



## Utilities

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### About Cisco Unity Utilities

Cisco Unity provides utilities that you can use to troubleshoot problems. These utilities include:

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|---|---|
| <b>The Integration Monitor</b>                    | Shows the information being sent between the phone system and Cisco Unity. See the <a href="#">“Integration Monitor” section on page 9-2.</a>                     |
| <b>Learn Tones</b>                                | Learns the frequency and cadence of the phone system tones and updates the phone system template file. See the <a href="#">“Learn Tones” section on page 9-7.</a> |
| <b>The Call Viewer</b>                            | Displays information about each call that the phone system integration sends to Cisco Unity. See the <a href="#">“Call Viewer” section on page 9-14.</a>          |
| <b>The Universal Dialogic Diagnostics utility</b> | Performs a wide range of tests on the Dialogic voice cards. See the <a href="#">“Universal Dialogic Diagnostics Utility” section on page 9-15.</a>                |

# Integration Monitor

The Integration Monitor shows the information being sent between the phone system and Cisco Unity. Each packet of data contains information on one call that the phone system forwards to Cisco Unity. In some cases, seeing this data can help you diagnose integration problems.

With a serial integration, you can view the packets of data that are sent over the serial link. The Integration Monitor also displays the packets that Cisco Unity sends to the phone system, each of which contains one MWI on or off code.

With an analog integration, you can view the packets sent over the phone lines that connect the phone system and Cisco Unity.

When troubleshooting the Cisco CallManager integration, use the Call Viewer. The Cisco Unity Integration Monitor is not compatible with the CallManager integration. See the [“Call Viewer” section on page 9-14](#) for more information.

## To run the Integration Monitor

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- Step 1** Cisco Unity must be running for the Integration Monitor to display the packets being passed to and from the Cisco Unity server. If Cisco Unity is not running, start it.
  - Step 2** On the Windows Start menu, click **Programs > Cisco Unity > Integration Monitor**.
  - Step 3** Use the View menu to select display options. For more information, see the [“Integration Monitor Display Options” section on page 9-3](#).
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## Values Displayed in the Integration Monitor

For information on the values and menu options that appear in the Integration Monitor, see [Table 9-1](#).

**Table 9-1** Integration Monitor Fields and Columns

Field/Column	Meaning
Analog Integration or Serial Integration	Immediately below the menu bar, the Integration Monitor displays the name of the current integration and the integration type.
First Digit Delay (ms) <i>(analog integrations only)</i>	<p>The amount of time that Cisco Unity waits (in milliseconds) for the first digit of a packet to arrive after Cisco Unity answers a call. For example, to specify that the Integration Monitor wait three seconds for the first digit to arrive, enter 3000.</p> <p>If you change this value, you are changing the value in the Cisco Unity phone system template file for the current integration. Changing this value may cause Cisco Unity to work incorrectly.</p>
Next Digit Delay (ms) <i>(analog integrations only)</i>	<p>The amount of time that Cisco Unity waits between digits for the next digit of a packet to arrive. If the next digit does not arrive within that amount of time, Cisco Unity considers the next digit user input, and the Integration Monitor displays the digit on a new line (only when the Include digits option and Hang-up packet are defined). For example, to specify that the Integration Monitor wait two-tenths of a second for the next digit to arrive, enter 200.</p> <p>If you change this value, you are changing the value in the Cisco Unity phone system template file for the current integration. Changing this value may cause Cisco Unity to work incorrectly.</p>
Time	The time at which Cisco Unity received the call from the phone system or the time at which Cisco Unity sent an MWI on or off code to the phone system. New packets appear at the top of the Integration Events list.
Packet	The unformatted information that the phone system sent to Cisco Unity or that Cisco Unity sent to the phone system. The Integration Monitor uses the phone system template file to parse the contents of the packet into the values in the remaining columns.
Port	The voice card port on the Cisco Unity server on which a call arrives from the phone system.

## Integration Monitor Display Options

The menus in the Integration Monitor let you save data to a file and change the display in a variety of ways, as described in [Table 9-2](#).

