



## Audio Quality

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### About Audio Quality Problems

Audio quality problems can manifest themselves in a variety of ways, and can be difficult to diagnose and correct. For example, subscribers may report volume differences between messages and system prompts, or report that messages are distorted. Audio quality symptoms may not be present for every subscriber, or consistently appear on every message or every system prompt.

The entire device topology can affect audio quality, both within and outside of the control of Cisco Unity. Cisco Unity-controlled features include automatic gain control (AGC), the Cisco Unity-CM TSP wave gain, and the audio codec chosen for message storage. Cisco CallManager controls the region setting for the audio codec. Finally, the Cisco gateway gain and attenuation settings can also affect audio quality.

### Audio Quality Problems in Cisco Unity Version 3.1(x) and later

The most common symptom of audio quality problems in Cisco Unity version 3.1(x) is when the volume of greetings and voice names is higher or lower than the volume of Cisco Unity prompts.

See [Table 6-1](#) for basic corrective action to level all WAV files on the Cisco Unity server to the same value, and then to adjust the playback level if needed.

**Table 6-1 Basic Audio Quality Troubleshooting for Cisco Unity Version 3.1(x) Systems**

Symptom	General Circumstances	Corrective Action
The volume of greetings and voice names is higher or lower than the volume of Cisco Unity prompts.	Only certain greetings and voice names may be affected on a version 3.1(1) or later system, and/or an upgrade to version 3.1(3) or later was recently performed.	<ol style="list-style-type: none"> <li>3. Confirm that the Cisco Unity-CM TSP wave gain playback and record settings are both set to 0.</li> <li>4. Run the Set Volume Level utility to bring pre-upgrade greetings and voice names to the correct dB levels.</li> <li>5. Check and adjust the Cisco Unity AGC settings, if necessary (set to -26 dB default value).</li> <li>6. Check and adjust the Cisco Unity-CM wave gain playback setting, if necessary.</li> </ol> <p>For detailed instructions, see the “Set Volume Level Utility” section on page 6-2.</p> <p>For upgrades from 3.1(2) to 3.1(3) or to 3.1(4), see also <a href="http://www.cisco.com/warp/public/788/AVVID/white_noise.html">http://www.cisco.com/warp/public/788/AVVID/white_noise.html</a>.</p>

## Set Volume Level Utility

The Set Volume Level utility allows you to level all WAV files on the Cisco Unity server to the same value, and to adjust the playback level, if needed.

Because automatic gain control is enabled by default in Cisco Unity version 3.1(2c) and later, systems upgraded to 3.1(2c) and later may experience a problem where the existing greeting and name recordings sound louder than new greetings and names recorded after the upgrade.

In Cisco Unity version 3.1(4), a new registry setting, AGCminimumThreshold, was added to control the minimum dB level of an incoming recording that Cisco Unity attempts to adjust. The setting prevents silence in a message and background hiss from being adjusted. The AGCminimumThreshold has a default setting of -45 dB and an allowable range of -35 dB to -55 dB.

To maximize success in resolving or avoiding volume problems, we recommend that you first upgrade to Cisco Unity version 3.1(4) or later, then use the Set Volume utility to match the existing greeting and name recordings to the gain levels of Cisco Unity after the upgrade.

Confirm that you have the latest version of the Set Volume utility by doing the procedure, [To download and install the latest version of the Set Volume utility, page 6-2](#).

The procedure, [To adjust greeting and name recordings by using the Set Volume utility, page 6-3](#), levels all WAV files on the Cisco Unity server to the same value, and provides instructions for adjusting the playback level, if necessary.



### Note

A typical backup of the Cisco Unity server does not back up the registry.

### To download and install the latest version of the Set Volume utility

- Step 1** Go to the Software Center website at <http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml>.
- Step 2** Under “Cisco Unity Software,” click **Cisco Unity Utilities**.

- Step 3** Compare the version of the file **SetVolume.zip** in the table to the Set Volume utility version on the Cisco Unity system.
- Step 4** If the version in the table is later than the version currently installed on the system, download the file **SetVolume.zip**.
- Step 5** Specify a directory to which the files will be downloaded.
- Step 6** In Winzip, double-click **Setup.exe**.
- Step 7** Click **OK**.
- Step 8** Click **Change Directory**, and browse to the directory CommServer\Utilities\VolumeAdjust.
- Step 9** Follow the on-screen prompts to complete the installation.

