



## **Networking in Cisco Unity Guide (With IBM Lotus Domino)**

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## Preface

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This preface describes the purpose, audience, and conventions of the *Networking in Cisco Unity Guide*, and provides information on how to obtain related documentation.

## Purpose

The *Networking in Cisco Unity Guide* introduces you to the various networking options available in Cisco Unity, and explains how to set them up.

The *Networking in Cisco Unity Guide* focuses on Cisco Unity. It does not provide information on Microsoft Exchange, Microsoft Windows NT, Microsoft Windows 2000, and IBM Lotus Domino, or on configuring other voice messaging systems.

## Audience

The *Networking in Cisco Unity Guide* is intended for system administrators and others responsible for setting up and managing Cisco Unity. If you are administering the Cisco Unity server, you need a working knowledge of Windows NT/2000 and of the message store (Domino, Exchange 2000, Exchange 2003, or Exchange 5.5) in which voice messages are stored. If you are setting up Cisco Unity to communicate with other voice messaging systems, you need a working knowledge of those voice messaging systems.

# Document Conventions

This guide uses the following conventions:

**Table 1** *Networking in Cisco Unity Guide 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>

The *Networking in Cisco Unity Guide* 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.

## Cisco Unity Documentation

For descriptions and the URLs of Cisco Unity documentation on Cisco.com, refer to the *Cisco Unity Documentation Guide*. The document is shipped with Cisco Unity and is available at [http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_unity/about/aboutdoc.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/about/aboutdoc.htm).

## Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

## Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

<http://www.cisco.com/univercd/home/home.htm>

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco websites can be accessed from this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

## Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated regularly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual or quarterly subscription.

Registered Cisco.com users can order a single Documentation CD-ROM (product number DOC-CONDOCCD=) through the Cisco Ordering tool:

[http://www.cisco.com/en/US/partner/ordering/ordering\\_place\\_order\\_ordering\\_tool\\_launch.html](http://www.cisco.com/en/US/partner/ordering/ordering_place_order_ordering_tool_launch.html)

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<http://www.cisco.com/en/US/partner/ordering/index.shtml>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

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You can send your comments in e-mail to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems  
 Attn: Customer Document Ordering  
 170 West Tasman Drive  
 San Jose, CA 95134-9883

We appreciate your comments.

## Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance.

### Cisco TAC Website

The Cisco TAC website (<http://www.cisco.com/tac>) provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year.

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

<http://tools.cisco.com/RPF/register/register.do>

### Opening a TAC Case

The online TAC Case Open Tool (<http://www.cisco.com/tac/caseopen>) is the fastest way to open P3 and P4 cases. (Your network is minimally impaired or you require product information). After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using these recommendations, your case will be assigned to a Cisco TAC engineer.

For P1 or P2 cases (your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)  
 EMEA: +32 2 704 55 55  
 USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

### TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—Your network is “down” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Priority 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Priority 3 (P3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

## Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The Cisco Product Catalog describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

[http://www.cisco.com/en/US/products/products\\_catalog\\_links\\_launch.html](http://www.cisco.com/en/US/products/products_catalog_links_launch.html)

- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: Internetworking Terms and Acronyms Dictionary, Internetworking Technology Handbook, Internetworking Troubleshooting Guide, and the Internetworking Design Guide. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

<http://www.ciscopress.com>

- Packet magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:

<http://www.cisco.com/go/packet>

- iQ Magazine is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

[http://www.cisco.com/en/US/about/ac123/ac147/about\\_cisco\\_the\\_internet\\_protocol\\_journal.html](http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html)

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

<http://www.cisco.com/en/US/learning/index.html>





# Networking in Cisco Unity

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## Overview: Networking in Cisco Unity

In Cisco Unity, “networking” is the general term for messaging between Cisco Unity servers, and between Cisco Unity subscribers and individuals who do not use Cisco Unity. The term networking has a broad definition and encompasses the following ideas:

- Subscribers associated with one Cisco Unity server can use the phone to send voice messages to:
  - Subscribers associated with another Cisco Unity server.
  - Individuals with access to a computer connected to the Internet.
- Unidentified callers can find any subscriber in the phone directory and leave a voice message. Depending on the phone system and network configuration, unidentified callers who reach the Cisco Unity automated attendant or directory assistance can be transferred to any subscriber phone, even to the phone of a subscriber who is not associated with the local server. (Note there are limitations to this functionality. See the [“Notable Behavior” section on page 2-16](#) for more information.)

See the [“Digital Networking”](#) and [“Internet Subscribers”](#) chapters for more information.





## Digital Networking

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### Overview: Digital Networking

In organizations with multiple Cisco Unity servers connected to a network with a single, global directory, each Cisco Unity installation serves a distinct group of subscribers. Cisco Unity Digital Networking is the feature that allows subscribers associated with one Cisco Unity server to exchange voice messages with subscribers associated with other Cisco Unity servers. With Digital Networking, subscribers can use the phone to log on to Cisco Unity and send messages to subscribers associated with other Cisco Unity servers.

Digital Networking also provides the means to transfer calls from the automated attendant or directory assistance to subscribers who are not associated with the local server. (Note there are limitations to this functionality. See the [“Notable Behavior” section on page 2-16](#) for more information.) If your organization also has the FaxMail and Text to Speech e-mail features, subscribers can use the phone to forward fax and e-mail messages to any subscriber in the organization.

Although Cisco Unity stores information about subscribers (and other Cisco Unity objects such as call handlers) in a SQL database on the Cisco Unity server, a small subset of information about subscribers, distribution lists, and locations is also stored in the directory to enable Digital Networking. When subscriber and location data from other Cisco Unity servers replicates in the directory, Cisco Unity detects the data and updates the SQL database. Because of directory replication, each Cisco Unity server has the information that it needs to address voice messages to subscribers associated with the other Cisco Unity servers.

The directory in which Cisco Unity stores data is specified when Cisco Unity is set up. During setup, you specify one Domino server (the partner Domino server) through which Cisco Unity communicates with other Domino servers in the network. You also specify an address book (or directory) that Cisco Unity uses to import users from. This is the directory that Cisco Unity monitors for data from other Cisco Unity servers.

### Requirements for Setting Up Digital Networking

To use Digital Networking:

- The partner Domino servers must be in the same Notes domain.
- Each Cisco Unity server must be set up to monitor the primary Domino Directory for the domain names.nsf.

No special permissions are required for Digital Networking beyond those required for each Cisco Unity server. For detailed information about the permissions required by Cisco Unity, see the Help file for the Permissions Wizard, which is available in Tools Depot on the Cisco Unity server.

## Licenses

Digital Networking is enabled on every Cisco Unity server. There are no additional licenses that you need to obtain to set up Digital Networking.

### License Pooling

Though you do not need a license for Digital Networking, you may want to add a licensed feature called license pooling. License pooling allows Cisco Unity servers that are set up for Digital Networking to pool licenses for subscribers. With license pooling, if total utilization across all the Cisco Unity servers does not exceed total licenses for the feature, the Cisco Unity server is in compliance with licensing restrictions. For example, suppose two Cisco Unity servers each have 500 licenses for subscribers. With license pooling, one of the servers can use 501 or more licenses as long as the total used by both servers does not exceed 1,000.

For each Cisco Unity server, you can choose whether it will participate in the pool. To place a Cisco Unity server in the pool, install a license file containing the license pooling feature on the server. If the license pooling feature is not installed on a Cisco Unity server, the server does not participate in the pool, and compliance for all features is measured on a per-machine basis.

For all licensed features other than subscriber licenses, licensing is on a per-machine basis. Licensing information is stored with the primary location for each Cisco Unity server. Because location data is stored in the directory, each Cisco Unity server has the information that it needs to keep track of license usage in the pool.

### To View the License Pooling Information

- 
- Step 1** On a Cisco Unity server where pooling is enabled, double-click the **Cisco Unity Tools Depot** icon on the desktop.
  - Step 2** In the left pane of the Tools Depot window, expand **Administration Tools**.
  - Step 3** Double-click **License Info Viewer**.
  - Step 4** Under Cisco Unity Licensing, expand **License Pool**.
  - Step 5** Under License Pool, click **Subscriber Mailboxes**, **Maximum Unified Messaging Subscribers**, or **Cisco Unity Inbox Subscribers**.
  - Step 6** In the right pane, the names of the networked servers that share the subscriber license appear.
- 

For more information about license pooling and obtaining licenses for Cisco Unity features, refer to *White Paper: Licensing for Cisco Unity*, which is available at [http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_unity/whitpapr/licenses.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/whitpapr/licenses.htm).

## Identified Subscriber Messaging Between Networked Cisco Unity Servers

When a subscriber calls another subscriber who is associated with a different Cisco Unity server, and if the call is forwarded to voice mail (because the recipient phone is busy or is not answered), the ability of Cisco Unity to identify that it was a subscriber who left the message is referred to as identified subscriber messaging. Identified subscriber messaging is fully functional in Cisco Unity 4.0(3) and later. For identified subscriber messaging to work, all the Cisco Unity servers must be running 4.0(3) or later.

Note that identified subscriber messaging between Cisco Unity servers is by default not enabled. See the “[Enabling Identified Subscriber Messaging Between Networked Cisco Unity Servers](#)” section on page 2-7.

