



CHAPTER 4

Setting Up an Avaya S8500/S8700 In-Band TIMG Integration with Cisco Unity Connection

For detailed instructions for setting up an Avaya S8500/S8700 in-band TIMG integration with Cisco Unity Connection, see the following sections in this chapter:

- [Task List to Create an Avaya S8500/S8700 In-Band TIMG Integration, page 4-1](#)
- [Requirements, page 4-2](#)
- [Programming the Phone System for an In-Band TIMG Integration with Cisco Unity Connection, page 4-3](#)
- [Setting Up the TIMG Units, page 4-5](#)
- [Creating an Integration with the Phone System, page 4-14](#)



Note

Caller ID is supported for internal callers only. The Avaya S8500/S8700 phone system does not support caller ID for external callers.

Task List to Create an Avaya S8500/S8700 In-Band TIMG Integration

Before doing the following tasks to integrate Cisco Unity Connection with the phone system by using the T1 media gateway (TIMG), confirm that the Cisco Unity Connection server is ready for the integration by completing the applicable tasks in the *Cisco Unity Connection Installation Guide*.

1. Review the system and equipment requirements to confirm that all phone system and Cisco Unity Connection server requirements have been met. See the [“Requirements” section on page 4-2](#).
2. Plan how the voice messaging ports will be used by Cisco Unity Connection. See [Chapter 2, “Planning How the Voice Messaging Ports Will Be Used by Cisco Unity Connection.”](#)
3. Program the phone system and extensions. See the [“Programming the Phone System for an In-Band TIMG Integration with Cisco Unity Connection” section on page 4-3](#).
4. Set up the TIMG units for an in-band integration. See the [“Setting Up the TIMG Units” section on page 4-5](#).
5. Create the integration. See the [“Creating an Integration with the Phone System” section on page 4-14](#).
6. Test the integration. See [Chapter 6, “Testing the Integration.”](#)

- If this integration is a second or subsequent integration, add the applicable new user templates for the new phone system. See [Chapter 7, “Adding New User Templates for Multiple Integrations.”](#)

Requirements

The Avaya S8500/S8700 in-band TIMG integration supports configurations of the following components:

Phone System

- Avaya S8500/S8700 phone system.
- Software version Communication Manager 2.0.
- T1 digital trunk interface card.
- One or more TIMG units (media gateways).
- The voice messaging ports in the phone system connected by T1 digital lines (DS1 or “dry T1” digital lines only) to the ports on the TIMG units.



Caution

T1 (or “wet T1”) connections to the PSTN must be through an MTU, CSU, or other device that provides line isolation. Otherwise, the TIMG units may be damaged.

- The TIMG units connected to the same LAN or WAN that Cisco Unity Connection is connected to.
- If the TIMG units connect to a WAN, the requirements for the WAN network connections are:
 - For G.729a codec formatting, a minimum of 32.76 Kbps guaranteed bandwidth for each voice messaging port.
 - For G.711 codec formatting, a minimum of 91.56 Kbps guaranteed bandwidth for each voice messaging port.
 - No network devices that implement network address translation (NAT).
 - A maximum 200 ms one-way network latency.
- The phone system ready for the integration, as described in the documentation for the phone system.

Cisco Unity Connection Server

- Cisco Unity Connection installed and ready for the integration, as described in the applicable *Cisco Unity Connection Installation Guide* at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod_installation_guides_list.html.
- A license that enables the applicable number of voice messaging ports.

Centralized Voice Messaging

Cisco Unity Connection supports centralized voice messaging through the phone system, which supports various inter-phone system networking protocols including proprietary protocols such as Avaya DCS, Nortel MCDN, or Siemens CorNet, and standards-based protocols such as QSIG or DPNSS. Note that centralized voice messaging is a function of the phone system and its inter-phone system networking, not voicemail. Connection will support centralized voice messaging as long as the phone system and its inter-phone system networking are properly configured.