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#### To adjust greeting and name recordings by using the Set Volume utility

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- Step 1** Exit the Cisco Unity Administrator.
- Step 2** On the Cisco Unity server desktop, double-click the **Cisco Unity Tools Depot** icon.
- Step 3** If you do not have a Cisco CallManager integration, skip to step [Step 5](#).  
If you have a Cisco CallManager integration, and the Cisco CallManager region is set to use the G.711 codec, in the left pane, under Administrative Tools, double-click **Wave Gain**.
- Step 4** Confirm that both Record Gain and Playback Gain are set to **0**.
- Step 5** In the left pane of the Tools Depot window, go to Audio Management Tools, and double-click **Set Volume**.
- Step 6** In the Set Greetings and Voice Names window, click **Select All**.
- Step 7** Confirm that the **Save Original Files** check box is checked, then enter the location to which the backup copy of the original recorded names and greetings files will be saved.
- Step 8** In the Options section, verify the following values. Note that only Cisco Unity versions 3.1(4) and later have the Min. dB Threshold registry setting referred to in the following table.

<b>New Target dB</b>	-26
<b>Sample Size</b>	8000
<b>Max dB Adjustment</b>	5
<b>Min. dB Threshold</b>	-45

- Step 9** Confirm that the **Save Above Volume Options** check box is checked. Note that setting New Target dB to a value other than zero turns on automatic gain control.
- Step 10** Click **Set Volume Level**.
- Step 11** When “Done” appears in the Set Volume window, all existing greeting and name recordings have been adjusted to the New Target dB level. Click **OK**, and then click **Exit**.
- Step 12** If you do not have a Cisco CallManager integration, you have completed all necessary steps in this procedure.  
If you have a Cisco CallManager integration, and the Cisco CallManager region is set to use the G.711 codec, start the Cisco Unity Administrator.

- Step 13** Go to any page in the Cisco Unity Administrator that contains a Media Master control bar, and verify that the phone is selected as the playback device.



**Note** In order to use the phone as a recording and playback device, Cisco Unity must have at least one port designated TRAP Connection per session on the System > Ports page. Refer to the “Voice Messaging Port Settings” section in the *Cisco Unity System Administration Guide* for more information. This guide is available at [http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products\\_administration\\_guide\\_books\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_administration_guide_books_list.html).

- Step 14** Click **Play** on the Media Master control bar to listen to a recording (for example, a subscriber greeting) over the phone.
- If the volume of the recording is acceptable, you have completed all necessary steps in this procedure.
- If the volume of the recording is too quiet, continue with [Step 15](#).
- Step 15** In the left pane of the Tools Depot window, under Audio Management Tools, double-click **Wave Gain**.
- Step 16** Increase the **Playback Gain** value by one or two dB. Listen to the volume of a recording.
- If the volume of the recording is acceptable, note the **Playback Gain** value and continue with [Step 17](#).
- If the volume of the recording is still too quiet, repeat this step.
- Step 17** In the left pane of the Tools Depot window, under Administrative Tools, double-click **Advanced Settings Tool**.
- Step 18** In the Unity Settings pane, click **Set Wave Gain dB Adjustment for Playback**.
- Step 19** Enter the new value determined in [Step 16](#), and click **Set**.
- Step 20** When prompted, click **OK**. You do not need to restart the Cisco Unity server to enable the registry change.
- Step 21** Click **Exit**.

## Advanced Audio Quality Troubleshooting in Cisco Unity Version 3.(x) and Later

See [Table 6-2](#) for advanced corrective actions and links to other troubleshooting procedures and information for these symptoms:

- Messages and/or Cisco Unity prompts sound distorted.
- A hissing sound is heard when there is no audio from Cisco Unity.
- Message playback volume is higher or lower than the volume of Cisco Unity prompts, in special cases.

For more information, refer to *White Paper: Audio Codecs and Cisco Unity*, available on Cisco.com at [http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod\\_technical\\_reference\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod_technical_reference_list.html).

Note that unless otherwise specified, all procedures apply to Cisco Unity version 3.1(4) and later.