Identified subscriber messaging works only for regular Cisco Unity subscribers and not for Internet subscribers (also referred to as external subscribers). When a person on a remote voice messaging system who has a corresponding external subscriber account calls a Cisco Unity subscriber and leaves a message, Cisco Unity does not identify the message as being from the external subscriber. In this case, when the phone system forwards the call to Cisco Unity, the message is handled as though it came from an unidentified caller. This means that:

- Cisco Unity does not play the internal greeting of the subscriber when the caller leaves a message.
- Cisco Unity does not play the recorded voice name of the external subscriber when the recipient listens to the message.
- Cisco Unity does not allow the recipient to record a reply.

However, when a person on the remote voice messaging system records and sends a message to a Cisco Unity subscriber, Cisco Unity can identify the message as being from the corresponding external subscriber. In this case, the phone system is not involved and the recipient phone does not ring. Instead, the message is sent directly from the remote voice messaging server to Cisco Unity, and then to Exchange, which delivers the message to the recipient. Thus, when the recipient listens to the message, Cisco Unity plays the recorded name of the external subscriber, and allows the recipient to record a reply.

For more information about the limitations that subscribers encounter when identified subscriber messaging is limited to a single server, see the “[Leaving a Message Versus Sending a Message: Limitations with Identified Subscriber Messaging in Previous Versions of Cisco Unity](#)” section on page 2-16.

## In This Chapter

In this chapter, you will find procedures for setting up Digital Networking, followed by detailed discussions of the concepts and terminology you need to understand. See the following sections:

- [Task List: Setting Up Digital Networking, page 2-4](#)—This task list provides a high-level overview of all of the tasks you need to complete, and the order in which they should be completed.
- [Procedures for Setting Up Cisco Unity to Use Digital Networking, page 2-4](#)—This section contains all of the procedures necessary to set up Cisco Unity for Digital Networking.
- [Digital Networking Concepts and Definitions, page 2-8](#)—This section explains Digital Networking concepts in detail. You may want to read this section prior to completing the setup procedures.
- [Notable Behavior, page 2-16](#)—This section contains information about notable behavior related to Digital Networking.

### Related Documentation

- “Accessing Voice Mail in Multiple Unity Server Environments”—available at [http://www.cisco.com/warp/public/788/AVVID/one\\_message\\_button\\_two\\_unity\\_servers.html](http://www.cisco.com/warp/public/788/AVVID/one_message_button_two_unity_servers.html).

## Task List: Setting Up Digital Networking

Use this task list to set up Digital Networking on each Cisco Unity server. The list assumes that Cisco Unity is already installed on the servers and that they are connected to the network. The cross-references take you to detailed procedures.

1. Review the “[Requirements for Setting Up Digital Networking](#)” section on page 2-1.
2. Verify that each Cisco Unity server is set up to use the same domain and address book. See the “[Verifying the Address Book Used by Each Cisco Unity Server](#)” section on page 2-4.
3. Customize the primary location. See the “[Customizing the Primary Location](#)” section on page 2-4.
4. Set the addressing, directory handler, and automated attendant search scopes. See the “[Setting the Addressing, Directory Handler, and Automated Attendant Search Scopes](#)” section on page 2-5. The Automated Attendant search option must be set to search the dialing domain in order for identified subscriber messaging to work.
5. In Cisco Unity 4.0(3) and later, enable identified subscriber messaging. See the “[Enabling Identified Subscriber Messaging Between Networked Cisco Unity Servers](#)” section on page 2-7.
6. Optionally, add alternate extensions to each subscriber account. Refer to the “Subscriber Alternate Extension Settings” section in the “Subscriber Settings” chapter of the *Cisco Unity System Administration Guide* for instructions. The *Cisco Unity System Administration Guide* is available at [http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_unity/unity40/sag/sag403/dom/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/sag/sag403/dom/index.htm).
7. Test the Digital Networking setup. See the “[Testing the Digital Networking Setup](#)” section on page 2-7.

## Procedures for Setting Up Cisco Unity to Use Digital Networking

This section contains all of the procedures necessary to set up Cisco Unity for Digital Networking.

### Verifying the Address Book Used by Each Cisco Unity Server

#### To Verify the Address Book Used by Each Cisco Unity Server

- 
- |               |   |
|---------------|---|
| <b>Step 1</b> | In the Cisco Unity Administrator of each Cisco Unity server that you are setting up, go to the <b>System Settings &gt; Configuration &gt; Subscriber Address Books</b> page.                |
| <b>Step 2</b> | Verify that the domain and address book listed on this page are the same for all of the Cisco Unity servers. The address book must be the primary Domino Directory in the domain names.nsf. |
- 

### Customizing the Primary Location

See [Table 4-1 on page 4-3](#) for detailed information about the primary location profile settings.

### To Customize the Primary Location

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- Step 1** In the Cisco Unity Administrator, go to the **Network > Primary Location > Profile** page.
- Step 2** Enter a meaningful name for the location.
- Step 3** Enter a Dial ID. The Dial ID identifies this location to Cisco Unity.
- Step 4** Record a voice name for the location.
- Step 5** For the dialing domain, do one of the following:
- If this server is not intended to belong to a dialing domain, click **None**.
  - If this server is intended to belong to a dialing domain, enter the dialing domain name, or select it from the available list. The list contains names of dialing domain names already configured on at least one other Cisco Unity server in the network.

Note that the dialing domain name is case sensitive and must be entered exactly the same on all of the servers. To ensure that all servers are correctly added to the same dialing domain, enter the dialing domain name on one Cisco Unity server and wait for the name to replicate to the other Cisco Unity servers. By doing so, you also confirm that replication is working correctly among the servers. The time that it takes for the primary location data from other Cisco Unity servers to be reflected on the local server depends on your network configuration and replication schedule.

---

## Setting the Addressing, Directory Handler, and Automated Attendant Search Scopes

Before changing the directory handler or automated attendant search scopes, see the [“Call Transfer Settings Unavailable”](#) section on page 2-16.

Do the procedures in the following sections to set up the search scopes.

- [Setting the Addressing Search Scope, page 2-5](#)
- [Setting the Directory Handler Search Scope, page 2-6](#)
- [Setting the Automated Attendant Search Scope, page 2-6](#)

### Setting the Addressing Search Scope

For detailed information about the addressing search options, see the [“Primary Location Addressing Option Settings”](#) section on page 4-4.

#### To Set the Addressing Search Scope

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- Step 1** In the Cisco Unity Administrator, go to the **Network > Primary Location > Addressing Options** page and set the addressing options as necessary.
- To allow subscribers created on the local Cisco Unity server to address messages to subscribers on other Cisco Unity servers that access the same directory, select **Dialing Domain** or **Global Directory**, as applicable.

- Step 2** If you want locations included in address searches, check the **Include Locations in Searches** check box. In addition to matching subscribers, location matches will also be returned. Confirming the match of a location allows a secondary search of the subscribers that are associated with that location.
- Step 3** Click the **Save** icon.
- 

## Setting the Directory Handler Search Scope

For detailed information about directory handler search options, refer to the “Directory Handler Search Options Settings” section in the “Directory Handler Settings” chapter of the *Cisco Unity System Administration Guide*. (The *Cisco Unity System Administration Guide* is available at [http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_unity/unity40/sag/sag403/dom/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/sag/sag403/dom/index.htm).)

### To Set the Directory Handler Search Scope

- Step 1** In the Cisco Unity Administrator, go to the **Call Management > Directory Handlers > Search Options** page, and modify the search options for an existing directory handler, or create a new directory handler for unidentified callers who use directory assistance.
- Step 2** To allow subscribers on other Cisco Unity servers in the dialing domain to be located in directory assistance, click **Dialing Domain**.
- Step 3** Click the **Save** icon.
- 

## Setting the Automated Attendant Search Scope

By default, callers who reach the opening greeting for your organization can be transferred only to subscribers associated with the local Cisco Unity server. If you want to set up the automated attendant so that callers can be transferred to subscribers associated with other Cisco Unity servers in the same dialing domain, change a registry setting as described in the following procedure.

The automated attendant search scope must be set to search the dialing domain in order for identified subscriber messaging between networked Cisco Unity servers to work.

### To Set the Automated Attendant Search Scope

- 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 **Set Auto Attendant Search Scope**.
- Step 4** In the New Value list, click **1**, and then click **Set** so that Cisco Unity searches for subscribers within the dialing domain.
- Step 5** When prompted, click **OK**.  
You do not need to restart Cisco Unity to enable the change.
- Step 6** Click **Exit**.
-

## Enabling Identified Subscriber Messaging Between Networked Cisco Unity Servers

Two different settings control whether identified subscriber messaging is enabled between networked Cisco Unity servers:

- The automated attendant search scope on each server must be set to the dialing domain as described in the “[Setting the Automated Attendant Search Scope](#)” section on page 2-6.
- Identified subscriber messaging on each server must be enabled in the Cisco Unity Administrator as described in the following procedure “[To Enable Identified Subscriber Messaging in the Cisco Unity Administrator](#).”

### To Enable Identified Subscriber Messaging in the Cisco Unity Administrator

---

- Step 1** In the Cisco Unity Administrator, go to the **System > Configuration Settings** page.
- Step 2** In the Identified Subscriber Messaging section, uncheck the **Subscribers Are Identified as Message Senders Only if They Log On** check box.
- Identified subscriber messaging is enabled when the check box is unchecked.
- Step 3** Click the **Save** icon.
- 

## Testing the Digital Networking Setup

To test the Digital Networking setup, create test subscriber accounts or use existing subscriber accounts on each Cisco Unity server. When setting up subscriber accounts in the Cisco Unity Administrator to be used in the tests, be sure to:

- Record voice names.
- Record and enable internal greetings.
- Check the List in Phone Directory check box on the Subscriber Profile page.
- Check the Before Playing Each Message, Play the Sender’s Name check box on the Subscriber Conversation page.