Table 9-2 Integration Monitor Options

Menu	Option	Description
File	Log to file	To specify a file for saving Integration Monitor data.
Edit	Allow delay edits <i>(analog integrations only)</i>	To change the values in the First Digit Delay (ms) and Next Digit Delay (ms) boxes. If this option is not selected, the values are display only. For more information, see First Digit Delay (ms) and Next Digit Delay (ms) in <a href="#">Table 9-1</a> .
View	Always on top	To display the Integration Monitor window in front of all other windows regardless of which window is currently active.  To cancel the option, click it again.
View	Include digits <i>(analog integrations only)</i>	To display individual digits that are not recognized as part of a packet. For more information, see Next Digit Delay (ms) in <a href="#">Table 9-1</a> .
View	Freeze display	To prevent new data packets from being displayed in the Integration Monitor window. If Cisco Unity is busy, this option can be useful for analyzing an individual packet. Freezing the display prevents the packet from scrolling out of the window before you can look at it.  To unfreeze the display, click the option again.
View	Raw serial data <i>(serial integrations only)</i>	To display data from the phone system or from Cisco Unity regardless of whether the Integration Monitor recognizes the data as a valid packet. If no data is displayed in the Integration Monitor but you think it should be, try this option. There may be no display because the Integration Monitor is unable to determine what the pieces of the packets are.  To return to displaying formatted packets, click the option again.

**Table 9-2 Integration Monitor Options**

Menu	Option	Description
View	Outgoing data <i>(serial integrations only)</i>	To display only the packets that Cisco Unity is sending to the phone system to turn MWIs on and off.  To return to displaying all packets, click the option again.
View	Incoming data only <i>(serial integrations only)</i>	To display only the packets that the phone system is sending to Cisco Unity, including: <ul style="list-style-type: none"> <li>• Calls forwarded to Cisco Unity because the extension is busy.</li> <li>• Calls forwarded to Cisco Unity because the extension is not answered.</li> <li>• Calls forwarded to Cisco Unity because the extension is in do not disturb mode.</li> <li>• Calls from subscribers who want to check or leave voice messages.</li> <li>• Calls from external callers who called Cisco Unity.</li> </ul> To return to displaying all packets, click the option again.

## Integration Monitor Frequently Asked Questions

Question	Answer
Can I freeze the display?	Yes. From the View menu, select Freeze Display.
Can I view raw serial data?	Yes. From the View menu, select Raw Serial Data.
Can I view DTMF digits (analog only) separately from the packets?	Yes. From the View menu, select Include Digits, and confirm that the Hang-up packet is defined. This allows you to view all packets and all other DMTF digits detected by Cisco Unity, which can be helpful in troubleshooting DTMF integration packet problems.

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|---|---|
| Can I log the integration packets in the Integration Monitor to a file? | Yes. From the File menu, select Log to File. Specify name and location of the file to receive the integration packet information. |
| Can the Integration Monitor be used with all Integrations?              | No. The Integration Monitor can only be used for serial and analog integrations.  |

## Integration Monitor Troubleshooting

To resolve a situation where no integration information is displayed for a serial or analog integration

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- Step 1** In the View menu, confirm that Freeze Display is not selected. If it is, deselect it. If it is not selected, continue with [Step 2](#).
  - Step 2** In the Cisco Unity Administrator, click **System > Switch**.
  - Step 3** In the Set Active Switch Type section, verify that all values are correct for your phone system.
  - Step 4** Correct any incorrect values.
  - Step 5** If you changed values in [Step 4](#), click **Save**, and continue with [Step 6](#). If you did not change any values, skip to [Step 7](#).
  - Step 6** Shut down and restart Cisco Unity.
  - Step 7** If you have a serial integration, confirm that the serial cable is plugged securely into the correct Cisco Unity COM port and into the phone system.  
If you have an analog integration, in the Cisco Unity Administrator, click **System > Licensing > Licensed Features**. Confirm that the analog integration is enabled on the system key.  
If none of the steps in this procedure correct the problem, contact the Cisco Technical Assistance Center (TAC).
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To resolve a situation where only partial packets are displayed (analog integrations only)

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- Step 1** From the Integration Monitor Edit menu, select **Allow Delay Edits**.

- Step 2** Increase the values in the First Digit Delay (ms) and Next Digit Delay (ms) boxes. For example, if the First Digit Delay (ms) is set to 2000, change it to **3000**. And if the Next Digit Delay (ms) is set to 250, change it to **500**.
  - Step 3** From the Integration Monitor Edit menu, select **Allow Delay Edits** again to save the changes.
  - Step 4** If partial packets still display, contact Cisco TAC for assistance in changing the OffHook delay parameter.
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## Learn Tones

Cisco Unity comes with template files for a variety of phone systems. These template files should work with most phone systems without modification. However, problems with transfers, message waiting indication, and message notification can arise if Cisco Unity does not understand the phone system tones. If any of these problems occur, and basic troubleshooting procedures do not correct the problem, run the Learn Tones utility to modify the phone system template file.