Programming the Phone System for an In-Band TIMG Integration with Cisco Unity Connection

If you use programming options other than those supplied in the following procedure, the performance of the integration may be affected.



Caution

In programming the phone system, do not send calls to voice messaging ports in Cisco Unity Connection that cannot answer calls (voice messaging ports that are not set to Answer Calls). For example, if a voice messaging port is set only to Perform Message Notification, do not send calls to it.

To Program the Avaya S8500/S8700 Phone System

- Step 1** Create a coverage path which contains the TIMG unit hunt group number as the coverage point.
- Step 2** Assign the coverage path that you created in [Step 1](#) to the user stations that must forward to the voice messaging ports on the TIMG units when calls are not answered or when the user station is busy, based on one of the call transfer types shown in [Table 4-1](#).

Table 4-1 Call Transfer Types

Transfer Type	Usage
Release transfer (blind transfer)	Program the user station to forward calls to the pilot number when: <ul style="list-style-type: none"> The extension is busy. The call is not answered.
Supervised transfer	Program the user station to forward calls to the pilot number only when the call is not answered (on the phone system, the number of rings before forwarding must be more than the number of rings to supervise the call). Confirm that call forwarding is disabled when the extension is busy.

- Step 3** Assign an extension number for each voice messaging port, which is a digital line that connects to the TIMG unit, and set the voice messaging port options as shown in [Table 4-2](#).



Note

We recommend that you distribute the voice messaging ports among multiple phone system line cards so that call processing can continue even if a line card becomes inactive.

Table 4-2 Voice Messaging Port Options for All Lines

Option	Setting
Extension	Enter the extension number of the digital line.
Type	Enter the applicable setting: <ul style="list-style-type: none"> VMI VMIFD
Loss Group	Enter 4.
Off Premises Station	Enter y.

Table 4-2 Voice Messaging Port Options for All Lines (continued)

Option	Setting
R Balance Network	Enter n .
Survivable COR	Enter internal .
Survivable Trunk Dest	Enter y .
LWC Activation	Enter y .
LWC Log External Calls	Enter n .
CDR Privacy	Enter n .
Redirect Notification	Enter y .
Per Button Ring Control	Enter n .
Bridged Call Alerting	Enter n .
Switchhook Flash	Enter y .
Ignore Rotary Digits	Enter n .
H.320 Conversion	Enter n .
Service Link Mode	Enter as-needed .
Multimedia Mode	Enter basic .
Coverage Msg Retrieval	Enter y .
Auto Answer	Enter none .
Data Restriction	Enter n .
Distinctive Audible Alert	Enter y .
Adjunct Supervision	Enter y .
Audible Message Waiting	Enter n .
Coverage After Forwarding	Enter s .
Multimedia Early Answer	Enter n .
LWC Appearance	Enter call-appr .

Step 4 Set the DS1 Circuit Pack options as shown in [Table 4-3](#).

Table 4-3 DS1 Circuit Pack Options

Option	Setting
Line Compensation	Enter 1 .
Signaling Mode	Enter robbed-bit .
Line Coding	Enter b8zs .
Framing Mode	Enter esf .
Interface Companding	Enter mulaw .
Idle Code	Enter 11111111 .
Slip Detection	Enter n .

Table 4-3 DS1 Circuit Pack Options (continued)

Option	Setting
Echo Cancellation	Enter n .
Near-end CSU Type	Enter other .

Step 5 Assign a the voice messaging ports to a hunt group by setting the options shown in [Table 4-4](#).

Table 4-4 Hunt Group Options

Option	Setting
LWC Reception	Enter none .
Message Center	Enter none .
Group Number	Enter the hunt group number.
Group Extension	Enter the pilot number for the hunt group.
Group Type	Enter ucd-mia .
Group Name	Enter the display name for the hunt group.
Queue?	Enter n .

Step 6 Enter the group member assignments for the voice messaging ports that will answer calls and press **Enter**.

If you plan to set the voice messaging ports to either answer calls or to dial out (for example, to set MWIs), make sure that you include in the hunt group only the voice messaging ports that will be set to answer calls.