Do the following tests to make sure Digital Networking is functioning properly:

1. Verify that messaging between subscribers on different Cisco Unity servers works in both directions (for example, from server A to server B and from server B to server A). Log on to a Cisco Unity server as a subscriber, and send messages to subscribers associated with other Cisco Unity server(s). Verify that:
  - The recipient receives the message.
  - When the recipient listens to the message, the subscriber conversation announces who the message is from by playing the recorded voice name of the sending subscriber.
  - After listening to the message, the subscriber conversation allows the recipient to reply to the message.
2. If the directory handler search scope is set to search the dialing domain, verify that outside callers can find subscribers associated with other Cisco Unity servers in the phone directory. From a non-subscriber phone, call the automated attendant of a Cisco Unity server, and transfer to a

directory handler. Verify that you can find a subscriber associated with another Cisco Unity server in the phone directory, and that the directory handler transfers the call to the appropriate subscriber phone.

3. If the automated attendant search scope is set to search the dialing domain, verify that outside callers are transferred to subscribers associated with other Cisco Unity servers. From a non-subscriber phone, call the automated attendant of a Cisco Unity server and enter the extension of a subscriber associated with another Cisco Unity server. Verify that you reach the appropriate subscriber phone.

### Testing Identified Subscriber Messaging

In Cisco Unity 4.0(3) and later, test that identified subscriber messaging is functioning properly. Verify that the following have been set correctly:

- In the Cisco Unity Administrator, on the System Settings > Configuration Settings page, the Subscribers Are Identified as Message Senders Only if They Log On check box is not checked.
- The automated attendant search scope is set to search the dialing domain.

Do the following tests to make sure identified subscribing messaging is functioning properly:

1. Verify that Cisco Unity plays an internal greeting for subscribers who are leaving messages. From a subscriber phone, call a subscriber associated with another Cisco Unity server, and let the call be forwarded to voice mail. Verify that the internal greeting is played before you leave a message.
2. Verify that subscribers are identified when a recipient listens to a message. From a subscriber phone, call a subscriber associated with another Cisco Unity server, and let the call be forwarded to voice mail. Leave a message for the subscriber. When the recipient listens to the test message over the phone, verify that:
  - The subscriber conversation announces who the message is from by playing the recorded voice name of the sending subscriber.
  - The subscriber conversation allows the recipient to reply to the message after the message has been listened to.

## Digital Networking Concepts and Definitions

The following sections explain Digital Networking concepts in detail:

- [Locations and Digital Networking, page 2-9](#)
- [Dialing Domains, page 2-9](#)
- [Networked Phone Systems and Dialing Domains, page 2-11](#)
- [Addressing Options for Non-Networked Phone Systems, page 2-12](#)
- [Cisco Unity Administrator Scope, page 2-13](#)
- [Granting Administrative Rights to Other Cisco Unity Servers, page 2-15](#)
- [Distribution Lists, page 2-15](#)

## Locations and Digital Networking

Central to how Digital Networking works is a Cisco Unity object called a location. Each Cisco Unity server is associated with one location—referred to as the default or primary location—which is created during installation and which cannot be deleted. With the exception of public distribution lists, all subscribers and other Cisco Unity objects (such as call handlers) created on your Cisco Unity server are associated with the primary location.

Each primary location contains the addressing information that Cisco Unity needs to route messages between Cisco Unity servers. Because Cisco Unity stores location and subscriber addressing information in the directory, the addressing information replicates to other Cisco Unity servers on the network.

The primary location also contains a Dial ID, which Cisco Unity uses as an identifier for the location. Carefully plan the numbers that you choose as Dial IDs for the primary location. Without careful planning, it is possible to inadvertently assign Dial IDs that will cause problems in locating message recipients at another location. See the [“Assigning Dial IDs” section on page 4-1](#) and the [“Location Addressing Options Settings” section on page 4-8](#) for more information.

## Dialing Domains

A dialing domain—a collection of Cisco Unity servers that are integrated with the same phone system or phone system network—is a grouping scheme that allows Cisco Unity to handle overlapping numbering plans. Within the dialing domain, subscriber extensions in Cisco Unity must be unique just as the phone extensions in the phone system must be unique. (Typically, a subscriber extension and phone extension are the same number.) With a networked phone system, subscribers dial a phone extension without having to dial a trunk access code or prefix when calling someone who is at another location on the phone network. In the same way, when grouped in a dialing domain, subscribers associated with one Cisco Unity server enter a subscriber extension when sending messages to subscribers associated with another Cisco Unity server.

If you group the Cisco Unity servers that are integrated with a networked phone system into a dialing domain, you can set the directory handler and automated attendant search scopes so that outside callers can be transferred to subscribers associated with other Cisco Unity servers in the same dialing domain.

A dialing domain provides a means to set the scope for searches that Cisco Unity performs, in the following cases:

- When a subscriber addresses a message
- When members are being added to a public or private distribution list
- When callers reach the opening greeting for your company
- When callers use directory assistance

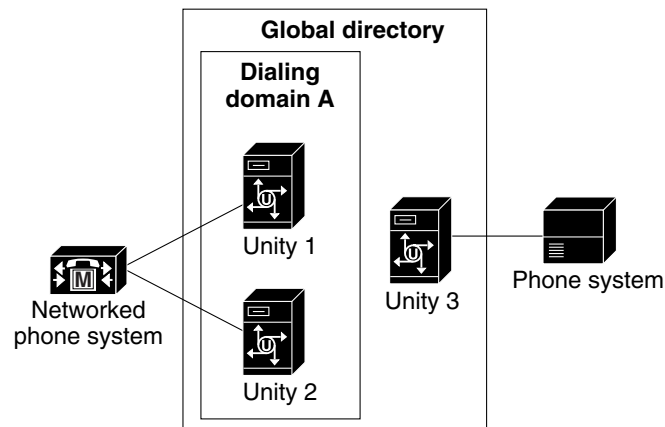
For example, when a subscriber addresses a message by entering a number, Cisco Unity first searches the local Cisco Unity server for a matching extension. If a match is not found, Cisco Unity searches in the dialing domain for a matching extension. When Cisco Unity finds a matching extension at any scope level, the search is stopped and voice name confirmation is provided to the subscriber sending the message. Because Cisco Unity searches by expanding the search scope in stages—starting with the local server, then the dialing domain, and then the global directory—and because Cisco Unity does not continue the search to the next scope level when it has found a matching extension, conflicts with extensions outside of the dialing domain are avoided.

Although subscriber extensions are supposed to be unique within a dialing domain, it is possible that you could inadvertently create a subscriber account with a non-unique extension, due to directory replication lag time. If Cisco Unity finds more than one matching extension (at any scope level), it returns a list to the subscriber sending the message (for example, “There are two matching names. For Terry Campbell at extension 3047, press 1. For Kelly Bader at extension 3047, press 2.”). For more information, see the [“Location Addressing Options Settings”](#) section on page 4-8.

## Dialing Domains Shield Against Overlapping Numbering Plans

Grouping the Cisco Unity servers that are integrated with a networked phone system into a dialing domain allows Cisco Unity to handle overlapping numbering plans when there are other Cisco Unity servers in the same global directory that are integrated with another phone system. The scenario of separate phone systems with a shared directory is illustrated in [Figure 2-1](#). In this scenario, it is possible that subscribers associated with the Cisco Unity server outside of the dialing domain could have extensions that are the same as extensions used by subscribers associated with the servers within the dialing domain. The dialing domain allows the subscribers within the dialing domain to use extensions to address messages without conflicting with the extensions of the subscribers on the other phone system.

**Figure 2-1** Dialing Domain



Assume that subscriber extensions on Unity 3 in [Figure 2-1](#) overlap with extensions in dialing domain A. To allow subscribers associated with Unity 3 to use the phone to address messages to subscribers in the dialing domain, and vice-versa, you have the following choices:

- Instruct subscribers to enter one number that consists of the primary location Dial ID of the destination Cisco Unity server and the extension of the recipient.
- Set up alternate extensions for each subscriber account. For each subscriber, enter a number for the alternate extension that is the same as the full phone number for the subscriber. In this way, when subscribers log on to Cisco Unity to send messages, the number they enter when addressing messages is the same number that they use when calling.
- Enable the Include Locations in Searches setting. When this setting is enabled, subscribers address a message in two steps: they first enter the location Dial ID (or spell the name of the location) and then enter the extension (or spell the recipient name). See [Table 4-1 on page 4-3](#) for more information.

