



APPENDIX **D**

Settings for PIMG Firmware Version 5.x

The following sections provide the PIMG settings when firmware version 5.x is installed on the PIMG units:

- [Digital PIMG Settings \(Firmware Version 5.x\), page D-1](#)
- [Analog PIMG Settings for a DTMF Integration \(Firmware Version 5.x\), page D-6](#)
- [Analog PIMG Settings for a Serial Integration \(Firmware Version 5.x\), page D-11](#)
- [Digital Mitel PIMG Settings \(Firmware Version 5.x\), page D-17](#)
- [Digital Rolm PIMG Settings \(Firmware Version 5.x\), page D-22](#)



Note

We recommend that you upgrade your PIMG units to the most recent version that is available at <http://tools.cisco.com/support/downloads/pub/Redirect.x?mdfid=278875240>. For instructions on downloading and installing the most recent PIMG firmware, see the chapter for your phone system integration in this guide.

Digital PIMG Settings (Firmware Version 5.x)

To Set Up the Digital PIMG Units

- Step 1** On a Windows workstation, sign in to a PIMG unit.
- Step 2** On the Configure menu, select **System**.
- Step 3** On the System page, enter the following settings.

Table D-1 **System Page Settings**

Field	Setting
Operating Mode	Select SIP.

Table D-1 System Page Settings (continued)

Field	Setting
PBX Type	Select the applicable setting: <ul style="list-style-type: none"> For Avaya phone systems, select Lucent. For NEC phone systems, select NEC_NEAX. For Nortel phone systems, select M1. For Siemens phone systems, select Optiset_300ECS.
PCM Coding	Select uLaw .

Step 4 Select **Apply Changes**.

Step 5 On the Configure menu, select **Gateway**.

Step 6 On the Gateway page, select the **Gateway Routing** tab.

Step 7 On the Gateway Routing tab, Cisco Unity Connection without a Connection cluster, skip to [Step 8](#). If Cisco Unity Connection has a Connection cluster configured, do the following substeps:

- a. In the Fault Tolerance Enabled field, select **Yes**.
- b. In the Load Balancing Enabled field, select **No**.

Step 8 Under VoIP Endpoint ID, enter the following settings.



Note To add endpoints, select **Add New Endpoint**.

Table D-2 Gateway Routing Tab Settings



Count	VoIP Endpoint ID
1	<p><i>(Cisco Unity Connection without a Connection cluster)</i> Enter the server name of the Cisco Unity Connection server.</p> <p><i>(Cisco Unity Connection with a Connection cluster configured)</i> Enter the server name of the subscriber Cisco Unity Connection server.</p>
2	<p><i>(Cisco Unity Connection without a Connection cluster)</i> Enter the server name of the Cisco Unity Connection server.</p> <p><i>(Cisco Unity Connection with a Connection cluster configured)</i> Enter the server name of the publisher Cisco Unity Connection server.</p>

Step 9 Select **Apply Changes**.

Step 10 Select the **Gateway Advanced** tab.

Step 11 On the Gateway Advanced tab, enter the following settings.

Table D-3 Gateway Advanced Tab Settings

Field	Settings
Call Connect Mode	Select OnAnswer .
Destination for Unroutable PBX Calls	Enter the extension of an attendant who will receive calls to Cisco Unity Connection that are unanswered.
Minimum Call Party Delay (msecs)	Enter 500 .
Turn MWI On FAC	For Siemens Hicom 300 E (North American) phone systems, enter Enter #*1 . Otherwise, leave this field blank.
Turn MWI Off FAC	For Siemens Hicom 300 ECS phone systems, enter Enter #*8 . Otherwise, leave this field blank.
Wait for Ringback/Connect on Blind Transfer	Select Yes .
Hunt Group Extension	Enter the pilot number of the Cisco Unity Connection voice messaging ports.
Audio Compression	Select the preferred codec for audio compression: <ul style="list-style-type: none"> • G.711 • G.729AB
Signaling Digit Relay Mode	Select Off .
Voice Activity Detection	Select Off .
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: 5px; margin-top: 10px;">  <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: 5px; margin-top: 10px;">  <p>Caution Failure to use the correct setting will result in recorded messages containing nothing but silence.</p> </div>
Call Control QOS Byte	Enter 104 (equivalent to DSCP AF31).
RTP QOS Byte	Enter 184 (equivalent to DSCP EF).

Step 12 Select **Apply Changes**.

Step 13 Select the **Gateway Capabilities** tab.

Step 14 Depending on how you have planned to use the voice messaging ports, select the applicable setting for each port in the Telephony Port Capability column.

Table D-4 Gateway Capabilities Tab Settings

Telephony Port Capability Settings	Voice Messaging Port Usage
Calls-Only	The port will answer incoming calls only and will not dial out (for example, to set MWIs or send message notifications).
MWIs-Only	The port will dial out only (for example, to set MWIs or send message notifications) and will not answer incoming calls.
Both	The port will answer incoming calls and will also dial out (for example, to set MWIs or send message notifications).