The Learn Tones utility is designed to run on systems equipped with Dialogic analog voice cards only. The Learn Tones utility also requires exclusive access to the ports. Do not run Learn Tones unless Cisco Unity is shut down.

The Learn Tones utility learns the frequency and cadence of the phone system tones, such as busy and ringback, and teaches them to Cisco Unity. Once you start the utility, the process is automatic. One voice messaging port calls other ports to generate the tones. The utility displays the tone settings already present in the phone system template file on start-up, and sets any missing items to the default values. Upon completion, it adds the learned tones of your choice to the phone system template file.

## Tones Defined in the Switch Configuration File

There are five different tones that can be defined in the Cisco Unity switch configuration file. These can be split into two categories. The first category is tones that are used during call progress. Cisco Unity listens for these tones when performing a transfer or making an outgoing call, but does not listen for these tones during the voice mail conversation or during recording. These tones are:

- Switch Dial Tone
- Switch Ringback Tone
- Switch Busy Tone

The other two tones are disconnect tones. Cisco Unity always listens for these tones during voice messaging conversation and during recording. If one of these tones is detected, it tells Cisco Unity that the caller has hung up, and Cisco Unity goes on hook. These tones are:

- Switch Disconnect Tone
- CO Disconnect Tone

There are usually no tone definitions in the switch configuration file when the Cisco Unity system is installed. Depending on the switch and integration being used, it is often unnecessary to define any tones in the switch configuration file. Cisco Unity uses a default set of definitions for tones that are not defined in the switch configuration file, and this default set works fine in most cases. When it is determined that a particular tone (or tones) must be defined in the switch configuration file, it is best to define only those tones. Defining tones that are not necessary for Cisco Unity to perform properly with a particular phone system can limit the ability of the voice messaging system to handle unexpected tones, such as unexpected disconnect tones sent from a central office.

Learning tones may resolve the problem when callers report being disconnected (hung up on) while they are recording a voice message. The default disconnect tone definitions in Cisco Unity have very large frequency and cadence deviations defined. While this allows the system to detect disconnect tones from a wide range of central offices, phone systems, countries, and so on, it also increases the chance that the voice of a caller will mistakenly be detected as disconnect tone, causing the voice messaging system to hang up on the call. Learning the disconnect tone(s) specific to the phone system in use can remedy this problem. Once the tone definition is in the switch configuration file, the deviations can be manually edited if fine tuning is desired.

## Switch Configuration File Location

The switch configuration.ini files are located in the \CommServer\Intlib folder on the Cisco Unity server. The active switch configuration file is based on the selections made in the Switch Selection page during Cisco Unity installation, or by any subsequent changes on the Switch page or made in the Edit Switch utility.

The file that Cisco Unity uses as the active switch configuration file is the “Switch Configuration File” located in the registry at HKLM>SOFTWARE>Active Voice>MIU>1.0>Initialization>Switch 0.

## Running the Learn Tones Utility

Perform the following procedure to run the Learn Tones utility.

**To run the Learn Tones utility (systems equipped with Dialogic analog cards only)**

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- Step 1** In the Cisco Unity Administrator, click **System > Switch**.
  - Step 2** In the Set Active Switch Type section, verify all values. Correct any incorrect values for the phone system.
  - Step 3** If you changed values in [Step 2](#), click the **Save** icon.
  - Step 4** Shut down Cisco Unity.
  - Step 5** On the Windows Start menu, click **Programs > Cisco Unity > Learn Tones**.
  - Step 6** Confirm that all ports and extensions are correct. Do not use a hunt group for the helper extension.
  - Step 7** Choose Manual mode or allow Learn Tones to run in Automatic (default) mode.  
Both modes use port 1 as the primary learning port, and Automatic mode uses ports 2 and 3 as helper ports. Or, you can designate other helper ports by entering their port numbers and extensions. Extension numbers for ports 1, 2, and 3 are imported automatically from the Cisco Unity Administrator Ports page.  
Use Manual mode when you want the primary port to call a specific extension rather than a helper port, or when some aspect of the phone system programming, such as forwarding when a line is busy, conflicts with the tone-learning process. The phone specified for Manual mode should be close to the Cisco Unity server,

so that you can see the on-screen prompts and operate the phone at the same time. To run in Manual mode, check the **Manual Mode** check box under Settings, and enter the extension of the phone you want to use in the **Manual Ext** field.