## Automated Attendant and Directory Handler Search Scopes

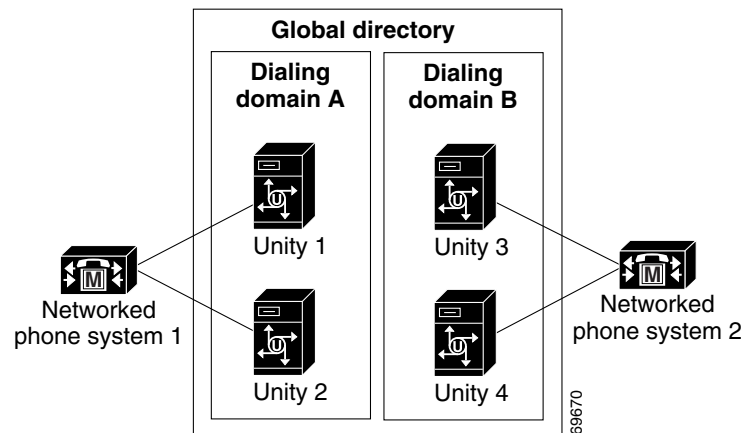
The automated attendant and directory handler search scopes have two settings: local server and dialing domain; there is no global directory search scope setting. Therefore, even if your numbering plans do not overlap, you must create a dialing domain to expand the automated attendant and directory handler search scopes beyond the local server.

Setting the automated attendant to a dialing domain scope is required for identified subscriber messaging to work between networked Cisco Unity servers, as described in the [“Enabling Identified Subscriber Messaging Between Networked Cisco Unity Servers”](#) section on page 2-7.

## Networked Phone Systems and Dialing Domains

With a networked phone system, subscribers dial an extension rather than a full phone number when calling someone who is at another location on the phone network. To allow Cisco Unity to make use of this feature, the Cisco Unity servers that are integrated with the networked phone system must be added to a dialing domain. (See the [“Dialing Domains”](#) section on page 2-9 for more information.) Subscriber extensions must be unique within the dialing domain. As [Figure 2-2](#) illustrates, dialing domains provide a way to segment the global directory.

**Figure 2-2** Dialing Domains Segment the Global Directory



When dialing domains are used:

- Subscribers can address messages to subscribers associated with other Cisco Unity servers in the dialing domain by dialing the same number that they use when calling those subscribers.
- The automated attendant on a Cisco Unity server can transfer calls to subscribers associated with any Cisco Unity server within the dialing domain.
- Callers can use directory assistance to search for subscribers associated with any of the Cisco Unity servers within the dialing domain, and then be transferred. (However, note that you can restrict the directory assistance search to the local Cisco Unity server, if desired.)

Note the limitations described in the [“Notable Behavior”](#) section on page 2-16.

## Addressing Options for Non-Networked Phone Systems

If your organization has a separate phone system for each location, subscribers at one location dial a complete phone number, not just an extension, when calling someone at another location. When subscribers log on to Cisco Unity to send messages to subscribers on another Cisco Unity server, the number they enter when addressing the message depends on whether the Cisco Unity numbering plans overlap across locations, as described in the following sections.

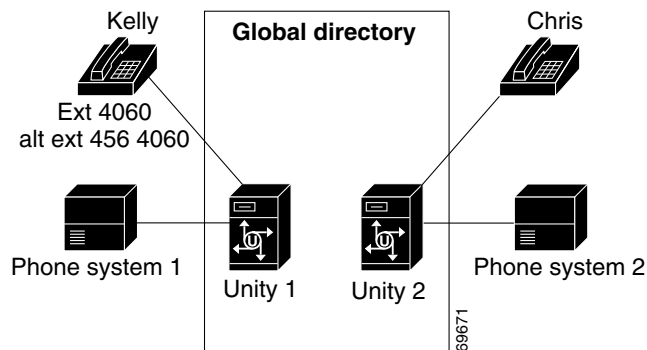
### When Numbering Plans Do Not Overlap

When Cisco Unity numbering plans do not overlap across locations—that is, when subscriber extensions are unique across locations—subscribers enter an extension when addressing a message to a subscriber who is associated with another Cisco Unity server.

As a convenience for subscribers, you may choose to add alternate extensions to each subscriber account. With alternate extensions, the number that a subscriber enters when addressing a message to someone at another location can be the same number that the subscriber dials when calling. When set up this way, subscribers do not need to remember two different numbers—one for calling a subscriber directly, and one for addressing a message.

For example, a subscriber, Kelly Bader, has subscriber extension 4060, as illustrated in [Figure 2-3](#). Suppose that Chris, a subscriber at a remote location, dials 456-4060 to reach Kelly by phone. When Chris logs on to Cisco Unity to send a message to Kelly, he has to remember just to dial the extension (4060) and not dial the prefix (456) when addressing the message, rather than using the same number he dials to call Kelly. However, you could assign to Kelly the alternate extension 4564060. If this alternate extension has been set up, Chris can enter either 4060 or 4564060 when addressing a message to Kelly.

**Figure 2-3** No Overlapping Extensions



If the numbering plans for each location do not overlap, setting up alternate extensions is optional because they are simply a convenience for subscribers. However, if you do not set up alternate extensions, be sure to tell subscribers to use the extension instead of the full phone number when addressing messages to subscribers associated with another location.

Note that alternate extensions have other purposes beyond their use in Digital Networking, such as handling multiple line appearances on subscriber phones. Subscribers can have up to nine alternate extensions. For more information, refer to the “Subscriber Alternate Extension Settings” section in the “Subscriber Settings” chapter of the *Cisco Unity System Administration Guide*. (The *Cisco Unity System Administration Guide* is available at [http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_unity/unity40/sag/sag403/dom/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/sag/sag403/dom/index.htm).)

## When Numbering Plans Overlap

When numbering plans overlap across locations, you have the following options:

- Instruct subscribers to enter one number that consists of the primary location Dial ID of the destination Cisco Unity server and the extension of the recipient.
- Set up alternate extensions for each subscriber account. For each subscriber, enter a number for the alternate extension that is the same as the full phone number for the subscriber. In this way, when subscribers log on to Cisco Unity to send messages, the number they enter when addressing messages is the same number that they use when calling.
- Enable the Include Locations in Searches setting. When this setting is enabled, subscribers address a message in two steps: they first dial the location Dial ID, and then dial the extension when prompted. See [Table 4-3 on page 4-8](#) for more information.

When a subscriber addresses a message, Cisco Unity searches for a matching extension on the local Cisco Unity server first. If a match is found, Cisco Unity ends the search and never looks for a matching extension at another location. Therefore, if a local subscriber and a subscriber on another Cisco Unity server have the same extension, Cisco Unity will find only the subscriber on the local Cisco Unity server. However, when one of the options described above is set up, subscribers on the local server will be able to address messages to subscribers on other Cisco Unity servers.

## Cisco Unity Administrator Scope

With the exception of public distribution lists, all subscribers and other Cisco Unity objects (such as call handlers) created on your Cisco Unity server are associated with the primary location of your server. Because of this association, if you want to access the subscriber accounts and other objects created on another server, you need to run the Cisco Unity Administrator of the server that the object was created on. Note that you can view information about the primary locations of other servers, but you cannot modify or delete them.

The following sections provide information about accessing the Cisco Unity Administrator on other servers:

- [Browsing to Another Cisco Unity Administrator from the Local Cisco Unity Administrator, page 2-13](#)
- [Searching for Subscriber Accounts Created on Another Cisco Unity Server, page 2-14](#)
- [Using Global Subscriber Manager to Browse to Another Cisco Unity Administrator, page 2-14](#)

## Browsing to Another Cisco Unity Administrator from the Local Cisco Unity Administrator

The Cisco Unity Administrator on the local server provides links to the Cisco Unity Administrator of other servers. To access the data of any object that was created on another Cisco Unity server, you need to know the name of the server on which the object was created.

### To Browse to Another Cisco Unity Administrator on a Networked Cisco Unity Server

- 
- Step 1** Near the bottom of the navigation bar on the left side of the Cisco Unity Administrator interface, click **Unity Servers**. The Server Chooser page appears.
- Step 2** From the list, click the server that you want to access.

**Step 3** If prompted, enter the appropriate credentials to gain access to the Cisco Unity Administrator that you want to access.

Another instance of the Cisco Unity Administrator appears in a separate browser window. This is the Cisco Unity Administrator of the server that you selected.

---

## Searching for Subscriber Accounts Created on Another Cisco Unity Server

Within the local Cisco Unity Administrator, you can search for subscribers on other Cisco Unity servers, and when you select a subscriber account to edit settings, the applicable Cisco Unity Administrator is launched. Do the following procedure to use the Cisco Unity Administrator on your local Cisco Unity server to search for subscriber accounts on other Cisco Unity servers in the network.

### To Search for Subscriber Accounts Created on a Cisco Unity Server Other than Your Local Cisco Unity Server

---

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

**Step 2** Click the **Find** icon.

**Step 3** Indicate whether to search by short name, extension, first name, or last name.

**Step 4** Enter the appropriate short name, extension, or name. You also can enter \* to display a list of all subscribers, or enter one or more characters or values followed by \* to narrow your search.

**Step 5** Check the **Search All Cisco Unity Servers** check box.

**Step 6** Click **Find**.

**Step 7** On the list of matches, click the name of the subscriber to display the record.

**Step 8** If prompted, enter the appropriate credentials to gain access to the Cisco Unity Administrator that you want to access.

Another instance of the Cisco Unity Administrator appears in a separate browser window. This is the Cisco Unity Administrator website of the Cisco Unity server on which the subscriber account was created. The subscriber profile page is displayed in the new browser window.

---

## Using Global Subscriber Manager to Browse to Another Cisco Unity Administrator

You can also use the Global Subscriber Manager (GSM) from Tools Depot to launch the Cisco Unity Administrator on another server. The GSM shows your entire Cisco Unity network broken down by dialing domains and servers. The GSM allows you to quickly locate individual subscribers and launch the Cisco Unity Administrator for the subscribers regardless of which server they are homed on. You can select any scope you want and see all of the subscribers at that level. Searching can be done by dialing domain, by server, or globally across the entire Cisco Unity network.