For smaller systems, include in the hunt group all voice messaging ports when the ports will be set to both answer calls and dial out (for example, to set MWIs).

Setting Up the TIMG Units

Do the following procedures to set up the TIMG units (media gateways) that are connected to the phone system.

These procedures require that the following tasks have already been completed:

- The phone system is connected to the TIMG units by using T1 digital lines.
- The TIMG units are connected to a power source.
- The TIMG units are ready to be connected to the LAN or WAN.



Caution Because TIMG units have the same default IP address, you must set them up one at a time. Otherwise, you will experience IP address conflicts.

Fields that are not mentioned in the following procedures must keep their default values. For the default values of all fields, see the manufacturer documentation for the TIMG units.

To Download the TIMG Firmware Update Files for TIMG Units

- Step 1** On a Windows workstation with a high-speed Internet connection that will have access to the TIMG units, go to the Voice and Unified Communications Downloads page at <http://tools.cisco.com/support/downloads/pub/Redirect.x?mdfid=278875240>.



Note To access the software download page, you must be signed in to Cisco.com as a registered user.

This procedure describes the steps when using Internet Explorer as your web browser. If you are using a different web browser, the steps may differ.

- Step 2** In the tree control on the Downloads page, expand **Unified Communications Applications > Voice Mail and Unified Messaging > Cisco Unity**, and select **Cisco Unity Telephony Integration**.
- Step 3** On the Log In page, enter your username and password, then select **Log In**.
- Step 4** On the Select a Release page, under Latest Releases, select the most recent release.
- Step 5** In the right column, select the version of the firmware for your TIMG units.
- Step 6** On the Download Image page, select **Download**.
- Step 7** On the Supporting Document(s) page, select **Agree**.
- Step 8** In the File Download dialog box, select **Save**.
- Step 9** In the Save As dialog box, browse to the Windows workstation that will have access the TIMG units, browse to a directory where you want to save the file, and select **Save**.
- Step 10** In the Download Complete dialog box, select **Open**. The window for extracting the TIMG firmware update files appears.
- Step 11** Select **Extract**.
- Step 12** In the Extract dialog box, browse to the directory where you want the extracted files, and select **Extract**.
- Step 13** Close the window for the extracting application.

To Set Up the TIMG Units (Firmware Version 6.x)

- Step 1** On the Windows workstation, add a temporary route to enable access to the TIMG units.
- On the Windows Start menu, select **Run**.
 - Enter **cmd**, and press **Enter**. The Command Prompt window appears.
 - At the command prompt, enter **route add 10.12.13.74 <IP Address of Workstation>**, and press **Enter**.

For example, if the IP address of the workstation is 198.1.3.25, enter “route add 10.12.13.74<space>198.1.3.25” in the Command Prompt window.
 - Close the Command Prompt window.
- Step 2** Connect a TIMG unit to the network.
- Step 3** In the web browser, go to **http://10.12.13.74**.
- Step 4** To sign in, enter the following case-sensitive settings.

Table 4-5 Sign-in Settings

Field	Setting
Username	Enter admin .
Password	Enter IpodAdmin .

- Step 5** Select **OK**.
- Step 6** On the System menu, select **Upgrade**.
- Step 7** On the Upgrade page, under Browse for Upgrade File, select **Browse**.
- Step 8** In the Choose File dialog box, browse to the directory on the Windows workstation that has the extracted TIMG firmware update files.
- Step 9** Select **T1E1_<xx>.app** (where <xx> is multiple digits), and select **Open**.
- Step 10** On the Upgrade page, select **Install File**.
- Step 11** After the file is installed, a message prompting you to restart the TIMG unit appears. Select **Cancel**.



Caution Do not restart the TIMG unit until you are instructed to do so later in this procedure, even if the file installation fails. Restarting the TIMG unit at this step may prevent the TIMG unit from functioning correctly.