Caution In setting up the PIMG unit, do not send calls to 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 Send MWI Requests, do not send calls to it. Otherwise the integration will not function correctly.

If a port in Cisco Unity Connection is disabled, select **No** in the Telephony Port Enabled column for the corresponding port on this tab. Note that changing a setting in the Telephony Port Enabled column requires restarting the PIMG unit.

- Step 15** Select **Apply Changes**.
- Step 16** On the Configure menu, select **SIP**.
- Step 17** On the SIP page, enter the following settings.

Table D-5 SIP Page Settings

Field	Setting
Host and Domain Name	Enter the domain name of the PIMG unit.
Server Port	Enter 5060 .
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 .
T1 Time	Enter 400 .
T2 Time	Enter 3000 .

- Step 18** Select **Apply Changes**.
- Step 19** On the Configure menu, select **IP**.
- Step 20** On the IP page, enter the following settings.

Table D-6 IP Page Settings


Field	Setting
Client IP Address	Enter the new IP address you want to use for the PIMG 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 PIMG units will use.
BOOTP Enabled	Select No .

- Step 21** Select **Apply Changes**.
- Step 22** On the Configure menu, select **Tones**.
- Step 23** On the Tones page, select the **Learn** tab.



Caution Destination addresses cannot be duplicated in the same session. Otherwise, the process for learning tones will not succeed. If you do not have enough available phones to learn all the tones at one time, you can run multiple sessions to learn tones individually by checking or unchecking the applicable Acquire Tone check boxes.

- Step 24** On the Tones page, for the Dialtone event, confirm that the Acquire Tone check box is checked and leave the Destination Address field blank.
- Step 25** On the Tones page, for the Busy Tone event, confirm that the Acquire Tone check box is checked 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 26** On the Tones page, in the Destination Address field for Busy Tone, enter the extension that you dialed in [Step 25c](#). from the third phone.
- Step 27** On the Tones page, for the Error/Reorder Tone event, confirm that the Acquire Tone check box is checked 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 28** On the Tones page, in the Destination Address field for Error/Reorder Tone, enter the extension that you dialed in [Step 27a](#).
- Step 29** On the Tones page, for the Ringback Tone event, confirm that the Acquire Tone check box is checked and do the following substeps to verify that the tone is correct.
- From an available phone, dial an extension that does exist

- b. Confirm that you hear the ringback tone.
 - c. Hang up the phone.
- Step 30** On the Tones page, in the Destination Address field for Ringback Tone, enter the extension that you dialed in [Step 29a](#).
- Step 31** Select **Learn**.
-  **Note** When running learn tones, the PIMG unit will restart after learning the first tone. For details, see the caveat [CSCsh53791](#).
- Step 32** When the process is complete, check the check box for each newly learned tone and select **Apply**.
- Step 33** Hang up the phones that you used in [Step 25](#).
- Step 34** On the Configure menu, select **Restart**.
- Step 35** On the Restart page, select **Restart Unit Now**.
- Step 36** When the PIMG unit has restarted, in the View menu, select **Refresh**.
- Step 37** Repeat [Step 1](#) through [Step 36](#) on all remaining PIMG units.

Analog PIMG Settings for a DTMF Integration (Firmware Version 5.x)

To Set Up the Analog PIMG Units for a DTMF Integration

- Step 1** On a Windows workstation, sign in to a PIMG unit.
- Step 2** On the Configure menu, select **System**.
- Step 3** On the System page, enter the following settings.

Table D-7 System Page Settings

Field	Settings
Operating Mode	Select SIP .
PBX Type	Select None .
PCM Coding	Select uLaw .

- Step 4** Select **Apply Changes**.
- Step 5** On the Configure menu, select **Gateway**.
- Step 6** On the Gateway page, select the **Gateway Routing** tab.
- Step 7** On the Gateway Routing tab, Cisco Unity Connection without a Connection cluster, skip to [Step 8](#). If Cisco Unity Connection has a Connection cluster configured, do the following substeps:
- a. In the Fault Tolerance Enabled field, select **Yes**.
 - b. In the Load Balancing Enabled field, select **No**.

Step 8 Under VoIP Endpoint ID, enter the following settings.



Note To add endpoints, select **Add New Endpoint**.

Table D-8 Gateway Routing Tab Settings

Count	VoIP Endpoint ID
1	<p>(Cisco Unity Connection without a Connection cluster) Enter the server name of the Cisco Unity Connection server.</p> <p>(Cisco Unity Connection with a Connection cluster configured) Enter the server name of the subscriber Cisco Unity Connection server.</p>
2	<p>(Cisco Unity Connection without a Connection cluster) Enter the server name of the Cisco Unity Connection server.</p> <p>(Cisco Unity Connection with a Connection cluster configured) Enter the server name of the publisher Cisco Unity Connection server.</p>

Step 9 Select **Apply Changes**.