Table 6-2 Advanced Audio Quality Troubleshooting

Symptom	General Circumstances	Corrective Action
Messages and/or Cisco Unity prompts sound distorted.	You are using the G.729a codec for message storage and retrieval.	<ol style="list-style-type: none"> <li>1. Confirm that Cisco Unity is capable of receiving G.729a streams. See the “Cisco Unity Is G.729a Capable” section on page 6-6.</li> <li>2. Confirm that the G.729a codec is being used for message recording on Cisco Unity. See the “Set Record Format” section on page 6-6.</li> <li>3. Confirm that the Cisco CallManager region is set to G.729a. Refer to the appropriate <i>Cisco CallManager Administration Guide</i>, available on Cisco.com at <a href="http://www.cisco.com/univercd/cc/td/doc/product/voice/c_allmg/index.htm">http://www.cisco.com/univercd/cc/td/doc/product/voice/c_allmg/index.htm</a>.</li> <li>4. Confirm that the Cisco Unity G.729a prompts are installed. Refer to the <i>CiscoUnity3.1.G729aPrompts.Readme</i>, available on the Software Center download website at <a href="http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml">http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml</a>.</li> </ol>
	You are using the G.711 codec for message storage and retrieval.	Confirm that the Cisco CallManager region is set to G.711. Refer to the appropriate <i>Cisco CallManager Administration Guide</i> , available on Cisco.com at <a href="http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm">http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm</a> .
Hissing noise is heard when there is no audio from Cisco Unity, such as between system prompts or during transfers.	You are using IP phones.	<p>Check the Cisco Unity comfort noise registry setting. See the procedure, <a href="#">To view and adjust the Cisco Unity comfort noise registry setting</a>, page 6-12.</p> <p>For upgrades from 3.1(2) to 3.1(3) or to 3.1(4), see also <a href="http://www.cisco.com/warp/public/788/AVVID/white_noise.html">http://www.cisco.com/warp/public/788/AVVID/white_noise.html</a>.</p>
Message playback volume is higher or lower than the volume of Cisco Unity prompts, in special cases.	Only outside caller messages are affected on a Cisco Unity system version 3.1(2b) and earlier.	<ol style="list-style-type: none"> <li>1. Check the Cisco gateway gain and attenuation levels. Refer to the guide for your gateway, available on Cisco.com at <a href="http://www.cisco.com/univercd/cc/td/doc/product/voice/c_access/index.htm">http://www.cisco.com/univercd/cc/td/doc/product/voice/c_access/index.htm</a>.</li> <li>2. Check the Cisco Unity-CM TSP wave gain playback and record settings. See the “Cisco Unity-CM TSP Wave Gain Utility” section on page 6-8.</li> </ol>
	Both subscriber and outside caller messages are affected system-wide on a Cisco Unity system version 3.1(2b) and earlier.	Check the Cisco Unity-CM TSP wave gain playback and record settings. See the “Cisco Unity-CM TSP Wave Gain Utility” section on page 6-8.

## Cisco Unity Is G.729a Capable

When the registry setting HKEY\_LOCAL\_MACHINE\Software\Active Voice\AVSkinny\G729 Enabled is set to 1, it means that Cisco Unity is capable of receiving both G.729a streams and G.711 streams. It does not indicate that G.729a is in use for message storage. This is the default setting for Cisco Unity version 3.1(x) systems. Because the G.729a codec is installed automatically with version 4.0(1) and later, this registry setting is no longer needed.

### To confirm that Cisco Unity is capable of receiving G.729a streams (version 3.(x) only)

**Step 1** Start Regedit.



#### Caution

Changing the wrong registry key or entering an incorrect value can cause the server to malfunction. Before you edit the registry, confirm that you know how to restore it if a problem occurs. (Refer to the “Restoring” topics in Registry Editor Help.) Note that a typical backup of the Cisco Unity server does not back up the registry. If you have any questions about changing registry key settings, contact Cisco TAC.

**Step 2** If you do not have a current backup of the registry, click **Registry > Export Registry File**, and save the registry settings to a file, then close Regedit.

**Step 3** Go to the registry key in HKEY\_LOCAL\_MACHINE\Software\Active Voice\AVSkinny\G729 Enabled.

**Step 4** Confirm that the Value is set to 1.

**Step 5** If you changed the value in [Step 4](#), click **OK**. You do not need to restart the Cisco Unity server to enable the registry change.