- Step 12** Repeat [Step 6](#) through [Step 11](#) for the following files:
- T1E1_<xx>.fsh
 - T1E1_<xx>.msd
- Step 13** On the Configuration menu, select **Import/Export**.
- Step 14** On the Import/Export page, select **Browse**.
- Step 15** In the Choose File dialog box, browse to the file T1_LS_Cfg_Avaya8500.ini.
- Step 16** Select **T1_LS_Cfg_Avaya8500.ini**, and select **Open**.
- Step 17** On the Import/Export page, select **Import File**.
- Step 18** After the file is imported, a message prompting you to restart the TIMG unit appears. Select **OK**.
- Step 19** In the web browser, go to **http://10.12.13.74**.
- Step 20** To sign in, enter the following case-sensitive settings.

Table 4-6 Sign-in Settings

Field	Setting
Username	Enter admin .
Password	Enter IpodAdmin .

- Step 21** Select **OK**.
- Step 22** On the System menu, select **Password**.
- Step 23** On the Change Password page, enter the following settings.

Table 4-7 Change Password Page Settings

Field	Setting
Old Password	Enter IpodAdmin . (This setting is case sensitive.)
New Password	Enter your new password. (This setting is case sensitive.)
Confirm Password	Enter your new password. (This setting is case sensitive.)

Step 24 Select **Change**.

Step 25 On the Configuration menu, select **Mgmt Protocols**.

Step 26 On the Management Protocols page, enter the following settings.

Table 4-8 Management Protocols Page Settings

Field	Settings
E-mail Alarms Enabled	Select No .
SNMP Traps Enabled	Select No .
HTTP Server Enabled	Select Yes .
HTTPs Server Enabled	Select No .

Step 27 Select **Submit**.

Step 28 On the Configuration menu, select **Routing Table**.

Step 29 On the Routing Table page, under Router Configuration, select **VoIP Host Groups**.

Step 30 Under VoIP Host Groups, enter the following settings for the first VoIP Host Group.

Table 4-9 First VoIP Host Group Settings

Field	Settings
Name	Accept the default or enter another descriptive name of the VoIP host group.
Load-Balanced	(Cisco Unity Connection without a cluster) Select False . (Cisco Unity Connection with a cluster configured) Select False .
Fault-Tolerant	(Cisco Unity Connection without a cluster) Select False . (Cisco Unity Connection with a cluster configured) Select True .

Step 31 For Cisco Unity Connection without a cluster, under Host List, enter the host name or IP address of the Cisco Unity Connection server and the server port in the format <host name or IP address>:5060.

For Cisco Unity Connection with a cluster configured, under Host List, enter the host name or IP address of the subscriber Cisco Unity Connection server (the second Cisco Unity Connection server that you installed) and the server port in the format <host name or IP address>:5060.

- Step 32** For Cisco Unity Connection without a cluster, continue to [Step 34](#). For Cisco Unity Connection with a cluster configured, select **Add Host**.
- Step 33** In the second field, enter the host name or IP address of the publisher Cisco Unity Connection server (the first Cisco Unity Connection server that you installed) and the server port in the format <host name or IP address>:5060.



Caution Do not add a third host under Host List or a second host group under VoIP Host Groups. Otherwise, the Cisco Unity Connection cluster may not function correctly.

- Step 34** Select **Submit**.
- Step 35** On the Configuration menu, select **TDM > T1/E1**.
- Step 36** On the T1/E1 Configuration page, enter the following settings.

Table 4-10 T1/E1 Configuration Page Settings

Field	Settings
Line Settings	
Line Mode	Select T1 .
Signaling Mode	Select CAS .
Interface Mode	Select Terminal .
T1 Line	
Line Encoding	Select B8ZS .
Framing	Select EFS .
Selects Transmit Pulse Waveform	Select Short_Haul_110ft .
T1 CAS Protocol	
T1 CAS Protocol	Select Loop_Start .
Flash Hook	Enter 550 .
Consult Call Dialtone Drop Code	Enter !! .
Consult Call Proceeding Drop Code	Enter !! .
Consult Call Busy Drop Code	Enter ! .
Consult Call Error Drop Code	Enter !! .
Consult Call Connected Drop Code	Enter ,,,, .
Consult Call Disconnected Drop Code	Enter ! .
MWI confirmation Tone	Select No .
CPID Type	Select TypeII_CPID .