Step 10 Select the **Gateway Advanced** tab.

Step 11 On the Gateway Advanced tab, enter the following settings.

Table D-9 Gateway Advanced Tab Settings

Field	Settings
Call Connect Mode	Select OnAnswer .
Destination for Unroutable IP Calls	Leave this field blank.
Destination for Unroutable PBX Calls	Leave this field blank.
Monitor Call Connections	Select No .
Minimum Call Party Delay (msecs)	Enter 500 .
Maximum Call Party Delay (msecs)	Enter 2000 .
Dial Digit on Time (msecs)	Enter 100 .
Dial Inter-Digit Time (msecs)	Enter 100 .
Dial Pause Time (msecs)	Enter 2000 .
Turn MWI On FAC	Enter the code that turns MWIs on.
Turn MWI Off FAC	Enter the code that turns MWIs off.
Outbound Call Connect Timeout (msecs)	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.
Audio Compression	Select the preferred codec for audio compression: <ul style="list-style-type: none"> • G.711 • G.729AB

Table D-9 Gateway Advanced Tab Settings (continued)

Field	Settings
RTP Digit Relay Mode	Select RFC2833 .
Signaling Digit Relay Mode	Select Off .
Voice Activity Detection	Select Off .
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;">  Caution Failure to use the correct setting will result in recorded messages containing nothing but silence. </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;">  Caution Failure to use the correct setting will result in recorded messages containing nothing but silence. </div>
Call Control QOS Byte	Enter 104 (equivalent to DSCP AF31).
RTP QOS Byte	Enter 184 (equivalent to DSCP EF).
SNMP Traps Enabled	Select No .
E-mail Alarms Enabled	Select No .

Step 12 Select **Apply Changes**.

Step 13 Select the **Gateway Capabilities** tab.

Step 14 Depending on how you have planned to use the voice messaging ports, select the applicable setting for each port in the Telephony Port Capability column.

Table D-10 Gateway Capabilities Tab Settings

Telephony Port Capability Settings	Voice Messaging Port Usage
Calls-Only	The port will answer incoming calls only and will not dial out (for example, to set MWIs or send message notifications).
MWIs-Only	The port will dial out only (for example, to set MWIs or send message notifications) and will not answer incoming calls.
Both	The port will answer incoming calls and will also dial out (for example, to set MWIs or send message notifications).

**Caution**

In setting up the PIMG unit, do not send calls to 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 Send MWI Requests, do not send calls to it. Otherwise the integration will not function correctly.

If a port in Cisco Unity Connection is disabled, select **No** in the Telephony Port Enabled column for the corresponding port on this tab. Note that changing a setting in the Telephony Port Enabled column requires restarting the PIMG unit.

- Step 15** Select **Apply Changes**.
- Step 16** On the Configure menu, select **SIP**.
- Step 17** On the SIP page, enter the following settings.

Table D-11 **SIP Page Settings**

Field	Settings
Host and Domain Name	Enter the domain name of the PIMG unit.
Server Port	Enter 5060 .
Transport Type	Select UDP .
Call as Domain Name	Select No .
Registration Server Address	Leave this field blank.
Registration Server Port	Enter 5060 .
Registration Expiration (sec)	Enter 3600 .
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 .
T1 Time (msecs)	Enter 400 .
T2 Time (msecs)	Enter 3000 .
Invite Expiration (sec)	Enter 120 .

- Step 18** Select **Apply Changes**.
- Step 19** On the Configure menu, select **IP**.
- Step 20** On the IP page, enter the following settings.

Table D-12 IP Page Settings


Field	Settings
Client IP Address	Enter the new IP address you want to use for the PIMG unit. (This is the IP address that you 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 PIMG units will use.
BOOTP Enabled	Select No .

- Step 21** Select **Apply Changes**.
- Step 22** On the Configure menu, select **Tones**.
- Step 23** On the Tones page, select the **Learn** tab.



Caution Destination addresses cannot be duplicated in the same session. Otherwise, the process for learning tones will not succeed. If you do not have enough available phones to learn all the tones at one time, you can run multiple sessions to learn tones individually by checking or unchecking the applicable Acquire Tone check boxes.