## Set Record Format

The Set Record Format utility changes the codec used for all recordings on Cisco Unity. It is not possible to select user or port-specific recording formats. Changes to the record format apply only to recordings made after the change takes place. The utility does not convert any existing messages or greetings to the new codec.

If a Cisco Unity system has been running for a while and the codec is then changed, Cisco Unity may have greetings, voice names, prompts and messages stored in more than one format. Cisco Unity can transcode between formats; however, mixed message formats on very busy version 3.(x) systems have been known to cause the problem described in caveat CSCae08069. For more information, and for a workaround for the problem, refer to [http://www.cisco.com/warp/public/788/AVVID/reorder\\_tone\\_after\\_startup.htm](http://www.cisco.com/warp/public/788/AVVID/reorder_tone_after_startup.htm). Contact Cisco TAC before installing the workaround.

To view codec information for greetings, voice names, and prompts, do the procedure, [To view codec information for greetings, voice names, and system prompts, page 6-7](#).

To change the codec used for all Cisco Unity recordings (messages, greetings, and voice names) do the procedure, [A typical backup of the Cisco Unity server does not back up the registry. To change the Cisco Unity recording codec, page 6-7](#).

For information on choosing and implementing codecs, refer to *White Paper: Audio Codecs and Cisco Unity*, available on Cisco.com at [http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod\\_technical\\_reference\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod_technical_reference_list.html).

#### To view codec information for greetings, voice names, and system prompts

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- Step 1** On the Cisco Unity desktop, double-click the **Cisco Unity Tools Depot** icon.
  - Step 2** In the left pane of the Tools Depot window, under Audio Management Tools, double-click **Codec Checker**.
  - Step 3** To export the data to a CSV file, click **File**, then choose to export either greeting and voice name data or prompt data.
  - Step 4** Click **Exit**.
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#### A typical backup of the Cisco Unity server does not back up the registry. To change the Cisco Unity recording codec

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- Step 1** Exit the Cisco Unity software (right-click the Cisco Unity icon in the system tray, then click **Stop Cisco Unity**).
  - Step 2** To use the G.711 Mu-law or A-Law, G729a, or GSM 6.10 codec, skip to [Step 3](#).  
To use one of the optional Dialogic OKI ADPCM codecs:
    - a. Go to the Software Center website at <http://www.cisco.com/kobayashi/sw-center/sw-voice.shtml>. Click **Other Components** under Cisco Unity.
    - b. Click **CiscoUnityDialogicCodec.exe**, and download the file to the directory of your choice on the Cisco Unity server.
    - c. Unzip the **CiscoUnityDialogicCodec.exe** file to the directory of your choice.
    - d. Double-click **Avvox\_setup.exe**, and follow the on-screen prompts.To use the optional G.726 32 Kbps codec on a Cisco Unity version 4.0(1) or later system using VPIM with Microsoft Exchange:
    - a. Purchase license(s) from a vendor of your choice:
    - b. Follow the vendor installation instructions, then continue with [Step 3](#).
  - Step 3** On the Cisco Unity desktop, double-click the **Cisco Unity Tools Depot** icon.
  - Step 4** In the left pane, under Audio Management Tools, double-click **Set Record Format**.
  - Step 5** In the Format list, select a supported codec, and click **OK**.
  - Step 6** Restart the Cisco Unity server.
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#### To change the recording format for existing greetings and voice names

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- Step 1** On the Cisco Unity desktop, double-click the **Cisco Unity Tools Depot** icon.
- Step 2** In the left pane, under Audio Management Tools, double-click **Set Wav Format**.
- Step 3** Select the greetings and voice names to adjust.

- Step 4** Under Backup Original Voice Names and Greetings, check the check box, and type the location to save the original files.
- Step 5** From the drop-down menu, select the new Wav format.
- Step 6** Click **Set Wav Format**.
- Step 7** Click **OK**, then click **Exit**.
- Step 8** Restart the Cisco Unity server.

## Cisco Unity-CM TSP Wave Gain Utility

The registry keys shown in [Table 6-3](#) determine how the Cisco Unity-CM TSP adjusts record and playback volume for all recordings (messages, prompts, voice names, and greetings) for IP devices in a Cisco CallManager region that contains Cisco Unity and is set to use the G.711 codec.