Table 4-10 T1/E1 Configuration Page Settings (continued)

Field	Settings
Initial Wait for Inband CPID	Enter 5000 .
Inband CPID Complete Timeout	Enter 500 .
Failover Settings	
Enable Failover	Select No .

Step 37 Select **Submit**.

Step 38 On the Configuration menu, select **TDM > General**.

Step 39 On the TDM General Settings page, enter the following settings.

Table 4-11 TDM General Settings Page Settings

Field	Settings
PCM Coding	Select uLaw .
Minimum Call Party Delay (ms)	Enter 500 .
Maximum Call Party Delay (ms)	Enter 2000 .
Dial Digit on Time (ms)	Enter 100 .
Dial Inter-Digit Time (ms)	Enter 100 .
Dial Pause Time (ms)	Enter 2000 .
Turn MWI On FAC	Enter the code that the phone system uses to turn MWIs on.
Turn MWI Off FAC	Enter the code that the phone system uses to turn MWIs off.
Outbound Call Connect Timeout (ms)	Enter 10000 .
Wait for Ringback/Connect on Blind Transfer	Select Yes .
Hunt Group Extension	Enter the pilot number of the Cisco Unity Connection voice messaging ports.

Step 40 Select **Submit**.

Step 41 On the Configuration menu, select **TDM > Port Enable**.

Step 42 On the TDM Port Enabling page, select **No** for the ports that you want to disable on the TIMG unit.

Step 43 Confirm that **Yes** is selected for all other ports on the TIMG unit.

Step 44 Select **Submit**.

Step 45 On the Configuration menu, select **VoIP > General**.

Step 46 On the VoIP General Settings page, enter the following settings.

Table 4-12 VoIP General Settings Page Settings



Field	Setting
User-Agent	
Host and Domain Name	Enter the domain name of the TIMG unit.
Transport Type	Select UDP .
Call as Domain Name	Select No .
SIPS URI Scheme Enabled	Select No .
Invite Expiration (sec)	Enter 120 .
Server	
DNS Server Address	Enter the IP Address of the Domain Name Server that the TIMG unit will use.
Registration Server Address	Leave this field blank.
Registration Server Port	Enter 5060 .
Registration Expiration (sec)	Enter 3600 .
TCP/UDP	
UDP/TCP Transports Enabled	Select Yes .
TCP/UDP Server Port	Enter 5060 .
Proxy	
Primary Proxy Server Address	Leave this field blank.
Primary Proxy Server Port	Not applicable. Leave the default setting.
Backup Proxy Server Address	Not applicable. Leave the default setting.
Backup Proxy Server Port	Not applicable. Leave the default setting.
Proxy Query Interval	Enter 10 .
Timing	
T1 Time	Enter 500 .
T2 Time	Enter 4000 .
T4 Time	Enter 5000 .
Monitoring	
Monitor Call Connections	Select No .

Step 47 Select **Submit**.

Step 48 On the Configuration menu, select **VoIP > Media**.

Step 49 On the VoIP Media Settings page, enter the following settings.

Table 4-13 VoIP Media Settings Page Settings

Field	Settings
Audio	
Audio Compression	Select the preferred codec for audio compression: <ul style="list-style-type: none"> • G.711u—The TIMG unit will use only the G.711 mu-law codec. • G.729AB—The TIMG unit will prefer the G.729 codec but can also use the G.711 mu-law codec.
RTP Digit Relay Mode	Select RFC2833 .
Signaling Digit Relay Mode	Select Off .
Voice Activity Detection	Select On .
Frame Size	Select the applicable setting: <ul style="list-style-type: none"> • G.711—20 • G.729AB—10 <div style="border: 1px solid black; padding: 2px; margin-top: 5px;">  <p>Caution Failure to use the correct setting will result in recorded messages containing nothing but silence.</p> </div>
Frames Per Packet	Select the applicable setting: <ul style="list-style-type: none"> • G.711—1 • G.729AB—2 <div style="border: 1px solid black; padding: 2px; margin-top: 5px;">  <p>Caution Failure to use the correct setting will result in recorded messages containing nothing but silence.</p> </div>

Step 50 Select **Submit**.