- Step 24** On the Tones page, for the Dialtone event, confirm that the Acquire Tone check box is checked and leave the Destination Address field blank.
- Step 25** On the Tones page, for the Busy Tone event, confirm that the Acquire Tone check box is checked and do the following substeps to verify that the tone is correct.
- From an 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 26** On the Tones page, in the Destination Address field for Busy Tone, enter the extension that you dialed in [Step 25c](#). from the third phone.
- Step 27** On the Tones page, for the Error/Reorder Tone event, confirm that the Acquire Tone check box is checked 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 28** On the Tones page, in the Destination Address field for Error/Reorder Tone, enter the extension that you dialed in [Step 27a](#).
- Step 29** On the Tones page, for the Ringback Tone event, confirm that the Acquire Tone check box is checked and do the following substeps to verify that the tone is correct.
- From an available phone, dial an extension that does exist

- b. Confirm that you hear the ringback tone.
 - c. Hang up the phone.
- Step 30** On the Tones page, in the Destination Address field for Ringback Tone, enter the extension that you dialed in [Step 29a](#).
- Step 31** Select **Learn**.
-  **Note** When running learn tones, the PIMG unit will restart after learning the first tone. For details, see the caveat [CSCsh53791](#).
- Step 32** When the process is complete, check the check box for each newly learned tone and select **Apply**.
- Step 33** Hang up the phones that you used in [Step 25](#).
- Step 34** On the Configure menu, select **Restart**.
- Step 35** On the Restart page, select **Restart Unit Now**.
- Step 36** When the PIMG unit has restarted, in the View menu, select **Refresh**.
- Step 37** Repeat [Step 1](#) through [Step 36](#) on all remaining PIMG units.

Analog PIMG Settings for a Serial Integration (Firmware Version 5.x)

To Set Up the Analog PIMG Units for a Serial Integration

- Step 1** On a Windows workstation, sign in to a PIMG unit.
- Step 2** On the Configure menu, select **System**.
- Step 3** On the System page, enter the following settings.

Table D-13 System Page Settings

Field	Setting
Operating Mode	Select SIP .
PCM Coding	Select uLaw .
Serial Port Baud Rate	Select the setting that is configured on the phone system. The default setting is 9600.
Serial Port Parity	Select the setting that is configured on the phone system. The default setting is None.
Serial Port Data Bits	Select the setting that is configured on the phone system. The default setting is 8.
Serial Port Stop Bits	Select the setting that is configured on the phone system. The default setting is 1.

- Step 4** Select **Apply Changes**.
- Step 5** On the Configure menu, select **Gateway**.
- Step 6** On the Gateway page, select the **Gateway Routing** tab.
- Step 7** On the Gateway Routing tab, Cisco Unity Connection without a Connection cluster, skip to [Step 8](#). If Cisco Unity Connection has a Connection cluster configured, do the following substeps:
- In the Fault Tolerance Enabled field, select **Yes**.
 - In the Load Balancing Enabled field, select **No**.
- Step 8** Under VoIP Endpoint ID, enter the following settings.



Note To add endpoints, select **Add New Endpoint**.

Table D-14 Gateway Routing Tab Settings



Count	VoIP Endpoint ID
1	<p>(Cisco Unity Connection without a Connection cluster) Enter the server name of the Cisco Unity Connection server.</p> <p>(Cisco Unity Connection with a Connection cluster configured) Enter the server name of the subscriber Cisco Unity Connection server.</p>
2	<p>(Cisco Unity Connection without a Connection cluster) Enter the server name of the Cisco Unity Connection server.</p> <p>(Cisco Unity Connection with a Connection cluster configured) Enter the server name of the publisher Cisco Unity Connection server.</p>

- Step 9** Select **Apply Changes**.
- Step 10** Select the **Gateway Advanced** tab.
- Step 11** On the Gateway Advanced tab, enter the following settings.

Table D-15 Gateway Advanced Tab Settings

Field	Settings
Advanced Call Routing	
Call Connect Mode	Select OnAnswer .
Destination for Unroutable IP Calls	Leave this field blank.
Destination for Unroutable PBX Calls	Leave this field blank.
Monitor Call Connections	Select No .
Telephony	
Minimum Call Party Delay	Enter 500 .
Maximum Call Party Delay	Enter 2000 .
Dial Digit on Time	Enter 100 .
Dial Inter-Digit Time	Enter 100 .
Dial Pause Time	Enter 2000 .

Table D-15 Gateway Advanced Tab Settings (continued)

Field	Settings
Turn MWI On FAC	Leave this field blank.
Turn MWI Off FAC	Leave this field blank.
Outbound Call Connect Timeout	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.
Audio	
Audio Compression	Select the preferred codec for audio compression: <ul style="list-style-type: none"> • G.711 • G.729AB
RTP Digit Relay Mode	Select RFC2833 .
Signaling Digit Relay Mode	Select Off .
Voice Activity Detection	Select Off .
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>
Quality of Service	
Call Control QOS Byte	Enter 104 (equivalent to DSCP AF31).
RTP QOS Byte	Enter 184 (equivalent to DSCP EF).
Traps and Alarms	
E-mail Alarms Enabled	Select No .
SNMP Traps Enabled	Select No .

Step 12 Select **Apply Changes**.

Step 13 Select the **Gateway Capabilities** tab.

