



Audio Codecs and Cisco Unity (All Versions of Cisco Unity)

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This document lists the audio codecs that Cisco Unity supports, and describes how to change the audio codecs that Cisco Unity uses. See the following sections:

- [Audio Codecs That Cisco Unity Uses for Calls, page 1](#)
- [Audio Codec Formats That Cisco Unity Uses for the System Prompts, page 2](#)
- [Audio Codecs That Cisco Unity Uses for Recording and Playing Messages, page 5](#)
- [Obtaining Documentation, Obtaining Support, and Security Guidelines, page 10](#)

Audio Codecs That Cisco Unity Uses for Calls

For the media stream for calls, Cisco Unity supports the following audio codec formats:

- G.711 Mu-Law
- G.729a



Note When the G.729a codec is used, Cisco Unity cannot perform silence detection. Using this codec may result in messages that have long trailing silence or that are entirely silent.

- OKI ADPCM (used only by integrations through voice cards)

Cisco Unity negotiates with the phone system to determine the audio codec format that will be used by the media stream for calls.



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Audio Codec Formats That Cisco Unity Uses for the System Prompts

During installation, the Cisco Unity Installation and Configuration Assistant gives you the choice of installing system prompts in either the G.711 (the default) or the G.729a audio codec format. After the initial system installation, you can view and change the audio codec format of the installed system prompts.

See the following sections:

- [Considerations for Selecting the Audio Codec Format of the System Prompts, page 2](#)
- [Viewing the Audio Codec Format of the System Prompts, page 2](#)
- [Changing the Audio Codec Format of the System Prompts, page 3](#)

Considerations for Selecting the Audio Codec Format of the System Prompts

You should consider the following when choosing the audio format for the system prompts:

- Cisco Unity should use system prompts in the same audio format that the phone system uses for the media stream for the following reasons:
 - To reduce the need for transcoding from one audio format to another.
 - To minimize the performance impact on the Cisco Unity server.
 - To provide consistent sound quality to callers.
- The G.711 Mu-Law audio codec format offers superior audio quality.

Viewing the Audio Codec Format of the System Prompts

Do the following procedure.

To View the Audio Codec Format of the 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, under Audio Management Tools, double-click **Codec Checker**. In the Codec Checker window, audio codec information appears in the first column of the Prompts table.



Note In the Codec Checker, the G.711 Mu-Law audio codec appears as “Microsoft MuLaw,” and the G.729a audio codec appears as “Sipro Labs G729.”

You can export a CSV copy of the information displayed by the Codec Checker to view in a spreadsheet application.

- Step 3** Click **Exit**.
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Changing the Audio Codec Format of the System Prompts

Before changing the audio codec format of the system prompts, Cisco recommends that you make the following preparations:

- Run the Gather Cisco Unity System Info tool (GUSI) to create a list of the Engineering Specials and Service Releases that are installed on the Cisco Unity server. The GUSI tool is available in Tools Depot.
- Confirm that you have the Engineering Specials and Service Releases available for reinstallation.

Note that this procedure requires as much time as upgrading the Cisco Unity software, and that Cisco Unity will stop taking calls while the procedure is in progress.

Do the following procedures, as applicable.

To Run the Cisco Unity Installation and Configuration Assistant to Change the System Prompt Audio Codec Format

Step 1 Log on to Windows by using the Cisco Unity installation account.



Note If you have not already done so, disable virus-scanning and Cisco Security Agent services on the server, if applicable. Otherwise, the installation may fail.

Step 2 On Cisco Unity DVD 1 or CD 1, browse to the root directory and double-click **Setup.exe**.

Step 3 If Cisco Unity is not set up to use SSL, the Set Up the Cisco Personal Communications Assistant to Use SSL page appears. Click **Do Not Set Up Cisco Personal Communications Assistant to Use SSL**, and click **Continue**.



Note If you want to set up Cisco Unity to use SSL, see the “Installing and Configuring Cisco Unity Software” chapter of the applicable Cisco Unity installation guide at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod_installation_guides_list.html.

Step 4 On the Summary screen, click **Here**.

Step 5 Follow the on-screen prompts to run the Cisco Unity Directory Walker (DbWalker) utility and the Disaster Recovery Backup tool. Both tools are available in Tools Depot.

Step 6 On the Install Cisco Unity screen, click **Run the Cisco Unity Setup Program**.



Note By running the Cisco Unity Setup program, you are reinstalling the version of Cisco Unity on the disc.