### To Use the GSM

---

**Step 1** On the Cisco Unity server desktop, double-click the **Cisco Unity Tools Depot** icon.

**Step 2** In the left pane, double-click **Global Subscriber Manager**.

Double-click the subscriber account that you want to edit. The applicable Cisco Unity Administrator will be displayed in a browser window. Refer to the GSM Help file for more information.

---

## Granting Administrative Rights to Other Cisco Unity Servers

To access the Cisco Unity Administrator on another server, the administrators on the local Cisco Unity server need the applicable class of service (COS) rights. The easiest way to set this up is to run the GrantUnityAccess utility. Refer to the “Granting Administrative Rights to Other Cisco Unity Servers” section in the “Accessing the Cisco Unity Administrator” chapter in the *Cisco Unity System Administration Guide* for instructions. (The *Cisco Unity System Administration Guide* is available at [http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_unity/unity40/sag/sag403/dom/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/sag/sag403/dom/index.htm).)

## Distribution Lists

Public distribution lists are not associated with a specific primary location. If a list has a recorded voice name, an extension, or both, subscribers can address messages to it—if allowed by their class of service—regardless of which location created the list.

### New Lists

When you create a new public distribution list, keep in mind the following:

- The extension for the list must be unique among locations in the entire directory. Therefore, you need to know which extensions are in use at other locations before assigning an extension to the new list.
- In the Cisco Unity Administrator, you can add members from multiple locations to a list, if allowed by the Addressing Options settings for the default location on your Cisco Unity server. See the “Primary Location Addressing Option Settings” section on page 4-4 for more information.
- In the Cisco Unity Administrator, you can view all members of a list regardless of the location with which the member is associated.

### Predefined Public Distribution Lists

Cisco Unity includes the following predefined public distribution lists: All Subscribers, Unaddressed Messages, and System Event Messages. Each Cisco Unity server in your organization has a distinct version of each of these lists. When you view these lists in the Cisco Unity Administrator, the Cisco Unity server name is appended to the list name.



#### Tip

Distribution lists can be nested, that is, a distribution list can contain other lists. If desired, you can create one master All Subscribers distribution list that contains the All Subscribers list of each Cisco Unity server.

---

### Private Lists

When creating private lists, subscribers can add members from other locations if allowed by the Addressing Options settings for your default location. The location addressing options allow you to control the search that Cisco Unity performs when a subscriber adds members to a private list and when a subscriber addresses a message. For more information, see the “Primary Location Addressing Option Settings” section on page 4-4.

## Notable Behavior

This section provides information about notable expected behavior associated with Digital Networking. See the following sections for more information:

- [Call Transfer Settings Unavailable, page 2-16](#)
- [Leaving a Message Versus Sending a Message: Limitations with Identified Subscriber Messaging in Previous Versions of Cisco Unity, page 2-16](#)
- [Mapping Subscribers to Cisco Unity Servers, page 2-17](#)

## Call Transfer Settings Unavailable

In installations with multiple Cisco Unity servers, call transfer settings are not replicated among the Cisco Unity servers. When calls are transferred from the automated attendant or directory assistance to subscribers who are not associated with the local server, the transfers are automatically handled by the phone system (release to switch)—rather than by Cisco Unity (supervised transfer)—even if these subscribers are set up for supervised transfers. Note the following limitations:

- The subscriber call screening, call holding, and announce features that are available with supervised transfers are not available on calls that have been transferred via release to switch.
- Cisco Unity cannot take messages for subscribers (either regular Cisco Unity subscribers or Internet subscribers) who do not have phones on the phone system that Cisco Unity is integrated with. On a release to switch transfer, Cisco Unity dials the subscriber extension and hangs up. What happens to the call after that depends on how the phone system is configured. If you do not configure the phone system, the call may be dropped.

If you want outside callers who reach the opening greeting to be able to leave messages for subscribers who do not have phones, the callers must call into the Cisco Unity server on which the subscribers were created so that the call transfer settings are available. Additionally, you may want to consider limiting the search scope of directory handlers and the automated attendant to the local server.

## Leaving a Message Versus Sending a Message: Limitations with Identified Subscriber Messaging in Previous Versions of Cisco Unity

The limitations with identified subscriber messaging described in this section exist in Cisco Unity versions 4.0(1) and 4.0(2). Identified subscriber messaging is fully functional in Cisco Unity 4.0(3) and later. In installations with different versions of Cisco Unity, in order for identified subscriber messaging to be fully functional, all Cisco Unity servers must be running Cisco Unity 4.0(3) or later. (Note that identified subscriber messaging between Cisco Unity servers is by default not enabled. See the [“Enabling Identified Subscriber Messaging Between Networked Cisco Unity Servers”](#) section on [page 2-7](#) for information.)

When a subscriber on one Cisco Unity server calls a subscriber on a different Cisco Unity server and leaves a message, Cisco Unity does not identify the message as being from a subscriber. That is, identified subscriber messaging does not work, and instead, the call is handled as though it came from an unidentified caller. This means that:

- Cisco Unity does not play the subscriber internal greeting when the caller leaves a message.
- Cisco Unity does not play the recorded voice name of the calling subscriber when the recipient listens to the message.

- Cisco Unity does not allow the recipient to record a reply.

However, Cisco Unity can identify the message as being from a subscriber when a subscriber calls another subscriber who is on the same Cisco Unity server and leaves a message (in which case the above limitations do not apply). If the discrepancy in behavior is a concern to subscribers, you may want to consider disabling identified subscriber messaging on each Cisco Unity server. To disable identified subscriber messaging, do not check the **Subscribers Are Identified as Message Senders Only if They Log On** check box in the Cisco Unity Administrator on the **Configuration > Settings** page.

It is important to note the difference when a subscriber first logs on to Cisco Unity, and then records and sends a message (as opposed to placing a phone call, and then leaving a message because the intended recipient does not answer the call). When the subscriber has logged on to Cisco Unity, Cisco Unity can identify the message sent as being from the subscriber, regardless of which Cisco Unity server the message recipient is homed on. In this case, the phone system is not involved and the recipient phone does not ring. Instead, the message is sent via Digital Networking. Thus, when the recipient listens to the message, Cisco Unity plays the recorded name of the sending subscriber, and allows the recipient to record a reply.

## Live Reply Unavailable

When a subscriber on one Cisco Unity server either sends or leaves a message for a subscriber on a different Cisco Unity server, the live reply feature is unavailable for the subscriber listening to messages by phone. Live reply is only available when the subscriber who left the message is homed on the same Cisco Unity server as the subscriber attempting to reply. For more information about live reply, see the “Class of Service Messages Settings” section in “Class of Service Settings” chapter in the *Cisco Unity System Administration Guide*. (The *Cisco Unity System Administration Guide* is available at [http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_unity/unity40/sag/sag403/dom/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/sag/sag403/dom/index.htm).)

## Mapping Subscribers to Cisco Unity Servers

Each Cisco Unity server handles a distinct group of subscribers. In large organizations, it is possible that more than one Cisco Unity server will be in use at the same physical location. In this case, you need to determine which subscribers to associate with each of the Cisco Unity servers, and to keep a record of the mapping. This record is needed for the following reasons:

- When a call forwards from an extension to Cisco Unity, the Attempt Forward to Greeting routing rule searches for the forwarding number only among subscriber extensions (and alternate extensions) on the local Cisco Unity server. For this reason, each subscriber phone must forward to the Cisco Unity server with which the subscriber is associated.
- To check their messages, subscribers must dial the Cisco Unity server that they are associated with; therefore you need to tell subscribers the correct number to dial when calling into Cisco Unity. Additionally, if you use easy message access, each subscriber phone must be set to call the Cisco Unity server with which the subscriber is associated.

To create a record of the mapping, run the Subscribers report on each Cisco Unity server. The information in this report includes the subscriber name and primary location. Refer to the “Subscribers Report” section in the “Reports” chapter of the *Cisco Unity System Administration Guide* for more information. (The *Cisco Unity System Administration Guide* is available at [http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_unity/unity40/sag/sag403/dom/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/sag/sag403/dom/index.htm).)

■ Notable Behavior



## Internet Subscribers

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### Overview: Internet Subscribers

By creating Internet subscriber accounts, you enable Cisco Unity subscribers to send voice messages to recipients whose computers are connected to the Internet. Messages are sent over the Internet or any TCP/IP network via the Simple Mail Transfer Protocol (SMTP). The recipient receives a voice message as an e-mail with a WAV attachment.

If Cisco Unity is connected to a networked phone system, calls can be transferred from the auto attendant or the Cisco Unity directory assistance to the phone of the Internet subscriber. (With a networked phone system, subscribers dial an extension without having to dial a trunk access code or prefix when calling someone who is at another location on the phone network.)

In this chapter, you will find procedures for creating Internet subscribers, followed by detailed discussions of the concepts and terminology you need to understand. See the following sections:

- [Task List: Setting Up Internet Subscribers, page 3-1](#)—This task list provides a high-level view of all of the tasks you need to complete, and the order in which they should be completed.
- [Procedures for Setting Up Internet Subscribers, page 3-2](#)—This section contains all of the procedures necessary to set up Cisco Unity for Internet subscribers.
- [Internet Subscriber Concepts and Definitions, page 3-10](#)—This section explains Internet subscriber concepts in detail. You may want to read this section prior to completing the setup procedures.