- Step 14** Depending on how you have planned to use the voice messaging ports, select the applicable setting for each port in the Telephony Port Capability column.

Table D-16 Gateway Capabilities Tab Settings

Telephony Port Capability Settings	Voice Messaging Port Usage
Calls-Only	The port will answer incoming calls only and will not dial out (for example, to set MWIs or send message notifications).
MWIs-Only	The port will dial out only (for example, to set MWIs or send message notifications) and will not answer incoming calls.
Both	The port will answer incoming calls and will also dial out (for example, to set MWIs or send message notifications).



Caution In setting up the PIMG unit, do not send calls to 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 Send MWI Requests, do not send calls to it. Otherwise the integration will not function correctly.

If a port in Cisco Unity Connection is disabled, select **No** in the Telephony Port Enabled column for the corresponding port on this tab. Note that changing a setting in the Telephony Port Enabled column requires restarting the PIMG unit.

- Step 15** Select **Apply Changes**.
- Step 16** On the Configure menu, select **Serial Protocol**.
- Step 17** On the Serial Protocol page, enter the following settings.

Table D-17 Serial Protocol Page Settings

Field	Setting
Serial Mode	Select the applicable setting: <ul style="list-style-type: none"> • Master—Select this setting when this PIMG unit is connected to the data link serial cable from the phone system. There can be only one master PIMG unit in a phone system integration. • Slave—Select this setting when this PIMG unit is not connected to the data link serial cable from the phone system. There can be multiple slave PIMG units in a phone system integration.
Serial Interface Protocol	Select the serial protocol that your phone system uses: <ul style="list-style-type: none"> • SMDI • MCI • MD-110
Cpid Len	Select the applicable setting. Typically, the settings are 7 or 10.

Table D-17 Serial Protocol Page Settings (continued)

Field	Setting
Cpid Padding String	Enter the applicable string or leave this field blank. Typically, the setting is one of the following: <ul style="list-style-type: none"> A string of zeros, where the number of zeros matches the setting of the Cpid Len field. A prefix that is provided by the Centrex service.
Voice Mail Port Len	If the setting of the Serial Interface Protocol field is MD-110, enter 2 . Otherwise, accept the default of 7 .
System Number	Enter the applicable setting. Typically, the setting is 1 .
MWI Response Timeout	Enter 2000 .
IP Address of Serial Server	If the PIMG unit is the master, leave this field blank. If the PIMG unit is a slave, enter the IP address of the master PIMG unit (the PIMG unit that is connected to the data link serial cable from the phone system).
Serial Cpid Expiration	Enter 2000 .
Logical Extension Number	If the setting of the Serial Interface Protocol field is MCI or MD-110, enter the extension number for each port on the PIMG unit. If the setting of the Serial Interface Protocol field is SMDI, enter the logical port number. Typically, the setting is 1 for port 1, 2 for port 2, and so on beginning with the master PIMG unit and continuing through each of the slave PIMG units.

Step 18 Select **Apply Changes**.

Step 19 On the Configure menu, select **SIP**.

Step 20 On the SIP page, enter the following settings.

Table D-18 SIP Page Settings

Field	Setting
Host and Domain Name	Enter the domain name of the PIMG unit. This setting must match the name of the port group in Cisco Unity Connection Administration that has the voice messaging ports connecting to the PIMG unit.
Server Port	Enter 5060 .
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 .

Table D-18 SIP Page Settings (continued)

Field	Setting
T1 Time	Enter 400 .
T2 Time	Enter 3000 .

- Step 21** Select **Apply Changes**.
- Step 22** On the Configure menu, select **IP**.
- Step 23** On the IP page, enter the following settings.

Table D-19 IP Page Settings


Field	Setting
Client IP Address	Enter the new IP address you want to use for the PIMG 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 PIMG units will use.
BOOTP Enabled	Select No .

- Step 24** Select **Apply Changes**.
- Step 25** On the Configure menu, select **Tones**.
- Step 26** On the Tones page, select the **Learn** tab.



Caution Destination addresses cannot be duplicated in the same session. Otherwise, the process for learning tones will not succeed. If you do not have enough available phones to learn all the tones at one time, you can run multiple sessions to learn tones individually by checking or unchecking the applicable Acquire Tone check boxes.

- Step 27** On the Tones page, for the Dialtone event, confirm that the Acquire Tone check box is checked and leave the Destination Address field blank.
- Step 28** On the Tones page, for the Busy Tone event, confirm that the Acquire Tone check box is checked 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 29** On the Tones page, in the Destination Address field for Busy Tone, enter the extension that you dialed in [Step 28c](#). from the third phone.

