



# Syntegra ITS SMDI Integration Guide for Cisco Unity 5.0

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*Revised November 26, 2007*

This document provides instructions for integrating the phone system with Cisco Unity.

## Integration Tasks

Before doing the following tasks to integrate Cisco Unity with the Syntegra ITS phone system, confirm that the Cisco Unity server is ready for the integration by completing the appropriate tasks in the applicable Cisco Unity installation guide.

The following task list describes the process for creating the integration.

## Task List to Create the Integration

Use the following task list to set up a new integration with the Syntegra ITS phone system. If you are installing a new Cisco Unity server by using the applicable Cisco Unity installation guide, you may have already completed some of the following tasks.

1. Integrate Cisco Unity with Cisco Unified CM version 3.2(x) or later. Refer to the applicable Cisco Unified CM integration guide for Cisco Unity at [http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_installation_and_configuration_guides_list.html).
2. Review the system and equipment requirements to confirm that all phone system and Cisco Unity server requirements have been met. See the “[Requirements](#)” section on page 2.
3. Program and configure the Syntegra ITS phone system. See the “[Programming the Syntegra ITS Phone System](#)” section on page 4.
4. On the VoIP gateway, configure the trunk to the Syntegra ITS phone system and configure the appropriate dial-peer so outbound calls are routed to the Syntegra ITS phone system and inbound calls are routed to Cisco Unified CM. For instructions, refer to the gateway documentation.
5. Configure the Cisco Unified CM phone system. See the “[Configuring the Cisco Unified CM Phone System](#)” section on page 5.



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**Americas Headquarters:**  
**Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA**

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6. Configure the Syntegra SMDI gateway. See the [“Configuring the Syntegra SMDI Gateway” section on page 6](#).
7. Configure the Cisco Unity SMDI settings to accept the serial cable from the Syntegra ITS phone system. See the [“Configuring the Cisco Unity SMDI Settings” section on page 7](#).
8. Test the integration. See the [“Testing the Integration” section on page 9](#).
9. If you have a secondary server for Cisco Unity failover, integrate the secondary server. See the [“Integrating a Secondary Server for Cisco Unity Failover” section on page 10](#).

## Requirements

The Syntegra ITS integration supports configurations of the following components:

### Cisco Unified Communications Manager Phone System

- A Cisco IP telephony applications server consisting of a supported version of Cisco Unified CM, running on a Cisco Media Convergence Server (MCS) or customer-provided server meeting approved Cisco configuration standards.
- Cisco licenses for all IP phone lines, IP phones, and other H.323-compliant devices or software (such as Cisco VirtualPhone and Microsoft NetMeeting clients) that will be connected to the network, as well as one license for each Cisco Unity port.
- IP phones for the Cisco Unified CM extensions.
- A LAN connection in each location where you will plug an IP phone into the network.
- A VoIP gateway.

### Syntegra ITS Phone System

- Syntegra ITS platform (release 13 or later).
- Syntegra SMDI gateway (release 1.2 or later).
- The Syntegra SMDI gateway connected to the Syntegra ITS platform as described in the installation guide for the phone system.
- The serial data port in the phone system connected to a serial port (COM1 is the default) on the Cisco Unity server with an RS-232 serial cable.

We recommend that the serial cable have the following construction:

- A maximum of 50 feet (15.24 m) in length
- 24 AWG stranded conductors
- Low capacitance—for example, no more than 12 pF/ft (39.4 pF/m) between conductors
- At least 65 percent braided shield over aluminized polymer sleeve around conductors
- UL-recognized overall cable jacket insulation with low dielectric constant
- Braided shield fully terminated to and enclosed by a metal connector backshell
- Gold-plated connector contacts
- The voice messaging ports in the phone system connected to the voice cards in the Cisco Unity server.
- The phone system ready for the integration as described in the installation guide for the phone system.

- A trunk connection between Cisco Unified CM and the Syntegra ITS phone system through a VoIP gateway.
- Unique subscriber extensions on the Syntegra ITS phone system that forward on no answer to corresponding “phantom” extensions (extension numbers that do not have physical devices) on Cisco Unified CM.