### Task List: Setting Up Internet Subscribers

Use this task list to set up Cisco Unity for using Internet subscribers. The cross-references take you to detailed procedures for the setup.

1. Customize the primary location profile settings. See the [“Customizing the Primary Location” section on page 3-2](#).
2. Set the subscriber addressing, directory handler, and automated attendant search options. See the [“Setting the Addressing, Directory Handler, and Automated Attendant Search Scopes” section on page 3-2](#).
3. Create Internet subscriber accounts on the local Cisco Unity server for each remote message recipient, as needed. See the [“Creating Internet Subscriber Accounts” section on page 3-4](#).

# Procedures for Setting Up Internet Subscribers

This section contains all of the procedures necessary to set up Cisco Unity for use with Internet subscribers.

## Customizing the Primary Location

Even if you have only one Cisco Unity server, it is good practice to customize the primary location.

Carefully consider the Dial ID that you will assign to the primary location, particularly if your organization has multiple Cisco Unity servers networked together. See the [“Guidelines for Assigning Dial IDs and Extensions”](#) section on page 4-2 for detailed information about choosing a Dial ID.

### To Customize the Primary Location

---

- Step 1** In the Cisco Unity Administrator, go to the **Network > Primary Location > Profile** page.
- Step 2** Enter a meaningful name for the location.
- Step 3** Enter a Dial ID. The Dial ID identifies this location to Cisco Unity.
- Step 4** Record a voice name for the location.
- Step 5** For the dialing domain, do one of the following:
- If this server is not intended to belong to a dialing domain, click **None**.
  - If this server is intended to belong to a dialing domain, enter the dialing domain name, or select it from the available list. The list contains names of dialing domain names already configured on at least one other Cisco Unity server in the network.
- Note that the dialing domain name is case sensitive and must be entered exactly the same on all of the servers. To ensure that all servers are correctly added to the same dialing domain, enter the dialing domain name on one Cisco Unity server and wait for the name to replicate to the other Cisco Unity servers. By doing so, you also confirm that replication is working correctly among the servers. The time that it takes for the primary location data from other Cisco Unity servers to be reflected on the local server depends on your network configuration and replication schedule.
- Step 6** Click the **Save** icon.
- 

## Setting the Addressing, Directory Handler, and Automated Attendant Search Scopes

In installations with multiple Cisco Unity servers networked together such that they monitor the same address book, set the addressing search options on all Cisco Unity servers.

Do the following procedures to set up the addressing, directory handler, and automated attendant search scopes.

- [Setting the Addressing Search Scope, page 3-3](#)
- [Setting the Directory Handler Search Scope, page 3-3](#)
- [Setting the Automated Attendant Search Scope, page 3-3](#)

In Cisco Unity 4.0(3) and later, the automated attendant search scope must be set to search the dialing domain in order for identified subscriber messaging to work.

## Setting the Addressing Search Scope

For detailed information about the addressing search options, see the “[Primary Location Addressing Option Settings](#)” section on page 4-4.

### To Set the Addressing Search Scope

- 
- Step 1** In the Cisco Unity Administrator, go to the **Network > Primary Location > Addressing Options** page and set the addressing options as necessary.
- To allow subscribers created on the local Cisco Unity server to address messages to subscribers on other Cisco Unity servers that access the same directory, select **Dialing Domain** or **Global Directory**, as applicable.
- Step 2** If you want locations included in address searches, check the **Include Locations in Searches** check box. In addition to matching subscribers, location matches will also be returned. Confirming the match of a location allows a secondary search of the subscribers that are associated with that location.
- Step 3** Click the **Save** icon.
- 

## Setting the Directory Handler Search Scope

For detailed information refer to the “Directory Handler Search Options Settings” section in the “Directory Handler Settings” chapter of the *Cisco Unity System Administration Guide*. (The *Cisco Unity System Administration Guide* is available at [http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_unity/unity40/sag/sag403/dom/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/sag/sag403/dom/index.htm).)

### To Set the Directory Handler Search Scope

- 
- Step 1** In the Cisco Unity Administrator, go to the **Call Management > Directory Handlers > Search Options** page, and modify the search options for an existing directory handler, or create a new directory handler for unidentified callers who use directory assistance.
- Step 2** To allow subscribers on other Cisco Unity servers in the dialing domain to be located in directory assistance, click **Dialing Domain**.
- Step 3** Click the **Save** icon.
- 

## Setting the Automated Attendant Search Scope

By default, outside callers who reach the opening greeting for your organization can be transferred only to subscribers associated with the local Cisco Unity server. If you want to set up the automated attendant so that callers can be transferred to subscribers associated with other Cisco Unity servers in the same dialing domain, change a registry setting as described in the following procedure.

### To Set the Automated Attendant Search Scope

- 
- 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 **Set Auto Attendant Search Scope**.
- Step 4** In the New Value list, click **1**, and then click **Set** so that Cisco Unity searches for subscribers within the dialing domain.
- Step 5** When prompted, click **OK**.  
You do not need to restart Cisco Unity to enable the change.
- Step 6** Click **Exit**.
- 

## Creating Internet Subscriber Accounts

You can create Internet subscriber accounts by using the Cisco Unity Bulk Import wizard or the Cisco Unity Administrator. See the following sections:

- [Before Creating Internet Subscriber Accounts, page 3-4](#)
- [Using the Cisco Unity Bulk Import Wizard to Create Multiple Internet Subscriber Accounts, page 3-6](#)
- [Using the Cisco Unity Administrator to Create Internet Subscriber Accounts, page 3-9](#)
- [After Creating Internet Subscriber Accounts, page 3-9](#)

## Before Creating Internet Subscriber Accounts

This section lists—in order—the issues that you must consider before creating Internet subscriber accounts.

### 1. Cisco Unity Configuration and Permissions

If you are unsure whether the account that you are using has sufficient rights and permissions to create Internet subscribers, or whether Cisco Unity is properly configured to work with your message store, use the following procedure to run the SysCheck diagnostic tool.

#### To Check Cisco Unity Setup and Permissions by Using the Cisco Unity SysCheck Tool

- 
- Step 1** On the Cisco Unity server desktop, double-click the **Cisco Unity Tools Depot** icon.
- Step 2** In the left pane of the Tools Depot window, in the Diagnostic Tools directory, double-click **SysCheck**.
- Step 3** On the Welcome to the Cisco Unity Configuration Wizard page, click **Select Configuration Tests**, and click **Next**.
- Step 4** Uncheck the check boxes for the message stores that are not connected to Cisco Unity.
- Step 5** Click **Test**.
- Step 6** In the Test Results box, click the link provided to view the test results.
- Step 7** If no errors are reported, proceed to [Step 8](#). Otherwise, do the following sub-steps:

- a. Follow the advice offered in the Resolution column to correct each configuration or permissions error.
- b. Return to the Completing the Check Unity Configuration Wizard page, and click **Finish**.
- c. Repeat [Step 2](#) through [Step 7](#) until no errors are reported.

**Step 8** Click **Finish**.

---

## 2. Classes of Service

A class of service (COS) defines limits and permissions for subscribers who use Cisco Unity. For example, a COS dictates the maximum length of subscriber messages and greetings. Although most COS settings are not applicable to Internet subscribers, they still must be members of a COS. In the Cisco Unity Administrator, a COS is specified in each subscriber template; thus, a subscriber is assigned to the COS that is specified in the template upon which the Internet subscriber account is based. Cisco Unity includes predefined classes of service, which you can modify. You can also create new classes of service. For details, refer to the “Class of Service Settings” chapter in the *Cisco Unity System Administration Guide*.

## 3. Restriction Tables

Each COS specifies a restriction table for call transfers, one for message notification, and one for fax deliveries. Cisco Unity applies the restriction table associated with the COS of a subscriber, and displays an error message if the phone number is not allowed. Cisco Unity comes with predefined restriction tables, which you can modify.

Although most restriction table settings do not apply to Internet subscribers because they cannot log on to Cisco Unity or use the Cisco Personal Communications Assistant (PCA), administrators can enter call transfer numbers for Internet subscribers. For security purposes, you should modify the restriction table used for transfers in the COS to which Internet subscribers belong, as necessary. For details, refer to the “Restriction Tables” chapter in the *Cisco Unity System Administration Guide*.

## 4. Public Distribution Lists

Public distribution lists are used to send voice messages to multiple subscribers at the same time. Cisco Unity assigns new subscribers to the public distribution lists that are specified in the template on which the Internet subscriber account is based. For details, refer to the “Public Distribution List Settings” chapter in the *Cisco Unity System Administration Guide*.

## 5. Subscriber Templates

In the Cisco Unity Administrator, you can specify settings for a group of Internet subscribers by using a subscriber template. Subscriber templates contain settings that are applicable for subscribers of a particular type, such as a department. The settings from the template you choose are applied to Internet subscriber accounts as they are created. Cisco Unity comes with a default subscriber template, which you can modify, and you can create an unlimited number of additional templates. For more details, refer to the “Subscriber Template Settings” chapter in the *Cisco Unity System Administration Guide*.

## 6. Domino Address Books

If you use the Cisco Unity Administrator to create a Internet subscriber account, confirm that the address book(s) listed on the System > Configuration > Subscriber Address Books page in the Cisco Unity Administrator contain the user data that you want to import when you create the Internet subscriber

account. If necessary, you can add another address book to the System > Configuration > Subscriber Address Books page. For details, refer to the “System Settings” chapter in the *Cisco Unity System Administration Guide*.