In the Setup dialog box, click **Next**.

Step 7 Follow the on-screen prompts until the Select Features dialog box appears.

Step 8 In the Select Features dialog box:

- Check the **Upgrade Cisco Unity** check box.
- If the Cisco Unity license includes Text to Speech, check the **Enable TTS** check box.
If not, uncheck the **Enable TTS** check box.
- If applicable, uncheck the **Install Voice Card Software** check box.

- Step 9** Follow the on-screen prompts until the Choose the System Prompt Set dialog box appears.
- Step 10** In the Choose the System Prompt Set dialog box, choose either the **G.711** or **G.729a** prompt set format.
- Step 11** Follow the on-screen prompts until you are prompted to restart the Cisco Unity server.
- Step 12** Check the **Yes, I Want to Restart My Computer Now** check box, and click **Finish**.
- Step 13** In the main window of the Cisco Unity Installation and Configuration Assistant, click **Run the Cisco Unity Services Configuration Wizard**. (Note that you should be logged on to Windows with the Cisco Unity installation account.)
- Step 14** On the Welcome screen, click **Next**.
- Step 15** Follow the on-screen prompts to complete the services configuration.
- Step 16** In the main window of the assistant, click **Run the Cisco Unity Message Store Configuration Wizard**. (Note that you should be logged on to Windows with the Cisco Unity installation account.)
- Step 17** On the Welcome screen, click **Next**.
- Step 18** Follow the on-screen prompts to complete the message store configuration.
- Step 19** If Cisco Unity is not set up to use SSL, the Set Up the Cisco Personal Communications Assistant to Use SSL page appears. Click **Do Not Set Up Cisco Personal Communications Assistant to Use SSL**, and click **Continue**.
- Step 20** On the Summary screen, click **Close**.
- Step 21** Reinstall any Engineering Specials or Services Releases that were previously installed on the Cisco Unity server.
- Step 22** If the Cisco Unity system is configured for failover, repeat [Step 1](#) through [Step 21](#) on the secondary server.

Do the following procedure only if you changed the system prompt codec format from G.711 to G.729a.

To Change the Record Beep Prompt Codec Format

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- Step 1** On the Cisco Unity server, on the Windows Start menu, click **Programs > Accessories > Entertainment > Sound Recorder**.
 - Step 2** In the Sound – Sound Recorder dialog box, on the File menu, click **Open**.
 - Step 3** Browse to the **CommServer\Support** directory.
 - Step 4** Double-click the **Recordbeep.wav** file.
 - Step 5** In the Recordbeep Sound Recorder dialog box, on the File menu, click **Properties**.
 - Step 6** In the Properties for Recordbeep.wav dialog box, click **Convert Now**.
 - Step 7** In the Sound Selection dialog box, in the Format list, click **ITU G.729A by VoiceAge**.
 - Step 8** Click **OK** twice to close the Sound Selection and the Properties for Recordbeep.wav dialog boxes.
 - Step 9** In the Recordbeep Sound Recorder dialog box, on the File menu, click **Save**.
 - Step 10** On the File menu, click **Exit**.
 - Step 11** If the Cisco Unity system is configured for failover, repeat [Step 1](#) through [Step 11](#) on the secondary server.
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Audio Codecs That Cisco Unity Uses for Recording and Playing Messages

Cisco Unity supports the following audio codecs for recording and playing messages.

Table 1 Audio Codecs That Cisco Unity Uses for Recording and Playing Messages

Audio Codec	Approximate File Size, 1-Minute Message	Comments
G.711 A-Law	480 KB	Installed automatically by the Windows operating system on the following: <ul style="list-style-type: none"> • Cisco Unity server. • Subscriber workstations.
G.711 Mu-Law	480 KB	Installed automatically by the Windows operating system on the following: <ul style="list-style-type: none"> • Cisco Unity server. • Subscriber workstations.
G.729a	60 KB	Installed automatically on the following: <ul style="list-style-type: none"> • Cisco Unity server. • Subscriber workstations when ViewMail for Outlook or DUC for Cisco is installed. <p>Note Cisco Unity does not support the G.729b audio codec. Messages recorded in the G.729b audio codec format cannot be transcoded by the G.729a audio codec.</p>
G.726 8.000 kHz 11.025 kHz 22.050 kHz 44.100 kHz	240 KB (8 kHz)	Installed automatically only on the Cisco Unity server (Cisco Unity version 4.0(5) and later).
GSM 6.10	98 KB	Installed automatically by the Windows operating system on the following: <ul style="list-style-type: none"> • Cisco Unity server. • Subscriber workstations.