These registry settings are only applicable with a Cisco CallManager integration. If you have a PBX integration that uses Dialogic voice cards, see the [“Dialogic Voice Card Automatic Gain Control and Registry Settings”](#) section on page 6-11.

Use the Wave Gain utility to adjust and test the WaveDBGainPlayback and WaveDBGainRecord levels. The record and playback settings determined by using the Wave Gain utility must be manually entered into the registry by using either the Advanced Settings Tool or Regedit.

**Table 6-3 Wave Gain Utility Registry Keys**

Key Name	Purpose	Recommended Setting
WaveDBGainPlayback	Controls the wave driver boost or the reduction of system-wide playback levels for all recordings.	0—When Cisco Unity automatic gain control (AGC) is enabled. This value may be changed if necessary after adjustments are made to the AGC setting. 0xffffffff6 (the default)—version 3.0(x) and earlier systems where Cisco Unity AGC is not present.
WaveDBGainRecord	Controls the wave driver boost or the reduction of recordings system-wide.	0—When AGC is enabled. 5 (the default)— version 3.1(2b) and earlier systems where AGC is not present.

For Cisco Unity versions 3.1(2c) and later, set both the Cisco Unity-CM TSP Wave Gain record and playback levels to 0 to begin the volume adjustment process. If you have not already done so, do the procedure, [To adjust greeting and name recordings by using the Set Volume utility, page 6-3](#).

If Cisco Unity automatic gain control is not present (version 3.1(2b) and earlier systems only), then the Cisco Unity-CM TSP Wave Gain playback level setting alone can be adjusted as needed for best sound quality, one or two dB at a time, by doing the following procedure.

### To determine the optimum Cisco Unity-CM TSP wave gain settings (Cisco Unity version 3.1(2b) and earlier only)

- Step 1** Start Regedit.

**Caution**

Changing the wrong registry key or entering an incorrect value can cause the server to malfunction. Before you edit the registry, confirm that you know how to restore it if a problem occurs. (Refer to the “Restoring” topics in Registry Editor Help.) Note that a typical backup of the Cisco Unity server does not back up the registry. If you have any questions about changing registry key settings, contact Cisco TAC.

- Step 2** If you do not have a current backup of the registry, click **Registry > Export Registry File**, and save the registry settings to a file, then close Regedit.
- Step 3** Browse to the CommServer\Utilities directory.
- Step 4** Double-click **Wave Gain**.
- Step 5** To increase the playback volume, enter a positive number in the Playback Gain field. To decrease the playback volume, enter a negative number in the field. Do not adjust the value by more than one or two dB.
- Step 6** Confirm that Record Gain is set to 0. Do not change this setting to a value other than 0.
- Step 7** Leave a message for a test subscriber.
- Step 8** Log on to Cisco Unity and listen to the test subscriber message.
- Step 9** If you are not satisfied with the volume of the test subscriber message, repeat [Step 5](#) as necessary. When you are satisfied with the volume of the test subscriber message, write down the recording and playback volume settings, which you will enter into the registry in the procedure, [To update wave gain settings in the registry for Cisco Unity version 3.1\(2b\) and earlier](#), page 6-9.

**To update wave gain settings in the registry for Cisco Unity version 3.1(2b) and earlier****Note**

A typical backup of the Cisco Unity server does not back up the registry.

- Step 1** On the Cisco Unity server desktop, double-click the **Cisco Unity Tools Depot** icon.
- Step 2** In the left pane, under Administrative Tools, double-click **Advanced Settings Tool**.
- Step 3** In the Unity Settings pane, click the wave gain adjustment registry key to be edited.
- Step 4** Enter a new value, as recorded in [Step 9](#) of the procedure, [To determine the optimum Cisco Unity-CM TSP wave gain settings \(Cisco Unity version 3.1\(2b\) and earlier only\)](#), page 6-8, and then click **Set**.
- Step 5** When prompted, click **OK**.
- Step 6** Click **Exit**.
- Step 7** Restart the Cisco Unity server for the registry change to take effect.

