the Root Certificate for Cisco Unified CallManager 5.0

Step 1 In Cisco Unity Connection Administration, expand **Telephony Integrations**, then click **Phone System**.

Step 2 On the Search Phone Systems page, click the name of the Cisco Unified CallManager phone system for which you want to enable authentication and encryption of the Connection voice messaging ports.

Step 3 On the Phone System Basics page, on the Edit menu, click **Root Certificate**.

Step 4 On the View Root Certificate page, right-click the **Right-Click to Save the Certificate as a File** link, and click **Save Target As**.

Step 5 In the Save As dialog box, browse to the location on the Connection server where you want to save the Cisco Unity Connection root certificate as a file.

Step 6 In the File Name field, confirm that the extension is .pem (rather than .htm), and click **Save**.

Caution The certificate must be saved as a file with the extension .pem (rather than .htm) or Cisco Unified CallManager will not recognize the certificate.

When Cisco Unity Connection is integrated with both Cisco Unified CallManager 4.x and Cisco Unified CallManager 5.x servers, you must copy the .pem file to the Cisco Unified CallManager 5.x server and the .0 file to the Cisco Unified CallManager 4.x server. Otherwise, authentication and encryption will not function correctly.

Step 7 In the Download Complete dialog box, click **Close**.

Step 8 Copy the Cisco Unity Connection root certificate to all Cisco Unified CallManager servers in this Cisco Unified CallManager phone system integration by doing the following substeps.

Caution The Cisco Unity Connection system clock must be synchronized with the Cisco Unified CallManager system clock for Cisco Unified CallManager authentication to function immediately. Otherwise, Cisco Unified CallManager will not let the Connection voice messaging ports register until the Cisco Unified CallManager system clock has passed the time stamp in the Connection device certificates.

a. On the Cisco Unified CallManager server, in Cisco Unified CallManager Platform Administration, on the Security menu, click **Certificate Management > Upload Certificate/CTL**.

b. On the Cisco IPT Platform Administration page, click **Upload Trust Certificate** and **CallManager - Trust**, then click **OK**.

c. Browse to the Cisco Unity Connection root certificate that you saved in Step 6.

d. Follow the on-screen instructions.

e. Repeat Step 8a. through Step 8d. on all remaining Cisco Unified CallManager servers in the cluster.

f. In Cisco Unity Connection Administration, in the Related Links drop-down list, click **Check Telephony Configuration** and click **Go** to confirm the connection to the Cisco Unified CallManager servers.

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

g. In the Task Results window, click **Close**.

Step 9 If prompted, restart the Cisco Unity Connection software.

Determining the Correct Port Group Template

When adding a phone system integration for Cisco Unified CallManager, there are two options for the Port Group Template: SCCP - Skinny Client Control Protocol or SIP - Session Initiation Protocol. The SIP protocol is valid only with Cisco Unified CallManager 5.0(1) and later.

To integrate Cisco Unity Connection with a Cisco SIP Proxy Server, select the SIP Proxy Server option rather than the Cisco Unified CallManager option in the Model list on the Select Phone System Model page of the Phone System Integration wizard.