Step 51 On the Configuration menu, select **VoIP > QOS**.

Step 52 On the VoIP QOS Configuration page, enter the following settings.

Table 4-14 VoIP QOS Configurative Page Settings

Field	Settings
Call Control QOS Byte	Enter 104 (equivalent to DSCP AF31).
RTP QOS Byte	Enter 184 (equivalent to DSCP EF).


Step 53 Select **Submit**.

- Step 54** On the Configuration menu, select **IP**.
- Step 55** On the IP Settings, LAN1 page, enter the following settings.

Table 4-15 IP Settings, LAN1 Page Settings

Field	Settings
Client IP Address	Enter the new IP address that you want to use for the TIMG unit. (This is the IP address that you will enter in Cisco Unity Connection Administration when you create the integration.)
Client Subnet Mask	Enter the new subnet mask, if the subnet mask is different from the default IP address.
Default Network Gateway Address	Enter the IP address of the default network gateway router that the TIMG units will use.
BOOTP Enabled	If you are using DHCP, select Yes . If you are not using DHCP, select No .

- Step 56** Select **Submit**.
- Step 57** On the Configuration menu, select **Tone Detection**.
- Step 58** On the Tone Detection page, under Call Progress Tone - Learn, in the Learn Tone Event field, select **Busy** and do the following substeps to verify that the tone is correct.
- From a available phone, call a second phone.
 - Answer the second phone when it rings, and leave both handsets off so that both phones are busy.
 - From a third phone, dial one of the busy phones.
 - Confirm that you hear a busy tone.
 - Hang up the third phone but leave the handsets for the other two phones off.
- Step 59** Under Call Progress Tone - Learn, in the Dial String field, enter the extension that you dialed in [Step 58c](#) from the third phone.
- Step 60** Select **Learn**.
- Step 61** On the Tone Detection page, under Call Progress Tone - Learn, in the Learn field, select **Error** and do the following substeps to verify that the tone is correct.
- From an available phone, dial an extension that does not exist.
 - Confirm that you hear the reorder or error tone.
 - Hang up the phone.
- Step 62** Under Call Progress Tone - Learn, in the Dial String field, enter the extension that you dialed in [Step 61a](#).
- Step 63** Select **Learn**.
- Step 64** On the Tone Detection page, under Call Progress Tone - Learn, in the Learn field, select **Ringback** and do the following substeps to verify that the tone is correct.
- From an available phone, dial an extension that does exist.
 - Confirm that you hear the ringback tone.
 - Hang up the phone.
- Step 65** Under Call Progress Tone - Learn, in the Dial String field, enter the extension that you dialed in [Step 64a](#).