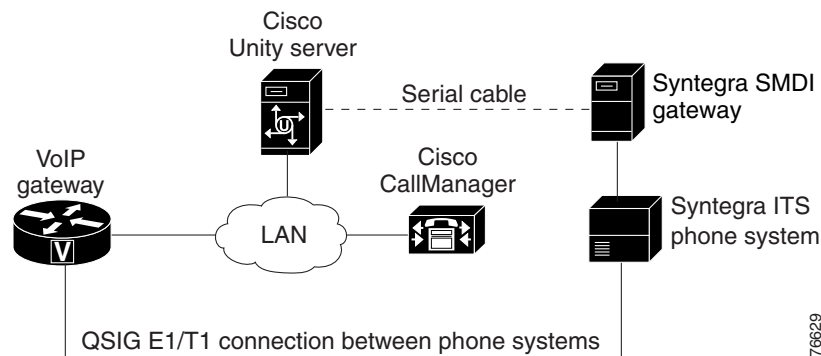
#### Cisco Unity Server

- Cisco Unity installed and ready for the integration, as described in the applicable Cisco Unity installation guide at [http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod_installation_guides_list.html).
- A license that enables the applicable number of voice messaging ports.
- An available serial port (COM1 is the default).

## Integration Description

The Syntegra ITS integration requires a data link, which consists of a network connection, a Syntegra SMDI gateway, and an RS-232 serial cable to connect the Syntegra ITS phone system and the Cisco Unity server. Cisco Unity uses the data link to turn MWIs on and off on the Syntegra ITS phone system. Connections between the Syntegra ITS phone system and Cisco Unified CM are carried by the E1/T1 ISO QSIG trunk connection and the VoIP gateway. [Figure 1](#) shows the required connections.

**Figure 1** Connections Between the Syntegra ITS Phone System and Cisco Unity



When a call for a subscriber is unanswered, the Syntegra ITS phone system forwards the call to a “phantom” extension on Cisco Unified CM. This extension is set to forward all calls to Cisco Unity so that the caller can record a message. Cisco Unity then turns the subscriber MWI on through the RS-232 serial cable.

## Integration Functionality

The Syntegra ITS integration with Cisco Unity provides the following features:

- Call forward to personal greeting
- Caller ID

- Easy message access (a subscriber can retrieve messages without entering an ID because Cisco Unity identifies the subscriber based on the extension from which the call originated; a password may be required)
- Identified subscriber messaging (Cisco Unity identifies the subscriber who leaves a message during a forwarded internal call, based on the extension from which the call originated)
- Message waiting indication (MWI)

## Programming the Syntegra ITS Phone System

Do the following two procedures.

### To Program the Syntegra ITS Phone System

- 
- Step 1** Add a Digital Line Interface Card (DLIC) to the Syntegra ITS phone system with the correct QSIG software (E1 or T1).
- Step 2** Connect an access cable from the DLIC to the rack access panel by using CAT5 presentation.
- Step 3** Connect the Syntegra ITS phone system to the VoIP gateway with a voice cross-over cable that is wired as shown in [Table 1](#).

**Table 1** *E1/T1 QSIG Trunk Wiring Between the Syntegra ITS Phone System and the VoIP Gateway*

Pin from the Syntegra ITS Phone System	Pin to the VoIP Gateway
1	5
2	4
3	3
4	2
5	1
6	6
7	7
8	8

- Step 4** Configure the DLIC to run in BASIC mode.
- Step 5** Configure the Syntegra ITS phone system to be the clock source.
- Step 6** Configure the Syntegra ITS phone system to run Slave comms.
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### To Set Up Voice Mail Speed Dial Buttons and Call-Forward-on-No-Answer Diverts

- 
- Step 1** In the Syntegra ITS profile, set the voice mail pilot number for Cisco Unity.
- Step 2** In the first user profile that needs voice mail, add a voice mail access key that uses the subscriber extension set up in Cisco Unity for the user (for example, 5001).