- Step 8** Confirm that Delay Between Calls is set to the default value of **4000 ms**. Delay between calls is the number of milliseconds that Learn Tones delays before making a subsequent call to learn or verify a tone.
- Step 9** Confirm that Deviation Threshold is set to the default value of **15%**. Deviation Threshold sets the deviation that is considered acceptable when learning individual tones. Tones outside the Deviation Threshold for any single field (frequency 1, frequency 2, on, off, and so on) are discarded.
- Step 10** Confirm that Calls is set to the default value of **1**.
- Step 11** Confirm that Frames is set to the default value of **5**.
- Step 12** Confirm that Delay(ms) is set to the default value of **1500ms**. Delay sets the amount of time between the completion of the action to cause a tone, and the beginning of learning the tone. The delay value avoids detection of stray events on the line during line state transitions.
- Step 13** To learn dial tone, in the Dialtone section, click **Learn**. In Automatic mode, Learn Tones uses the following process to learn dial tone:
- Goes off-hook on port 1.
  - Waits the number of milliseconds defined in Delay for dial tone.
  - Listens to and learns the tone on port 1.
  - Goes on-hook on port 1.
  - Waits the number of milliseconds defined in Delay Between Calls.
  - Listens to and verifies the tone on port 1.
  - Goes on-hook on port 1.
- If a “Success” message appears at the conclusion of this process, continue with [Step 14](#).
- If a “Failure” message appears, resolve the problem and repeat this step.
- Step 14** To learn busy tones, in the Busy section, click **Learn**. In Automatic mode, Learn Tones follows this process to learn busy tone:
- Goes off-hook on port 2.
  - Dials port 3 extension.

- c. Goes off-hook on port 3 to answer the call from port 2.
- d. Goes off-hook on port 1.
- e. Dials port 2 extension.
- f. Waits the number of milliseconds defined in Delay for busy tone.
- g. Listens to and learns the tone on port 1.
- h. Goes on-hook on ports 1, 2, and 3.
- i. Waits the number of milliseconds defined in Delay Between Calls.
- j. Goes off-hook on port 2.
- k. Dials port 3 extension.
- l. Goes off-hook on port 3 to answer the call from port 2.
- m. Goes off-hook on port 1.
- n. Dials the extension of port 2.
- o. Listens to and verifies the tone on port 1.
- p. Goes on-hook on ports 1,2 and 3.

If a “Success” message appears, continue with [Step 15](#).

If a “Failure” message appears, resolve the problem and repeat this step.

**Step 15** To learn switch disconnect tone, in the Disconnect section, click **Learn**. In Automatic mode, Learn Tones follows this process to learn disconnect tone:

- a. Waits the amount of milliseconds defined as Delay between calls(ms).
- b. Goes off-hook on port 1.
- c. Dials port 2 extension
- d. Goes off-hook on port 2 to answer the call from port 1.
- e. Delays for 2000ms (2 seconds).
- f. Goes on-hook on port 2.
- g. Waits the amount of milliseconds defined as Delay(ms) for disconnect tone.
- h. Listens to and learns the tone on port 1.
- i. Goes on-hook on port 1.
- j. Waits the amount of milliseconds defined as Delay between calls.
- k. Goes off-hook on port 1.

- l. Dials port 2 extension.
- m. Goes off-hook on port 2 to answer the call from port 1.
- n. Delays for 2000ms (2 seconds).
- o. Goes on-hook on port 2
- p. Listens to and verifies the tone on port 1.
- q. Goes on-hook on port 1.

If a “Success” message appears, continue with .

If a “Failure” message appears, resolve the problem and repeat this step.

**Step 16** To learn CO Disconnect tone, in the CO Disconnect section, click **Learn**. In Automatic mode, Learn Tones uses the following steps to learn CO disconnect tone:

- a. Goes off hook on port 1.
- b. Dials 9.
- c. Waits the amount of milliseconds defined as Delay(ms) for CO Disconnect tone.
- d. Listens to and learns the tone on port 1.
- e. Goes on-hook on port 1.
- f. Waits the amount of milliseconds defined as Delay between calls.
- g. Goes off-hook on port 1.
- h. Dials 9.
- i. Listens to and verifies the tone on port 1.
- j. Goes on hook on port 1.

If a “Success” message appears, continue with [Step 17](#).