- Step 66** Select **Learn**.
- Step 67** Select **Submit**.
- Step 68** Hang up the phones that you used in [Step 58](#).
- Step 69** On the Configuration menu, select **Import/Export**.
- Step 70** On the Import/Export page, under Export Files, select **Export All Settings**.
- Step 71** In the File Download dialog box, select **Save**.
- Step 72** In the Save As dialog box, browse to the Windows workstation that has access to the TIMG units, browse to a directory where you want to save the file, and select **Save**.
- Step 73** In the Download Complete dialog box, select **Open**. Notepad opens the file Config.ini that you saved.
- Step 74** Locate the line with the following parameter:
- ```
telautoanswer
```
- Step 75** Confirm that the value of the parameter is **no** so that the line reads as follows:
- ```
telautoanswer = no
```
- Step 76** Locate the line with the following parameter:
- ```
telFacCDropProc
```
- Step 77** Confirm that the value of the parameter is **!!** so that the line reads as follows:
- ```
telFacCDropProc = !!
```
-  **Caution** The telFacCDropProc parameter must be set to !!. If the telFacCDropProc parameter is set to 1, supervised transfers will fail, and the caller will hear the called party standard greeting two times.
- Step 78** Save the file, and exit Notepad.
- Step 79** On the Configuration menu of the TIMG unit, select **Import/Export**.
- Step 80** On the Import/Export page, under Browse for Import File, select **Browse**.
- Step 81** In the Choose File dialog box, browse to the file Config.ini that you saved.
- Step 82** Select **Config.ini**, and select **Open**.
- Step 83** On the Import/Export page, select **Import File**.
- Step 84** When prompted to restart the TIMG unit, select **OK**.
- Step 85** Repeat [Step 2](#) through [Step 84](#) on all remaining TIMG units.


Creating an Integration with the Phone System

After ensuring that the phone system, the TIMG units, and the Cisco Unity Connection server are ready for the integration, do the following procedures to set up the integration and to enter the port settings.

To Create an Integration

- Step 1** Sign in to Cisco Unity Connection Administration.
- Step 2** In Cisco Unity Connection Administration, expand **Telephony Integrations**, then select **Phone System**.
- Step 3** On the Search Phone Systems page, under Display Name, select the name of the default phone system.
- Step 4** On the Phone System Basics page, in the Phone System Name field, enter the descriptive name that you want for the phone system.
- Step 5** If you want to use this phone system as the default for TRaP connections so that administrators and users without voicemail boxes can record and playback through the phone in Cisco Unity Connection web applications, check the **Default TRAP Switch** check box. If you want to use another phone system as the default for TRaP connections, uncheck this check box.
- Step 6** Select **Save**.
- Step 7** On the Phone System Basics page, in the Related Links drop-down box, select **Add Port Group** and select **Go**.
- Step 8** On the New Port Group page, enter the applicable settings and select **Save**.

Table 4-16 Settings for the New Port Group Page

Field	Setting
Phone System	Select the name of the phone system that you entered in Step 4 .
Create From	Select Port Group Template and select SIP to DMG/PIMG/TIMG in the drop-down box.
Display Name	Enter a descriptive name for the port group. You can accept the default name or enter the name that you want.
SIP Security Profile	Select 5060 .
SIP Transport Protocol	Select the SIP transport protocol that Cisco Unity Connection will use.
IPv4 Address or Host Name (<i>Cisco Unity Connection 8.5 and later</i>)	Enter the IP address of the TIMG unit that you are integrating with Cisco Unity Connection.
IPv6 Address or Host Name (<i>Cisco Unity Connection 8.5 and later</i>)	Do not enter a value in this field. IPv6 is not supported for TIMG integrations.
IP Address or Host Name (<i>Cisco Unity Connection 8.0</i>)	Enter the IP address of the TIMG unit that you are integrating with Cisco Unity Connection.
Port	Enter the SIP port of the TIMG unit that Cisco Unity Connection will connect to. We recommend that you use the default setting.
	 <p>Caution This name must match the setting in the TCP/UDP Server Port field on the Configuration > VoIP > General page of the TIMG unit. Otherwise, the integration will not function correctly.</p>

- Step 9** On the Port Group Basics page, in the Related Links drop-down box, select **Add Ports** and select **Go**.
- Step 10** On the New Port page, enter the following settings and select **Save**.

Table 4-17 Settings for the New Ports Page

Field	Considerations
Enabled	Check this check box.
Number of Ports	Enter the number of voice messaging ports that you want to create in this port group. Note For a Cisco Unity Connection cluster, the Cisco Unity Connection server must have the number of voice messaging ports that are set up on the phone system for the TIMG integration so that this Cisco Unity Connection server can handle all voice messaging traffic for the Cisco Unity Connection cluster if one of the servers stops functioning. For example, if the phone system is set up with 16 voice messaging ports, this Cisco Unity Connection server must have 16 voice messaging ports.
Phone System	Select the name of the phone system that you entered in Step 4 .
Port Group	Select the name of the port group that you added in Step 8 .