**Step 3** For the same user, add an extension key:

<b>Divert No Answer</b>	*42<“phantom” extension number>#
<b>Divert Immediate</b>	*41<“phantom” extension number>#

The “phantom” extension is the extension set up in Cisco Unified CM (for example, 5001) that corresponds to the Syntegra ITS extension (for example, 1001) that needs voice mail.

**Step 4** Repeat [Step 2](#) and [Step 3](#) for each remaining user profile that needs voice mail.

## Configuring the Cisco Unified CM Phone System

Do the following two procedures.

### To Configure the Gateway on Cisco Unified CM

**Step 1** On the Cisco Unified CM Administration, configure the gateway that connects to the Syntegra ITS phone system. For details, refer to the *Cisco Unified Communications Manager Administration Guide* at [http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod\\_maintenance\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html).



**Note** Because the following procedure requires restarting all devices, calls may be dropped on the gateways. Cisco recommends doing this procedure after business hours.

### To Add “Phantom” Extensions to the Cisco Unified CM Phone System

**Step 1** For the first Syntegra ITS turret extension that needs voice mail, in the Cisco Unified CM Administration, click **Device > Add a New Device**. The Add a New Device page appears.

**Step 2** In the Device Type list, click **Phone**, and click **Next**. The Add a New Phone page appears.

**Step 3** In the Phone Type list, click Cisco IP Phone 7960, and click **Next**. The Phone Configuration page appears.



**Note** After you choose a phone type, you cannot modify your choice.

**Step 4** Enter the following settings.

**Table 2** Phone Configuration Page Settings

Field	Setting
MAC Address	Enter any unique Media Access Control (MAC) address that is 12 digits long. It is not necessary that this address be real, but it must be unique.
Device Pool	Click <b>Default</b> .

**Table 2** Phone Configuration Page Settings (continued)

Field	Setting
Calling Search Space	If the voice messaging ports are in a partition, click the calling search space that can access this partition. Otherwise, click <None>.
Phone Button Template	Click <b>Standard 7960</b> .

**Step 5** Click **Insert**.

**Step 6** At the message stating that the phone has been added to the database, click **OK**.

**Step 7** On the Directory Number Configuration page, enter the following settings.

**Table 3** Directory Number Configuration Page Settings

Field	Setting
Directory Number	Enter a unique “phantom” directory number that corresponds to an extension on the Syntegra ITS phone system. For example, enter the “phantom” directory number 5001 to correspond to the Syntegra ITS extension 1001. Make sure that the directory number that you enter in the Directory Number field is unique within the partition that you choose.
Partition	Click the partition to which the directory number belongs. Make sure that the directory number that you enter in the Directory Number field is unique within the partition that you choose.
Voice Mail Profile	Click the voice mail profile that is set up for Cisco Unity, or click <None>.
Calling Search Space	If the voice messaging ports are in a partition, click the calling search space that can access this partition. Otherwise, click <None>.
Forward All	Check the <b>Voice Mail</b> check box.
Forward Busy	Check the <b>Voice Mail</b> check box.
Forward No Answer	Check the <b>Voice Mail</b> check box.

**Step 8** Click **Insert**.

**Step 9** When prompted to click OK to return to the current device, click **Cancel**.

**Step 10** Click **Reset Devices**.

**Step 11** When prompted to restart the device, click **OK**.

**Step 12** Repeat [Step 1](#) through [Step 11](#) for each remaining Syntegra ITS turret extension that needs voice mail.

## Configuring the Syntegra SMDI Gateway

Do the following procedure.

### To Configure the Syntegra SMDI Gateway

**Step 1** On the Syntegra SMDI Gateway, enter the following settings for the serial data link.

**Table 4** Serial Data Link Settings on the Syntegra SMDI Gateway

Parameter	Setting
Baud Rate	9600
DataBits	8
StopBits	1
Parity	No
Flow Control	No

**Step 2** Save the serial data link settings.

## Configuring the Cisco Unity SMDI Settings

Do the following procedures in the order given.