**Note**

The *Cisco Unity System Administration Guide* is available at [http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_unity/unity40/sag/sag403/dom/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/sag/sag403/dom/index.htm).

## Using the Cisco Unity Bulk Import Wizard to Create Multiple Internet Subscriber Accounts

The Cisco Unity Bulk Import wizard allows you to create multiple Internet subscriber accounts at once by importing user data contained in a comma-separated value (CSV) file. CSV is a common text file format for moving data from one data store to another. As long as the user data contained in the CSV file is formatted correctly, you can use it to create Internet subscribers with existing Domino Person Documents.

In Cisco Unity 4.0(3) and later, the Cisco Unity Bulk Import wizard also allows you to create multiple Internet subscriber accounts at once by importing user data directly from the Domino directory. To do so, see the procedure “[To Create Internet Subscriber Accounts by Using the Cisco Unity Bulk Import Wizard](#).” Otherwise, use the following procedure to prepare your CSV file. Refer to the Cisco Unity Bulk Import wizard online Help to find additional information about using the wizard to create Internet subscriber accounts, or about the required and optional column headers for your CSV file.

### To Prepare a CSV File for Creating Internet Subscriber Accounts

- 
- Step 1** Save the data which you will use to create Cisco Unity accounts as a CSV file.
- As a best practice, do not include more than 7,500 records in a single CSV file, as you may encounter unexpected results when the Cisco Unity Bulk Import wizard imports the data.
- Step 2** Copy the CSV file to the Cisco Unity server or to a directory that you can browse to from the server.
- Step 3** Open the CSV file in a spreadsheet application or another application with which you can edit and reorganize the data. Do the following:
- Confirm that the data is separated by commas, and no tabs, spaces, or semicolons separate the data in the file.
  - If any data includes a space, quotes, or commas, contain it within quotes.
- Step 4** Rearrange the data so that the columns are in the same order as the column headers that you will add in [Step 5](#). The order of the column headers does not matter, though it is a good practice to set up your CSV file as indicated here.
- For example, the columns of data in this sample are sorted so that the last name of the user is followed by the first name, and then by the remote address and the short name:
- ```
Abade,Alex,SMTP:aabade@cisco.com,aabade
Bader,Kelly,SMTP:kbader@cisco.com,kbader
Campbell,Terry,SMTP:tcampbell@cisco.com,tcampbell
Cho,Li,SMTP:lcho@cisco.com,lcho
```
- Step 5** Enter the required column headers above the first row of data. Column headers must be in uppercase, separated by commas, and spelled as indicated below:

```
LAST_NAME,FIRST_NAME,REMOTE_ADDRESS,SHORT_NAME
```

- Step 6** If desired, add optional column headers to the first row, and the corresponding data that you want to import in the subsequent rows below. As you do so, confirm that:
- Column headers and data are separated by commas. Note that each row does not have to contain data for each optional column header.
  - Any data that includes a space, quotes, or commas is contained within quotes.
- Step 7** If your CSV file contains columns of data that you do not want to import, delete the columns. Alternatively, you can title one column **NOTES**. The Cisco Unity Bulk Import wizard ignores data beneath any NOTES column header, but the wizard does not support more than one NOTES column in a CSV file.
- Step 8** Confirm that each row contains the applicable data corresponding to each column header.
- Step 9** Save the file as a CSV file.
- Step 10** Continue with the following procedure [“To Create Internet Subscriber Accounts by Using the Cisco Unity Bulk Import Wizard.”](#)
- 

**Note**

Before you run the Cisco Unity Bulk Import wizard, disable virus-scanning services and intrusion-detection software on the Cisco Unity server, if applicable. Otherwise, the Cisco Unity Bulk Import wizard may run slowly. See the Cisco Unity Bulk Import wizard online Help for procedures.

---

**To Create Internet Subscriber Accounts by Using the Cisco Unity Bulk Import Wizard**

- 
- Step 1** On the Cisco Unity server, on the Windows Start menu, click **Programs > Cisco Unity > Cisco Unity Bulk Import**.
- Step 2** Follow the on-screen instructions.
- To learn more about the options presented in the dialog boxes that appear as the wizard proceeds, click **Help**.
- Step 3** When prompted to choose the type of subscriber that you want to create, click **Internet**.
- Step 4** Click **Next**, and proceed through the wizard. If the wizard reports any errors, you can:
- Click **OK** to continue with the import, and fix the errors later.
  - Fix the errors. See the [“Correcting Import Errors”](#) section on page 3-8 for details.
- Step 5** Once the Internet subscriber accounts are created, click **Finish**.
- Step 6** If you had import errors, but in [Step 4](#) you chose to correct them later, see the [“Correcting Import Errors”](#) section on page 3-8.
- If you had no import errors, or if all errors have now been corrected, see the [“After Creating Internet Subscriber Accounts”](#) section on page 3-9.
-

## Correcting Import Errors

The error log file contains data that the Cisco Unity Bulk Import wizard could not import. The Cisco Unity Bulk Import wizard reports the first error it detects in any user mailbox or row in a CSV file. Once you correct that error, the wizard may detect additional errors in the same mailbox or row when the data is imported again. Thus, you may need to repeat the correction process—running the Cisco Unity Bulk Import wizard and correcting an error—several times to find and correct all errors.

The output log file contains all the records that were not imported. You can save it as a CSV file, and use it when you run the Cisco Unity Bulk Import wizard again. Note that each time you run the Cisco Unity Bulk Import wizard, the error and output log files are overwritten (unless you specify new names for the files).

To correct import errors, use one of the following procedures: [“To Correct Errors That Occurred When Importing Data from a CSV File,”](#) or [“To Correct Errors That Occurred When Importing Data from the Message Store.”](#)

### To Correct Errors That Occurred When Importing Data from a CSV File

---

- Step 1** Browse to the directory location of the error log file you specified during the import. (The default location and file name is C:\Error.log.)
  - Step 2** Use a text editor to open the error log file. You will use the error codes in the file to make corrections.
  - Step 3** Browse to the directory location of the output log file you specified during the import. (The default location and file name is C:\Output.log.)
  - Step 4** Use a text editor to open the output log file.
  - Step 5** Correct any records in the output file that are listed as errors in the error log file.
  - Step 6** When you have finished editing the output log file, save it as a CSV file with a new name.
  - Step 7** Run the Cisco Unity Bulk Import wizard again with the CSV file that you saved in [Step 6](#).
  - Step 8** Repeat this procedure until all Internet subscriber accounts are created without error, and then proceed to the [“After Creating Internet Subscriber Accounts”](#) section on page 3-9.
- 

### To Correct Errors That Occurred When Importing Data from the Message Store

---

- Step 1** Browse to the directory location of the error log file you specified during the import. (The default location and file name is C:\Error.log.)
  - Step 2** Use a text editor to open the error log file. You will use the error codes in the file to make corrections.
  - Step 3** Double-click a mailbox that contains an error to see the properties.
  - Step 4** Enter corrections in the applicable boxes in the mailbox.
  - Step 5** Click **OK**.
  - Step 6** Repeat [Step 3](#) through [Step 5](#) for each mailbox listed in the error log file.
  - Step 7** Run the Cisco Unity Bulk Import wizard again.
  - Step 8** Repeat this procedure until all Internet subscriber accounts are created without error, and then proceed to the [“After Creating Internet Subscriber Accounts”](#) section on page 3-9.
-

## Using the Cisco Unity Administrator to Create Internet Subscriber Accounts

By using the Cisco Unity Administrator, you can create an Internet subscriber account by importing existing user data from Domino. Use the following procedure to create an Internet subscriber account.

### To Create an Internet Subscriber Account by Importing Existing User Data

- 
- Step 1** In the Cisco Unity Administrator, go to the **Subscribers > Subscribers > Profile** page.
  - Step 2** Click the **Add** icon.
  - Step 3** Select **Internet**.
  - Step 4** 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.
  - Step 5** In the Find Domino Person By list, indicate whether to search by short name, first name, or last name.
  - Step 6** Enter the applicable 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.
  - Step 7** Click **Find**.
  - Step 8** On the list of matches, click the name of the user to import.
  - Step 9** Enter the applicable information on the Add Subscriber page.
  - Step 10** Click **Add**.
  - Step 11** On the subscriber record, customize settings as applicable, and then click the **Save** icon.
- 

## After Creating Internet Subscriber Accounts

After creating Internet subscriber accounts, consider the following:

- It takes a few minutes for a newly-created Internet subscriber to be available to receive messages.
  - You can make changes to the settings for individual Internet subscriber accounts in the Cisco Unity Administrator. For details, refer to the “Subscriber Settings” chapter in the *Cisco Unity System Administration Guide*. The *Cisco Unity System Administration Guide* is available at [http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_unity/unity40/sag/sag403/dom/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/sag/sag403/dom/index.htm).
- When you want to modify settings for multiple subscribers at once, you can (re)run the Cisco Unity Bulk Import wizard. To learn more, refer to the Cisco Unity Bulk Import wizard online Help.
- When a subscriber leaves the organization or otherwise no longer needs a Cisco Unity account, you can delete the Internet subscriber account. See the “[Deleting Internet Subscribers](#)” section on [page 3-11](#) for details.