Table 1 Audio Codecs That Cisco Unity Uses for Recording and Playing Messages (continued)

Audio Codec	Approximate File Size, 1-Minute Message	Comments
OKI ADPCM 8 kHz	240 KB	Installed automatically on the following: <ul style="list-style-type: none"> • Cisco Unity server (only when the software for voice cards is installed). • Subscriber workstations when ViewMail for Outlook or DUC for Cisco is installed.
OKI ADPCM 6 kHz	180 KB	Installed automatically on the following: <ul style="list-style-type: none"> • Cisco Unity server (only when the software for voice cards is installed). • Subscriber workstations when ViewMail for Outlook or DUC for Cisco is installed.

See the following sections for information on selecting the audio codec that Cisco Unity uses for recording and playing messages, and setting up subscriber workstations to play messages:

- [Considerations for Selecting an Audio Codec for Recording Messages, page 6](#)
- [Viewing the Audio Codec That Is Used for Recording Messages, page 7](#)
- [Changing the Audio Codec That Is Used for Recording Messages, page 7](#)
- [Setting Up Subscriber Workstations to Play Messages, page 8](#)

Considerations for Selecting an Audio Codec for Recording Messages

Typically, Cisco Unity uses the same audio codec format for recording a message that the playback device uses. For example, if most subscribers listen to messages primarily on a phone system extension, Cisco Unity should record messages in the same audio codec format that the phone system uses. If most subscribers listen to messages on Personal Digital Assistants (PDAs), however, Cisco Unity should record messages in the audio format that the PDAs use (such as GSM 6.10).

You should consider the following when setting the audio codec format for recording messages:

- The audio codec format that is set for recordings affects all messages, greetings, and voice names systemwide for all subscribers.
- Minimizing the number of different audio codec formats in use on Cisco Unity for recording and playing back recorded messages, greetings, and voice names reduces transcoding between audio codec formats that Cisco Unity must perform and reduces the effect on the performance of the Cisco Unity server.
- When a message, greeting, or voice name is recorded in a lower quality audio codec format and later transcoded to a higher quality audio codec format during playback, the sound quality is not improved. Usually, the sound quality of a recording suffers during transcoding, especially when the sampling rate is changed.

For example, sound quality suffers when messages that are recorded in the G.729a audio codec format are played back on devices that use the G.711 Mu-Law audio codec format. However, sound quality is preserved when messages that are recorded in the G.711 Mu-Law audio codec format are played back on devices that use the same audio codec format.

- When messages are recorded in the G.726, GSM 6.10, or OKI ADPCM audio codec format, the Cisco Unity server must transcode when playing back the message, which may impact the audio quality and system performance.
- Changing the audio codec that is used for recordings affects only messages, greetings and voice names that are recorded after the setting is changed. Existing messages, greetings, and names that are recorded in a different audio codec format are not affected by the new setting.



Note You can use the Set WAV Format tool in Tools Depot to change the audio codec format of existing greetings and voice names. However, this tool cannot be used to change the audio codec format of existing messages.

- When the Cisco Unity system will use the Cisco Unity TTY language, the G.711 Mu-Law audio codec format must be used for recording messages. The Cisco Unity TTY language is not compatible with other audio codec formats.
- For the audio codec formats that are supported for Cisco Unity networking options, see the “Comparison of AMIS, Bridge, and VPIM Networking” section in the “Networking in Cisco Unity” chapter of the applicable *Networking Guide for Cisco Unity* at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_feature_guides_list.html.

Viewing the Audio Codec That Is Used for Recording Messages

Do the following procedure.

To View the Audio Codec That Is Used for Recording Messages

- 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 Record Format**.
In the Set Record Format window, the audio codec currently used for recording messages appears in the Format field.



Note The G.711 Mu-Law audio codec appears as “CCITT u-Law,” and the G.729a audio codec appears as “Sipro Labs G729.”

- Step 3** Exit the Set Record Format utility.

Changing the Audio Codec That Is Used for Recording Messages

Do the following procedure.



Note Changing the audio codec that is used for recordings affects only messages, greetings, and voice names that are recorded after the setting is changed. Existing messages, greetings, and names that are recorded in a different audio codec format are not affected by the new setting.