### To Configure the Cisco Unity SMDI Settings

**Step 1** On the Windows Start menu of the Cisco Unity server, click **Programs > Accessories > Notepad**. The Notepad window appears.

**Step 2** On the File menu, click **Open**.

**Step 3** In the Open dialog box, browse to the \CommServer\IntLib directory, and double-click **Cisco0002.ini**.

**Step 4** At the end of the file, insert the following lines:

```
[Alternate MWI]
Active=Yes
Digit=Z
MWIType=Serial
SerialConfiguration=SMDI
```

**Step 5** Save the file.

**Step 6** On the File menu of the Notepad window, click **Open**.

**Step 7** In the Open dialog box, browse to the \CommServer\IntLib directory, and double-click **Avsmdi.avd**.

**Step 8** Scroll down to the [Configuration] section of the file, and change the following settings as shown.

**Table 5** Configuration Section Settings

Parameter	Setting
DefaultExtLen	<the number of digits in the Syntegra ITS extension numbers>
SwsDefaultExtLen	<the number of digits in the Syntegra ITS extension numbers>

**Table 5** Configuration Section Settings (continued)

Parameter	Setting
<b>Port</b>	<b>1</b> (This setting must match the setting in the Syntegra SMDI gateway.)
<b>Baud</b>	<b>9600</b> (This setting must match the setting in the Syntegra SMDI gateway.)
<b>Parity</b>	<b>None</b> (This setting must match the setting in the Syntegra SMDI gateway.)
<b>DataBits</b>	<b>8</b> (This setting must match the setting in the Syntegra SMDI gateway.)
<b>StopBits</b>	<b>1</b> (This setting must match the setting in the Syntegra SMDI gateway.)

**Step 9** Save the file, and exit Notepad.

**Step 10** For the settings to take effect, restart the Cisco Unity server.

If you want Cisco Unity to update the subscriber MWI when each new voice message arrives, do the following procedure. Otherwise, skip to the [“To Add Syntegra ITS Turret Subscribers in Cisco Unity” procedure on page 8](#).

#### To Configure Cisco Unity to Update MWIs When Each Voice Message Arrives

**Step 1** On the Windows Start menu of the Cisco Unity server, click **Programs > Accessories > Notepad**. The Notepad window appears.

**Step 2** On the File menu, click **Open**.

**Step 3** In the Open dialog box, browse to the \CommServer\IntLib directory, and double-click **Cisco0002.ini**.

**Step 4** In the [Alternate MWI] section of the file, insert the following line:

```
UpdateDisplay=yes
```

**Step 5** Save the file, and exit Notepad.

**Step 6** For the new line to take effect, restart the Cisco Unity server.

#### To Add Syntegra ITS Turret Subscribers in Cisco Unity

**Step 1** In the Cisco Unity Administrator, go to the **Subscribers > Subscribers > Profile** page.

**Step 2** Click the **Add** icon.

**Step 3** If the message store is Microsoft Exchange, select **New Exchange Subscriber**, and then skip to [Step 5](#).

**Step 4** If the message store is IBM Lotus Domino:

- a. Click **Notes**.



**Note** This procedure assumes that the new subscribers have already been entered in Domino. For instructions, refer to the Domino documentation.

- b. In the Address Book list, confirm that the address book listed is the one that contains the user data that you want to import.  
  
If the address book that you want to use is not listed, go to the System > Configuration > Subscriber Address Books page and add a different address book. For details on how to add an address book, see the “Subscriber Address Book Settings” section in the “System Settings” chapter of the *Cisco Unity System Administration Guide* at [http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod\\_maintenance\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod_maintenance_guides_list.html).
- c. In the Find Domino Person By list, indicate whether to search by short name, first name, or last name.
- d. Enter the appropriate short name or name. You also can enter \* to display a list of all users, or enter one or more characters followed by \* to narrow your search.
- e. Click **Find**.
  - f. On the list of matches, click the name of the user to import. The Add Subscriber page appears.