# Automatic Gain Control

## Cisco Unity Automatic Gain Control and Registry Settings

Cisco Unity automatic gain control (AGC) gives subscribers consistent message playback levels through the normalization of recordings. AGC affects recordings only. It is on by default, is controlled by registry settings, and is applied to voice samples after they have passed through all external hardware.

AGC does not improve the quality of recordings; it only addresses volume issues. For example, it cannot improve garbled incoming messages.

Because automatic gain control is enabled by default in Cisco Unity version 3.1(2c) and later, systems upgraded to 3.1(2c) and later may experience a problem where the existing greeting and name recordings sound louder than new greetings and names recorded after the upgrade. To prevent or resolve this problem after an upgrade, use the Set Volume utility to match the existing greeting and name recordings to the gain levels of Cisco Unity after the upgrade. The default values for the registry settings should be used for all Cisco Unity version 3.1(2c) and later upgrades. If you have not already done so, do the procedures in the [“Set Volume Level Utility” section on page 6-2](#).

If you are using Dialogic voice cards, Cisco Unity AGC should be turned on, and the recommended settings for AGC in [Table 6-4](#) are applicable.

The following registry keys determine how Cisco Unity AGC normalizes recordings.

**Table 6-4 Automatic Gain Control Registry Keys**

Key Name	Purpose	Recommended Setting
AGCtargetDB	Target root mean square (RMS) power to which all recordings are normalized. The setting is system-wide.	–26 dB. The accepted range is –18dB to –30dB. A setting of 0 (zero) disables AGC.
AGCsampleSize	Buffer sample size used to calculate the average RMS power level.	8000.
AGCuseCompression	Determines if a sample is clipped when a gain adjustment is applied. A value of 1 will not clip the sample; 0 clips the sample to the minimum/maximum values.	1. (0 = clipped sample; disables compression).
AGCgainThreshold	Maximum dB gain (+/–) applied to a sample to bring it to the target dB level.	5 dB.
AGCminimumThreshold	Controls the minimum dB level of an incoming recording that Cisco Unity attempts to adjust. The setting prevents silence in a message and background hiss from being adjusted.	–45 dB. The accepted range is –35 dB to –55 dB.

### To disable Cisco Unity AGC

- Step 1** Exit the Cisco Unity Administrator.
- Step 2** On the Cisco Unity server desktop, double-click the **Cisco Unity Tools Depot** icon.
- Step 3** In the left pane of the Tools Depot window, go to Audio Management Tools, and double-click **Set Volume**.

- Step 4** In the Set Greetings and Voice Names window, click **Select All**.
  - Step 5** Confirm that the **Save Original Files** check box is checked, then enter the location to which the backup copy of the original recorded names and greetings files will be saved.
  - Step 6** In the Options section, set **New Target dB** to **0 (zero)**.
  - Step 7** Confirm that the **Save Above Volume Options** check box is checked. Note that setting New Target dB to a value other than zero turns on automatic gain control.
  - Step 8** Click **Set Volume Level**.
  - Step 9** When “Done” appears in the Set Volume window, all existing greeting and name recordings have been adjusted to the New Target dB level with AGC disabled.
  - Step 10** Click **OK**, and then click **Exit**.
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## Dialogic Voice Card Automatic Gain Control and Registry Settings

Dialogic voice cards adjust the volume of recorded messages by using their own on-board AGC. Adjusting the playback volume for all recordings on systems equipped with Dialogic voice cards is done by changing the Median Volume registry setting. This setting is also used in the case of a dual integration, when you want to change the output volume level on the PBX side without affecting the Cisco CallManager side.

Cisco Unity AGC should also be enabled on systems with Dialogic voice cards.

### To adjust the playback volume of recordings for Cisco Unity systems equipped with Dialogic voice cards

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- Step 1** Start Regedit.



#### Caution

Changing the wrong registry key or entering an incorrect value can cause the server to malfunction. Before you edit the registry, confirm that you know how to restore it if a problem occurs. (Refer to the “Restoring” topics in Registry Editor Help.) Note that a typical backup of the Cisco Unity server does not back up the registry. If you have any questions about changing registry key settings, contact Cisco TAC.