- Step 30** On the Tones page, for the Error/Reorder Tone event, confirm that the Acquire Tone check box is checked 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 31** On the Tones page, in the Destination Address field for Error/Reorder Tone, enter the extension that you dialed in [Step 30a](#).
- Step 32** On the Tones page, for the Ringback Tone event, confirm that the Acquire Tone check box is checked 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 33** On the Tones page, in the Destination Address field for Ringback Tone, enter the extension that you dialed in [Step 32a](#).
- Step 34** Select **Learn**.
-  **Note** When running learn tones, the PIMG unit will restart after learning the first tone. For details, see the caveat [CSCsh53791](#).
- Step 35** When the process is complete, check the check box for each newly learned tone and select **Apply**.
- Step 36** Hang up the phones that you used in [Step 28](#).
- Step 37** On the Configure menu, select **Restart**.
- Step 38** On the Restart page, select **Restart Unit Now**.
- Step 39** When the PIMG unit has restarted, in the View menu, select **Refresh**.
- Step 40** Repeat [Step 1](#) through [Step 39](#) on all remaining PIMG units.

Digital Mitel PIMG Settings (Firmware Version 5.x)

To Set Up the Digital Mitel PIMG Units

- Step 1** On a Windows workstation, sign in to a PIMG unit.
- Step 2** On the Configure menu, select **System**.
- Step 3** On the System page, enter the following settings.

Table D-20 System Page Settings

Field	Setting
Operating Mode	Select SIP .

Table D-20 System Page Settings (continued)

Field	Setting
PBX Type	(This setting does not apply.)
PCM Coding	Select uLaw .

Step 4 Select **Apply Changes**.

Step 5 On the Configure menu, select **Gateway**.

Step 6 On the Gateway page, select the **Gateway Routing** tab.

Step 7 On the Gateway Routing tab, Cisco Unity Connection without a Connection cluster, skip to [Step 8](#). If Cisco Unity Connection has a Connection cluster configured, do the following substeps:

a. In the Fault Tolerance Enabled field, select **Yes**.

b. In the Load Balancing Enabled field, select **No**.

Step 8 Under VoIP Endpoint ID, enter the following settings.



Note To add endpoints, select **Add New Endpoint**.

Table D-21 Gateway Routing Tab Settings

Count	VoIP Endpoint ID
1	<p>(Cisco Unity Connection without a Connection cluster) Enter the server name of the Cisco Unity Connection server.</p> <p>(Cisco Unity Connection with a Connection cluster configured) Enter the server name of the subscriber Cisco Unity Connection server.</p>
2	<p>(Cisco Unity Connection without a Connection cluster) Enter the server name of the Cisco Unity Connection server.</p> <p>(Cisco Unity Connection with a Connection cluster configured) Enter the server name of the publisher Cisco Unity Connection server.</p>

Step 9 Select **Apply Changes**.



Step 10 Select the **Gateway Advanced** tab.

Step 11 On the Gateway Advanced tab, enter the following settings.

Table D-22 Gateway Advanced Tab Settings

Field	Settings
Call Connect Mode	Select OnAnswer .
Destination for Unroutable PBX Calls	Enter the extension of an attendant who will receive calls to Cisco Unity Connection that are unanswered.
Minimum Call Party Delay (msecs)	Enter 500 .
Turn MWI On FAC	Enter the code that turns MWIs on.
Turn MWI Off FAC	Enter the code that turns MWIs off.

Table D-22 Gateway Advanced Tab Settings (continued)

Field	Settings
Wait for Ringback/Connect on Blind Transfer	Select Yes .
Hunt Group Extension	Enter the pilot number of the Cisco Unity Connection voice messaging ports.
Audio Compression	Select the preferred codec for audio compression: <ul style="list-style-type: none"> • G.711 • G.729AB
Signaling Digit Relay Mode	Select Off .
Voice Activity Detection	Select Off .
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: 5px; margin-top: 10px;">  Caution Failure to use the correct setting will result in recorded messages containing nothing but silence. </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: 5px; margin-top: 10px;">  Caution Failure to use the correct setting will result in recorded messages containing nothing but silence. </div>
Call Control QOS Byte	Enter 104 (equivalent to DSCP AF31).
RTP QOS Byte	Enter 184 (equivalent to DSCP EF).

Step 12 Select **Apply Changes**.

Step 13 Select the **Gateway Capabilities** tab.

Step 14 Depending on how you have planned to use the voice messaging ports, select the applicable setting for each port in the Telephony Port Capability column.

Table D-23 Gateway Capabilities Tab Settings

Telephony Port Capability Settings	Voice Messaging Port Usage
Calls-Only	The port will answer incoming calls only and will not dial out (for example, to set MWIs or send message notifications).
MWIs-Only	The port will dial out only (for example, to set MWIs or send message notifications) and will not answer incoming calls.
Both	The port will answer incoming calls and will also dial out (for example, to set MWIs or send message notifications).



Caution In setting up the PIMG unit, do not send calls to 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 Send MWI Requests, do not send calls to it. Otherwise the integration will not function correctly.