**Step 5** Enter the appropriate information on the Add Subscriber page.

The Extension field must contain the Syntegra ITS turret extension number (for example, 1001).

**Step 6** Click **Add**.

**Step 7** Go to the **Subscribers > Messages** page.

**Step 8** Under Message Waiting Indicators, check the **Use MWI for Message Notification** check box.

**Step 9** Under MWI Extensions, in the Extension field, delete the X, and enter Z.

**Step 10** Go to the **Subscribers > Alternate Extension** page.

**Step 11** Click **Add**.

**Step 12** In the Alternate Extensions field, enter the “phantom” extension on Cisco Unified CM that corresponds to the Syntegra ITS turret extension number (for example 5001).

**Step 13** On the subscriber record, customize other settings as applicable, and then click the **Save** icon.

**Step 14** Repeat [Step 2](#) through [Step 13](#) for each remaining Syntegra ITS turret user that needs voice mail.

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For details on adding or importing subscribers into Cisco Unity, refer to the “Creating Subscriber Accounts” chapter in the *Cisco Unity System Administration Guide* available at [http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod\\_maintenance\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod_maintenance_guides_list.html).

## Testing the Integration

You must test the integration to verify that Cisco Unity and the Syntegra ITS phone system are integrated correctly. Two working extensions are needed, one extension on the Syntegra ITS phone system and the other on the Cisco Unified CM phone system.

To test the integration, call from the Cisco Unified CM extension to the Syntegra ITS extension to verify the following actions:

- A call to an unanswered Syntegra ITS extension is forwarded to Cisco Unity.

- A call to a busy Syntegra ITS extension is forwarded to Cisco Unity.
- When a message is left for a subscriber, the MWI is lit on the Syntegra ITS extension.
- A subscriber can listen to messages from the Syntegra ITS extension without entering the extension.

If any of these test fail, verify the settings described earlier in this guide.

## Integrating a Secondary Server for Cisco Unity Failover

The Cisco Unity failover feature enables a secondary server to provide voice messaging services when the primary server becomes inactive. For information on installing a secondary server for failover, refer to the applicable Cisco Unity installation guide, available at

[http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod_installation_guides_list.html).

For information on failover, refer to the applicable *Cisco Unity Failover Configuration and Administration Guide* at

[http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products\\_feature\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_feature_guides_list.html).

## Requirements

The following components are required to integrate a secondary server:

### Phone System

- A serial data port on the Syntegra SMDI gateway for the data link.
- A data splitter unit to split the single data link into two serial cables.
- Two additional RS-232 serial cables (to be used with the serial cable from the integration of the primary server). With the three serial cables, connect one from the data port on the Syntegra SMDI gateway to the data splitter unit; connect the second from the data splitter unit to the serial port on the primary server; and connect the third from the data splitter unit to the serial port on the secondary server.