If a “Failure” message appears, resolve the problem and repeat this step.

**Step 17** To learn ringback tone, in the Ringback section, click **Learn**. In Automatic mode, Learn Tones uses the following steps to learn ringback tone:

- a. Goes off-hook on port 1.
- b. Dials the extension of port 2.
- c. Waits the amount of milliseconds defined as Delay for ringback tone.
- d. Listens to and learns the tone on port 1.

- e. Goes on hook on port 1.
- f. Waits the amount of milliseconds defined as Delay between calls.
- g. Goes off-hook on port 1.
- h. Dials the extension of port 2.
- i. Listens to and verifies the tone on port 1.
- j. Goes on hook on port 1.

If a “Success” message appears, continue with [Step 18](#).

If a “Failure” message appears, resolve the problem and repeat this step.

- Step 18** The Learn Tones utility automatically verifies tones after it learns them, so there is no need to click the Verify All button before saving the learned tones.
- Step 19** Click **Save**.
- Step 20** In the dialog box that appears, check only the boxes of the tones you want to update in the switch configuration file, then click **OK**.
- Step 21** To save the new tones directly to the active switch configuration file, accept the default file name. If you want to save the tones to a temporary file for comparison and then manually copy them to the switch configuration file at a later time, enter a file name of your choice. Click **Open**.
- Step 22** Click **Done** to exit the Learn Tones utility.
- Step 23** Restart Cisco Unity.
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## Troubleshooting the Learn Tones Utility

If the learn tones process fails, perform the following procedure.

### To troubleshoot the Learn Tones utility

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- Step 1** Adjust the Delay(ms) setting for the tone that you are having trouble with. **1500** to **2000** milliseconds is usually sufficient. Be careful not to make this delay too long as Learn Tones may fail to learn a tone, learn the wrong tone, or miss the tone altogether.
- Step 2** If Automatic mode is not working, try Manual mode, or vice versa.

**Step 3** Unplug the line cord from port 1 of Cisco Unity and plug it into an analog phone. Use the same steps that the Learn Tones utility uses to manually recreate the condition that Learn Tones is listening to.

**Step 4** If one or more tones are learned with the following cadence:

On(ms)	Dev	Off(ms)	Dev
2000	-2000	0	0

this indicates that the learned tone is continuous. When a tone with continuous cadence is saved to the switch configuration file, the cadence appears as:

```
TimeOn1=4000
TimeOnDeviation1=0
TimeOff1=0
TimeOffDeviation1=0
Cycles=0
```

This is intentional. To support voice card manufacturers other than Dialogic, the latter method must be used when defining a continuous tone in the switch configuration file. When Cisco Unity is restarted, the Miu translates the cadence back to the original settings if Dialogic cards are installed.

If you need assistance resolving these or other Learn Tones problems, contact Cisco TAC.

## Call Viewer

For each call that the phone system integration sends to Cisco Unity, the Call Viewer displays one line of information. This information can be helpful when troubleshooting problems with the phone system integration.

When troubleshooting the Cisco CallManager integration, use the Call Viewer. The Cisco Unity Integration Monitor is not compatible with the CallManager integration.

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### To run the Call Viewer

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- Step 1 If Cisco Unity is not running, start it.
  - Step 2 On the Windows Start menu, click **Programs > Cisco Unity > Call Viewer**.
  - Step 3 Use the Call Viewer window to see call information that the phone system integration provides to Cisco Unity.
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## Universal Dialogic Diagnostics Utility

The Universal Dialogic Diagnostics (UDD) utility performs a wide range of tests on the Dialogic voice cards. It is used to determine if something is wrong with one or more of the Dialogic voice cards in the Cisco Unity server.

### To run the UDD utility

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- Step 1 On the Windows Start menu, click **Programs > Dialogic System Software > Universal Dialogic Diagnostics Utility**.
  - Step 2 Shut down the **Dialogic Service**.
  - Step 3 The UDD utility may display several warning or error messages. For each, choose the option that continues the process of starting the utility.
  - Step 4 Select the options required to perform all tests on all cards. The tests take approximately five minutes per card.
  - Step 5 When the tests are finished, the Done button becomes available. Click **Done** to display additional information on failed tests, if any.
  - Step 6 If you see errors that you do not know how to resolve, contact Cisco TAC.
  - Step 7 When you are finished reviewing test results, click **Exit UDD**.
  - Step 8 Shut down and restart the Cisco Unity server.
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