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- Step 2** If you do not have a current backup of the registry, click **Registry > Export Registry File**, and save the registry settings to a file.
- Step 3** Using Regedit, go to the registry key in HKEY\_LOCAL\_MACHINE\Software\Active Voice\Miu\1.0\Initialization\ServiceProvider<n>\MedianVolume, where <n> is either 0 for a single switch, or 1 for a dual switch configuration. Expand the setting appropriate to your configuration to select the PBX switch. Do not select the Cisco CallManager switch.
- Step 4** In the Base window, click **Decimal**.  
  
The default setting for analog voice cards is 50, and the accepted range is between 0 and 100. Note that this setting is not in decibels, and that the numerical values are not linear. For example, a setting of 100 is louder, but not twice as loud as 50. Make a small adjustment to this setting of no more than 10 units louder or quieter.
- Step 5** To adjust the playback volume for Text-to-Speech recordings (TTS), go to the Median TTS Volume key.
- Step 6** In the Base window, click **Decimal**.

The default setting for analog voice cards is 50, and the accepted range is between 0 and 100. Like the Median Volume key, this setting is not in decibels, and the adjustments are not linear. Make a small adjustment to this setting of no more than 10 units louder or quieter.

- Step 7** Restart the Cisco Unity server.
- Step 8** Test the playback levels of several recordings. If the volume levels are acceptable, you have completed all steps necessary in this procedure. If the volume levels are too high or too low, repeat [Step 3](#) through [Step 7](#), and retest until you are satisfied with the results.

## Comfort Noise

Comfort noise is low-level background noise generated on a IP device. Its purpose is to simulate the hiss produced in a circuit-switched connection, and it can be generated when there is no audio from Cisco Unity, for example, during a transfer or between system prompts.

Comfort noise is not sent over the network, and is audible only on the IP device that receives a comfort noise generation packet. Comfort noise generation packets are sent by Cisco Unity when it is integrated with Cisco CallManager, and when the `HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Avaudio\Parameters\ComfortNoise` registry setting is enabled.

The Cisco Unity ComfortNoise registry setting controls the ability of Cisco Unity to send comfort noise generation packets to an IP phone, or to a gateway that is enabled to receive and respond to comfort noise generation packets. This registry setting does not affect comfort noise generation on a call between two IP phones. Cisco Unity also does not respond to comfort noise generation packets sent by other devices. These packets are treated as silence at the wave driver level.

If subscribers hear an audible hissing noise when there is no audio from Cisco Unity, and if it is judged to be too loud a noise, confirm that the Cisco Unity comfort noise registry setting is enabled (set to a value other than zero), and then adjust the setting to a lower value as needed. The default value set during the Cisco Unity-CM TSP install is  $-50\text{dB}$ .



### Note

The registry setting for Cisco Unity comfort noise does not reflect the minus sign, so a registry setting of 50 is actually  $-50\text{dB}$ .

There will always be some amount of hissing noise between prompts. The Cisco Unity ComfortNoise registry setting only tells the IP phone or gateway how loud that hiss should be. A value of zero causes the IP phone or gateway to use its default hiss level.

### To view and adjust the Cisco Unity comfort noise registry setting

- Step 1** Start Regedit.



### Caution

Changing the wrong registry key or entering an incorrect value can cause the server to malfunction. Before you edit the registry, confirm that you know how to restore it if a problem occurs. (Refer to the “Restoring” topics in Registry Editor Help.) Note that a typical backup of the Cisco Unity server does not back up the registry. If you have any questions about changing registry key settings, contact Cisco TAC.

- Step 2** If you do not have a current backup of the registry, click **Registry > Export Registry File**, and save the registry settings to a file.
- Step 3** Go to the registry key HKEY\_LOCAL\_MACHINE\System\CurrentControlSet\Services\Aaudio\Parameters\ComfortNoise
- Step 4** In the Edit Dword Value window, click **Decimal**.
- Step 5** Modify the Cisco Unity comfort noise setting as needed:
- To decrease the volume of background noise between prompts and other audio, increase the setting (for example, to 60 dB). Make small adjustments to this setting of no more than 10 units.
  - To increase the volume of background noise, reduce the setting (for example, to 40 dB). Make small adjustments to this setting of no more than 10 units.
  - To disable Cisco Unity comfort noise, set the value to **0**.
- Step 6** Click **OK**.
- Step 7** Restart the Cisco Unity server.
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