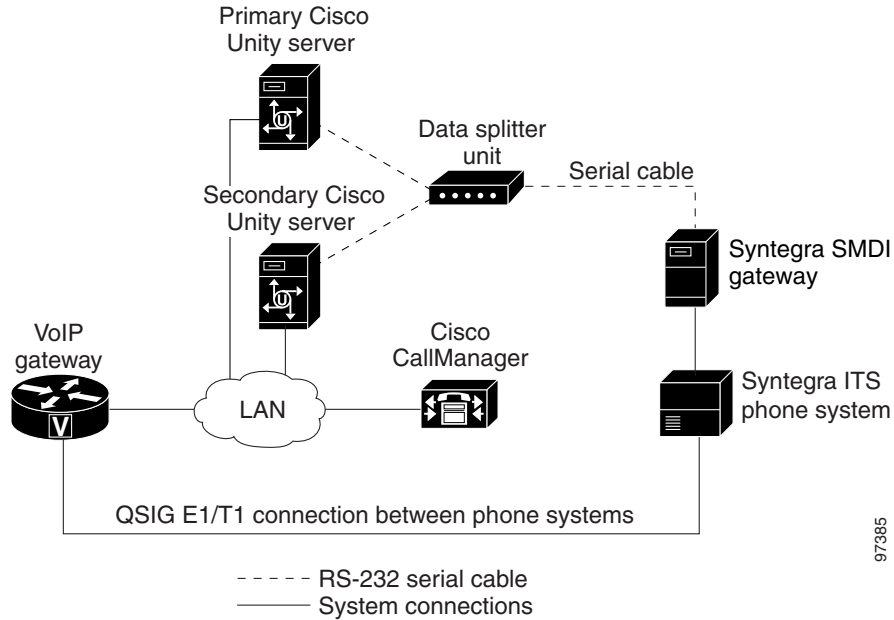
### Cisco Unity Server

- One secondary server for each primary server installed and ready for the integration, as described in the applicable Cisco Unity installation guide and earlier in this integration guide.
- A license that enables failover.

## Integration Description

The phone system communicates with both the primary and secondary servers through the LAN or WAN. The primary and secondary servers use the serial data link to set MWIs on the Syntegra ITS phone system. [Figure 2](#) shows the required connections.

**Figure 2** Connections Between the Syntegra ITS Phone System and Cisco Unity



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The primary and secondary servers act in the following manner:

- When the primary server is operating normally, the secondary server is inactive.
- When the primary server becomes inactive, the secondary server becomes active.
- When the primary server becomes active again, the secondary server becomes inactive.

## Connecting the Syntegra SMDI Gateway to the Cisco Unity Servers

Do the following procedure.

### To Connect the Syntegra SMDI Gateway to the Cisco Unity Servers

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- Step 1** Connect one serial cable from the serial port on the Syntegra SMDI gateway to the data splitter unit.
- Step 2** Connect the remaining two serial cables to the two serial ports on the data splitter unit. Then connect one serial cable to the serial port on the primary server and the other serial cable to the serial port on the secondary server.
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# Appendix: Documentation and Technical Assistance

## Conventions

The *Syntegra ITS SMDI Integration Guide for Cisco Unity 5.0* uses the following conventions.

**Table 6** *Syntegra ITS SMDI Integration Guide for Cisco Unity 5.0 Conventions*

Convention	Description
boldfaced text	Boldfaced text is used for: <ul style="list-style-type: none"> <li>Key and button names. (Example: Click <b>OK</b>.)</li> <li>Information that you enter. (Example: Enter <b>Administrator</b> in the User Name box.)</li> </ul>
< > (angle brackets)	Angle brackets are used around parameters for which you supply a value. (Example: In the Command Prompt window, enter <b>ping &lt;IP address&gt;</b> .)
- (hyphen)	Hyphens separate keys that must be pressed simultaneously. (Example: Press <b>Ctrl-Alt-Delete</b> .)
> (right angle bracket)	A right angle bracket is used to separate selections that you make: <ul style="list-style-type: none"> <li>On menus. (Example: On the Windows Start menu, click <b>Settings &gt; Control Panel &gt; Phone and Modem Options</b>.)</li> <li>In the navigation bar of the Cisco Unity Administrator. (Example: Go to the <b>System &gt; Configuration &gt; Settings</b> page.)</li> </ul>
[x] (square brackets)	Square brackets enclose an optional element (keyword or argument). (Example: [reg-e164])
[x   y] (vertical line)	Square brackets enclosing keywords or arguments separated by a vertical line indicate an optional choice. (Example: [transport tcp   transport udp])
{x   y} (braces)	Braces enclosing keywords or arguments separated by a vertical line indicate a required choice. (Example: {tcp   udp})

The *Syntegra ITS SMDI Integration Guide for Cisco Unity 5.0* also uses the following conventions:



### Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the document.

**Caution**

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

For descriptions and URLs of Cisco Unity documentation on Cisco.com, see the *About Cisco Unity Documentation*. The document is shipped with Cisco Unity and is available at [http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products\\_documentation\\_roadmaps\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_documentation_roadmaps_list.html).

## 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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