If a port in Cisco Unity Connection is disabled, select **No** in the Telephony Port Enabled column for the corresponding port on this tab. Note that changing a setting in the Telephony Port Enabled column requires restarting the PIMG unit.

- Step 15** Select **Apply Changes**.
- Step 16** On the Configure menu, select **SIP**.
- Step 17** On the SIP page, enter the following settings.

Table D-24 SIP Page Settings

Field	Setting
Host and Domain Name	Enter the domain name of the PIMG unit.
Server Port	Enter 5060 .
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 .
T1 Time	Enter 400 .
T2 Time	Enter 3000 .

- Step 18** Select **Apply Changes**.
- Step 19** On the Configure menu, select **IP**.
- Step 20** On the IP page, enter the following settings.

Table D-25 IP Page Settings

Field	Setting
Client IP Address	Enter the new IP address you want to use for the PIMG 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 PIMG units will use.
BOOTP Enabled	Select No .

- Step 21** Select **Apply Changes**.
- Step 22** On the Configure menu, select **Tones**.
- Step 23** On the Tones page, select the **Learn** tab.



Caution Destination addresses cannot be duplicated in the same session. Otherwise, the process for learning tones will not succeed. If you do not have enough available phones to learn all the tones at one time, you can run multiple sessions to learn tones individually by checking or unchecking the applicable Acquire Tone check boxes.

- Step 24** On the Tones page, for the Dialtone event, confirm that the Acquire Tone check box is checked and leave the Destination Address field blank.
- Step 25** On the Tones page, for the Busy Tone event, confirm that the Acquire Tone check box is checked 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 26** On the Tones page, in the Destination Address field for Busy Tone, enter the extension that you dialed in [Step 25c](#). from the third phone.
- Step 27** On the Tones page, for the Error/Reorder Tone event, confirm that the Acquire Tone check box is checked 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 28** On the Tones page, in the Destination Address field for Error/Reorder Tone, enter the extension that you dialed in [Step 27a](#).
- Step 29** On the Tones page, for the Ringback Tone event, confirm that the Acquire Tone check box is checked 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 30** On the Tones page, in the Destination Address field for Ringback Tone, enter the extension that you dialed in [Step 29a](#).
- Step 31** Select **Learn**.



Note When running learn tones, the PIMG unit will restart after learning the first tone. For details, see the caveat [CSCsh53791](#).

- Step 32** When the process is complete, check the check box for each newly learned tone and select **Apply**.
- Step 33** Hang up the phones that you used in [Step 25](#).
- Step 34** On the Configure menu, select **Restart**.

- Step 35** On the Restart page, select **Restart Unit Now**.
- Step 36** When the PIMG unit has restarted, in the View menu, select **Refresh**.
- Step 37** Repeat [Step 1](#) through [Step 36](#) on all remaining PIMG units.

Digital Rolm PIMG Settings (Firmware Version 5.x)

To Set Up the Digital Rolm PIMG Units

- Step 1** On a Windows workstation, sign in to a PIMG unit.
- Step 2** On the Configure menu, select **System**.
- Step 3** On the System page, enter the following settings.

Table D-26 System Page Settings

Field	Setting
Operating Mode	Select SIP .
PBX Type	Depending on your phone system, select one of the following: <ul style="list-style-type: none"> • Rolm_9751_SW9005 • Rolm_9751_SW9006
PCM Coding	Select uLaw .

- Step 4** Select **Apply Changes**.
- Step 5** On the Configure menu, select **Gateway**.
- Step 6** On the Gateway page, select the **Gateway Routing** tab.
- Step 7** On the Gateway Routing tab, Cisco Unity Connection without a Connection cluster, skip to [Step 8](#). If Cisco Unity Connection has a Connection cluster configured, do the following substeps:
 - In the Fault Tolerance Enabled field, select **Yes**.
 - In the Load Balancing Enabled field, select **No**.
- Step 8** Under VoIP Endpoint ID, enter the following settings.



Note To add endpoints, select **Add New Endpoint**.

Table D-27 Gateway Routing Tab Settings

Count	VoIP Endpoint ID
1	<p>(Cisco Unity Connection without a Connection cluster) Enter the server name of the Cisco Unity Connection server.</p> <p>(Cisco Unity Connection with a Connection cluster configured) Enter the server name of the subscriber Cisco Unity Connection server.</p>
2	<p>(Cisco Unity Connection without a Connection cluster) Enter the server name of the Cisco Unity Connection server.</p> <p>(Cisco Unity Connection with a Connection cluster configured) Enter the server name of the publisher Cisco Unity Connection server.</p>

Step 9 Select **Apply Changes**.

Step 10 Select the **Gateway Advanced** tab.

Step 11 On the Gateway Advanced tab, enter the following settings.