To Change the Audio Codec That Is Used for Recording Messages

Step 1 Stop Cisco Unity (right-click the **Cisco Unity** icon in the system tray, then click **Stop Cisco Unity**).

Step 2 To use the G.711 A-Law, G.711 Mu-Law, G.729a, G.726, or GSM 6.10 audio codec, skip to [Step 3](#).

To use one of the OKI ADPCM codecs (only for integrations through voice cards), do the following substeps.

- a. Go to the Other Cisco Unity Components Software Download page at <http://www.cisco.com/cgi-bin/tablebuild.pl/unity>.



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

- b. Click **CiscoUnityDialogicCodec.exe**, and download the file to the directory of your choice on the Cisco Unity server.

For a Cisco Unity system with Exchange 2000, also download the file to the directory of your choice on the server on which the Cisco Unity Voice Connector is installed, if applicable.

- c. Unzip the **CiscoUnityDialogicCodec.exe** file to the directory of your choice.
- d. Double-click **Avvox_setup.exe**, and follow the on-screen prompts.

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, click the applicable audio codec and click **OK**.

Step 6 Restart the Cisco Unity server.

Step 7 If the Cisco Unity system is configured for failover, repeat [Step 1](#) through [Step 6](#) on the secondary server.

Setting Up Subscriber Workstations to Play Messages

When subscribers want to play messages on their workstations, the workstations must have the applicable audio codecs installed. Otherwise, the subscriber will be unable to play the message on the workstation. If messages are forwarded to recipients outside the organization, the recipients' audio players must support the audio codec format in which the message was recorded.

The default Cisco Unity audio players—ViewMail for Outlook and DUC for Cisco—can play messages in all audio codec formats that Cisco Unity supports except G.726. For other audio players, you must do the applicable procedure for the audio codec that is installed:

- G.711 A-Law—Installed by the Windows operating system; no action is necessary.
- G.711 Mu-Law—Installed by the Windows operating system; no action is necessary.
- GSM 6.10—Installed by the Windows operating system; no action is necessary.
- G.729a—Do the [“To Install the G.729a Codec for Cisco Unity on a Subscriber Workstation That Does Not Have ViewMail for Outlook or DUC for Cisco Installed”](#) procedure on page 9.

- OKI ADPCM—Do the “[To install an OKI ADPCM Codec for Cisco Unity on a Subscriber Workstation That Does Not Have ViewMail for Outlook or DUC for Cisco Installed](#)” procedure on page 9.
- G.726—Do the “[To Install the G.726 Codec on a Subscriber Workstation](#)” procedure on page 9.

To Install the G.729a Codec for Cisco Unity on a Subscriber Workstation That Does Not Have ViewMail for Outlook or DUC for Cisco Installed

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- Step 1** On Cisco Unity DVD 1 or CD 1, browse to the **Utilities** directory.
- Step 2** Copy the **SI_G729a_setup.exe** file to the directory of your choice on the network or to a disk. Administrators or subscribers can then install the codec from the network or from the disk:
- Confirm that the subscriber workstation is using a Windows operating system and that a compatible audio player is installed.
 - Double-click **SI_G729a_setup.exe**, and follow the on-screen prompts.
 - Restart the subscriber workstation for the codec change to take effect.
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To install an OKI ADPCM Codec for Cisco Unity on a Subscriber Workstation That Does Not Have ViewMail for Outlook or DUC for Cisco Installed

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- Step 1** Go to the **Other Cisco Unity Components Software Download** page at <http://www.cisco.com/cgi-bin/tablebuild.pl/unity>.
- Step 2** Click **CiscoUnityDialogicCodec.exe**, and download the file to the directory of your choice on the network or to a disk. Administrators or subscribers can then install a codec from the network or from the disk:
- Confirm that the subscriber workstation is using a Windows operating system and that a compatible audio player is installed.
 - Unzip the **CiscoUnityDialogicCodec.exe** file to the directory of your choice on the workstation.
 - Double-click **Avvox_setup.exe**, and follow the on-screen prompts.
 - Restart the subscriber workstation for the codec change to take effect.
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To Install the G.726 Codec on a Subscriber Workstation

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- Step 1** Purchase license(s) from the vendor of your choice.
- Step 2** Follow the vendor instructions for installing to the directory of your choice on the network or to a disk. Administrators or subscribers can then install the codec on their workstations from the network or from the disk.
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Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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