- Step 11** On the Search Ports page, select the display name of the first voice messaging port that you created for this phone system integration.



Note By default, the display names for the voice messaging ports are composed of the port group display name followed by incrementing numbers.

- Step 12** On the Port Basics page, set the voice messaging port settings as applicable. The fields in the following table are the ones that you can change.

Table 4-18 Settings for the Voice Messaging Ports

Field	Considerations
Enabled	Check this check box to enable the port. The port is enabled during normal operation. Uncheck this check box to disable the port. When the port is disabled, calls to the port get a ringing tone but are not answered. Typically, the port is disabled only by the installer during testing.
Extension	Enter the extension for the port as assigned on the phone system.
Answer Calls	Check this check box to designate the port for answering calls. These calls can be incoming calls from unidentified callers or from users.
Perform Message Notification	Check this check box to designate the port for notifying users of messages. Assign Perform Message Notification to the least busy ports.
Send MWI Requests	Check this check box to designate the port for turning MWIs on and off. Assign Send MWI Requests to the least busy ports.

Table 4-18 Settings for the Voice Messaging Ports (continued)

Field	Considerations
Allow TRAP Connections	Check this check box so that users can use the port for recording and playback through the phone in Cisco Unity Connection web applications. Assign Allow TRAP Connections to the least busy ports.
Outgoing Hunt Order	Enter the priority order in which Cisco Unity Connection will use the ports when dialing out (for example, if the Perform Message Notification, Send MWI Requests, or Allow TRAP Connections check box is checked). The highest numbers are used first. However, when multiple ports have the same Outgoing Hunt Order number, Cisco Unity Connection will use the port that has been idle the longest.

Step 13 Select **Save**.

Step 14 Select **Next**.

Step 15 Repeat [Step 12](#) through [Step 14](#) for all remaining voice messaging ports for the phone system.

Step 16 In Cisco Unity Connection Administration, expand **Telephony Integrations**, then select **Phone System**.

Step 17 On the Search Phone Systems page, under Display Name, select the name of the phone system that you entered in [Step 4](#).

Step 18 Repeat [Step 7](#) through [Step 17](#) for each remaining TIMG unit that will be integrated with Cisco Unity Connection.



Note Each TIMG unit is connected to one port group with the applicable voice messaging ports. For example, a system that uses two TIMG units requires two port groups, one port group for each TIMG unit.

Step 19 If another phone system integration exists, in Cisco Unity Connection Administration, expand **Telephony Integrations**, then select **Trunk**. Otherwise, skip to [Step 23](#).

Step 20 On the Search Phone System Trunks page, on the Phone System Trunk menu, select **New Phone System Trunk**.

Step 21 On the New Phone System Trunk page, enter the following settings for the phone system trunk and select **Save**.

Table 4-19 Settings for the Phone System Trunk

Field	Setting
From Phone System	Enter the display name of the phone system that you are creating a trunk for.
To Phone System	Enter the display name of the previously existing phone system that the trunk will connect to.
Trunk Access Code	Enter the extra digits that Cisco Unity Connection must dial to transfer calls through the gateway to extensions on the previously existing phone system.

Step 22 Repeat [Step 20](#) and [Step 21](#) for all remaining phone system trunks that you want to create.

Step 23 In Cisco Unity Connection Administration, expand **Telephony Integrations**, then select **Port Group**.

Step 24 On the Search Port Groups page, select the display name of the port group that you added in [Step 8](#).

Step 25 On the Port Group Basics page, select **Reset**.

- Step 26** When prompted that resetting will terminate all call traffic, select **OK**.
- Step 27** In the Related Links drop-down 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 displays one or more messages with troubleshooting steps. After correcting the problems, test the connection again.
- Step 28** In the Task Execution Results window, select **Close**.
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