Table D-28 Gateway Advanced Tab Settings



Field	Settings
Call Connect Mode	Select OnAnswer .
Destination for Unroutable PBX Calls	Enter the extension of an attendant who will receive calls to Cisco Unity Connection that are unanswered.
Minimum Call Party Delay (msecs)	Enter 500 .
Turn MWI On FAC	Leave this field blank.
Turn MWI Off FAC	Leave this field blank.
Wait for Ringback/Connect on Blind Transfer	Select Yes .
Hunt Group Extension	Enter the pilot number of the Cisco Unity Connection voice messaging ports.
Audio Compression	Select the preferred codec for audio compression: <ul style="list-style-type: none"> • G.711 • G.729AB
Signaling Digit Relay Mode	Select Off .
Voice Activity Detection	Select Off .
Frame Size	Select the applicable setting: <ul style="list-style-type: none"> • G.711—20 • G.729AB—10 <div style="text-align: center;">  </div> <p>Caution Failure to use the correct setting will result in recorded messages containing nothing but silence.</p>

Table D-28 Gateway Advanced Tab Settings (continued)

Field	Settings
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;">  Caution Failure to use the correct setting will result in recorded messages containing nothing but silence. </div>
Call Control QOS Byte	Enter 104 (equivalent to DSCP AF31).
RTP QOS Byte	Enter 184 (equivalent to DSCP EF).


Step 12 Select **Apply Changes**.

Step 13 Select the **Gateway Capabilities** tab.

Step 14 Depending on how you have planned to use the voice messaging ports, select the applicable setting for each port in the Telephony Port Capability column.

Table D-29 Gateway Capabilities Tab Settings

Telephony Port Capability Settings	Voice Messaging Port Usage
Calls-Only	The port will answer incoming calls only and will not dial out (for example, to set MWIs or send message notifications).
MWIs-Only	The port will dial out only (for example, to set MWIs or send message notifications) and will not answer incoming calls.
Both	The port will answer incoming calls and will also dial out (for example, to set MWIs or send message notifications).



Caution In setting up the PIMG unit, do not send calls to 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 Send MWI Requests, do not send calls to it. Otherwise the integration will not function correctly.

If a port in Cisco Unity Connection is disabled, select **No** in the Telephony Port Enabled column for the corresponding port on this tab. Note that changing a setting in the Telephony Port Enabled column requires restarting the PIMG unit.

Step 15 Select **Apply Changes**.

Step 16 On the Configure menu, select **SIP**.

Step 17 On the SIP page, enter the following settings.

Table D-30 SIP Page Settings

Field	Setting
Host and Domain Name	Enter the domain name of the PIMG unit.
Server Port	Enter 5060 .
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 .
T1 Time	Enter 400 .
T2 Time	Enter 3000 .

- Step 18** Select **Apply Changes**.
- Step 19** On the Configure menu, select **IP**.
- Step 20** On the IP page, enter the following settings.

Table D-31 IP Page Settings


Field	Setting
Client IP Address	Enter the new IP address you want to use for the PIMG 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 PIMG units will use.
BOOTP Enabled	Select No .

- Step 21** Select **Apply Changes**.
- Step 22** On the Configure menu, select **Tones**.
- Step 23** On the Tones page, select the **Learn** tab.



Caution Destination addresses cannot be duplicated in the same session. Otherwise, the process for learning tones will not succeed. If you do not have enough available phones to learn all the tones at one time, you can run multiple sessions to learn tones individually by checking or unchecking the applicable Acquire Tone check boxes.

- Step 24** On the Tones page, for the Dialtone event, confirm that the Acquire Tone check box is checked and leave the Destination Address field blank.

- Step 25** On the Tones page, for the Busy Tone event, confirm that the Acquire Tone check box is checked 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 26** On the Tones page, in the Destination Address field for Busy Tone, enter the extension that you dialed in [Step 25c](#). from the third phone.
- Step 27** On the Tones page, for the Error/Reorder Tone event, confirm that the Acquire Tone check box is checked 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 28** On the Tones page, in the Destination Address field for Error/Reorder Tone, enter the extension that you dialed in [Step 27a](#).
- Step 29** On the Tones page, for the Ringback Tone event, confirm that the Acquire Tone check box is checked 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 30** On the Tones page, in the Destination Address field for Ringback Tone, enter the extension that you dialed in [Step 29a](#).
- Step 31** Select **Learn**.
-  **Note** When running learn tones, the PIMG unit will restart after learning the first tone. For details, see the caveat [CSCsh53791](#).
-
- Step 32** When the process is complete, check the check box for each newly learned tone and select **Apply**.
- Step 33** Hang up the phones that you used in [Step 25](#).
- Step 34** On the Configure menu, select **Restart**.
- Step 35** On the Restart page, select **Restart Unit Now**.
- Step 36** When the PIMG unit has restarted, in the View menu, select **Refresh**.
- Step 37** Repeat [Step 1](#) through [Step 36](#) on all remaining PIMG units.
-