# Internet Subscriber Concepts and Definitions

Internet subscribers are Cisco Unity subscribers who do not have mailboxes on the Domino network. Instead, messages for Internet subscribers are sent to an e-mail address that you specify when you create the Internet subscriber account. The recipient receives voice messages as e-mails with attached WAV files.

In Domino, Internet subscribers are represented as person documents without a mailbox. You create and manage Internet subscriber accounts in much the same way that you do regular subscriber accounts. For example, a subscriber template is used when the Internet subscriber accounts are created, and you can adjust the call transfer settings for Internet subscriber accounts as needed.

Extensions are optional for Internet subscribers whereas they are mandatory for regular subscribers. If an Internet subscriber has not been assigned an extension, subscribers can address messages to that Internet subscriber only in spelled-name mode.

If you have specified extensions for the Internet subscribers, both unidentified callers and subscribers can dial the extension for the Internet subscriber, listen to the greeting of the Internet subscriber, and leave a message. If Cisco Unity is integrated with a networked phone system, outside callers can be transferred to the extension of the Internet subscriber.

Other than receiving messages (and possibly calls), Internet subscribers do not have access to other Cisco Unity features, and some sections of the Cisco Unity Administrator are disabled for Internet subscribers. Internet subscribers:

- Cannot log on to Cisco Unity by phone to check or send messages.
- Cannot log on to Cisco Unity by phone—or use the Cisco Unity Assistant—to adjust personal settings, so their recorded names and greetings can only be recorded or changed in the Cisco Unity Administrator. (Note that in version 3.1 and earlier, the Cisco Unity Assistant was known as the ActiveAssistant, or AA.)
- Cannot use the Cisco Unity Inbox to check messages. (Note that in version 3.1 and earlier, the Cisco Unity Inbox was known as the Visual Messaging Interface or VMI.)
- Cannot own private lists.
- Cannot set up or receive message notifications.
- Cannot receive message waiting indications.

## Subscriber Experience with Internet Subscribers

Provided that Internet subscribers have extensions, are listed in the phone directory, and have had voice names and greetings recorded for them:

- Subscribers can address messages to Internet subscribers by using the phone or the Lotus Notes with IBM Lotus Domino Unified Communications Services (DUCS) for Cisco Unity.
- When using the phone, subscribers can address messages to Internet subscribers by spelled-name mode (if enabled on the system) or by extension.
- Subscribers get voice name confirmation when addressing a message to an Internet subscriber.
- Internet subscribers can be added to distribution lists.
- Both unidentified callers and subscribers can place a call to an Internet subscriber and leave a message. If Cisco Unity is integrated with a networked phone system, calls from both unidentified callers and subscribers can be transferred to the extension of the Internet subscriber. (With a networked phone system, subscribers dial an extension without having to dial a trunk access code or prefix when calling someone who is at another location on the phone network.)

Extensions are optional for Internet subscribers whereas they are mandatory for regular subscribers. If an Internet subscriber has not been assigned an extension:

- The Internet subscriber cannot be listed in the phone directory.
- Unidentified callers will be unable to leave messages for the Internet subscriber.
- When addressing messages to the Internet subscriber, subscribers are limited to spelled-name mode, provided that the Internet subscriber has a recorded voice name. If neither an extension nor a voice name has been set, messages cannot be addressed to the Internet subscriber.

## Deleting Internet Subscribers

Each Internet subscriber is associated with a Domino person document without a mailbox. After deleting the Internet subscribers in the Cisco Unity Administrator, you will need to delete the associated person document in the Domino Administrator.





# Primary Location Settings

## Overview: Primary Location Settings

Each Cisco Unity server has a primary location, which is created during installation and which cannot be deleted. The primary location identifies the Cisco Unity server and contains the networking information needed to communicate with other Cisco Unity servers. With the exception of public distribution lists, all subscribers and other Cisco Unity objects (such as call handlers) created on your Cisco Unity server are associated directly or indirectly with the primary location.

See the following sections in this chapter for more information about the settings for the primary location:

- [Primary Location Profile Settings, page 4-1](#)—This section provides information about the settings that identify the Cisco Unity server to other Cisco Unity servers, and provides guidelines for assigning location Dial IDs.
- [Primary Location Addressing Option Settings, page 4-4](#)—This section provides information about the settings that allow you to select the scope of the search performed when a subscriber uses the phone to address a message by name or extension.

## Primary Location Profile Settings

The primary location profile settings contain the network information needed to identify the Cisco Unity server to other Cisco Unity servers. No matter which networking option you use, the profile settings for the primary location need to be customized.

## Assigning Dial IDs

The primary location profile settings contain a Dial ID, which Cisco Unity uses as an identifier for the location. You need to carefully plan the numbers that you choose as Dial IDs. Without careful planning, it is possible to assign Dial IDs that have the effect of preventing Cisco Unity from finding a message recipient at another location.

If any of the Cisco Unity servers are administered by other people, be sure to consult with them about the numbers that you can use for the Dial IDs. You need to verify that the Dial IDs on the local Cisco Unity server do not conflict with the Dial IDs and extensions used on other Cisco Unity servers.

## Guidelines for Assigning Dial IDs and Extensions

The numbering plan for assigning Dial IDs and extensions can affect how easily Cisco Unity matches the number that a subscriber enters when addressing a message. The following guidelines are recommended:

- Establish a fixed length for Dial IDs, and if possible, a fixed length for extensions.
- Assign unique Dial IDs. A Dial ID must not be the same as any other Dial ID or any extension assigned to a subscriber, call handler, interview handler, or public distribution list.
- Assign a numbering range for Dial IDs that extensions do not use. For example, you can assign Dial IDs with leading zeros—001, 002, and so on.
- If you use variable-length Dial IDs and extensions, the Dial IDs should be in a different numbering range than the range for extensions. For example, if there is a local extension 750123, do not assign a location the Dial ID of 750 if there is a possibility that this location will have the extension 123.
- If you use variable-length Dial IDs, the first digits of each ID should be unique with respect to other Dial IDs. For example, if you have a location with an ID of 750, do not assign another location the ID of 7503.

If you do not follow these guidelines, subscribers may encounter the following problems when addressing a message:

- A delay while Cisco Unity searches for a match
- Multiple matches for the number
- Failure to find the recipient at another location

## Changing the Minimum Length of Dial IDs

If necessary to accommodate the numbering plan for your organization, the minimum length for primary location Dial IDs can be reduced to one or two digits by changing a registry key, as described in the following procedure “[To Change the Minimum Length of a Location Dial ID](#).” (The minimum length of delivery location Dial IDs can not be changed.) Note, however, that one- and two-digit Dial IDs may conflict with private distribution list IDs during an address search. When a subscriber addresses a message by entering a one- or two-digit number, Cisco Unity first searches for a matching private distribution list. If a match is found, the search stops. Therefore, when a subscriber addresses a message by entering a location Dial ID in order to narrow down the search scope to a particular location, if the number entered matches a private distribution list ID, the conversation offers only the private distribution list as a destination. If subscribers do not address messages to other locations by first entering a Dial ID, there is no conflict, and the minimum length for Dial IDs can be reduced to accommodate complex numbering plans.

### To Change the Minimum Length of a Location Dial ID

- 
- 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 **Set the Minimum Extension Length for Locations**.
  - Step 4** In the New Value box, enter the number, and click **Set**.
  - Step 5** When prompted, click **OK**. You do not need to restart the Cisco Unity server to enable the registry change.

**Step 6** Click **Exit**.

Use the following table to learn more about the primary location profile settings.

**Table 4-1** Network > Primary Locations > Profile Page

| Field         | Considerations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Display Name  | This displays the name of the primary location. To change the name, enter a new name here, and then click the Save icon.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Dial ID       | <p>Enter the ID that identifies the primary location. Enter numbers only, up to a maximum of 10 digits. The default minimum length is 3 digits.</p> <p>Although the minimum length for Dial IDs can be reduced by using the Advanced Settings Tool, one- and two-digit Dial IDs may conflict with private distribution list IDs during an address search. When a subscriber addresses a message by entering a one- or two-digit number, Cisco Unity first searches for a matching private distribution list. If a match is found, the search stops. Therefore, when a subscriber addresses a message by entering a location Dial ID to narrow down the search scope to a particular location, if the number entered matches a private distribution list ID, the conversation offers only the private distribution list as a destination. If subscribers do not address messages to other locations by first entering a Dial ID, there is no conflict and the minimum length for Dial IDs can be reduced to accommodate complex dial plans.</p> <p>The following policies are recommended:</p> <ul style="list-style-type: none"> <li>• Establish a fixed length for Dial IDs and if possible, a fixed length for extensions.</li> <li>• Assign unique Dial IDs.</li> <li>• If you use variable-length Dial IDs and extensions, the Dial IDs should be in a different numbering range than extensions.</li> <li>• If you use variable-length Dial IDs, the first digits of each ID should be unique with respect to other Dial IDs. (For example, do not create Dial IDs like 432 and 4325.)</li> </ul> |
| Recorded Name | <p>Record a name for the primary location. The conversation plays the recorded name for this primary location when:</p> <ul style="list-style-type: none"> <li>• Subscribers associated with a Cisco Unity server in a different dialing domain address a message to subscribers associated with this location. (For example, assuming that New York is the recorded name for this location: “There are two matches. For John Smith, at New York, press 1. For Mary Smith press 2.”)</li> <li>• Subscribers associated with a Cisco Unity server in a different dialing domain listen to messages from subscribers associated with this location. (For example: “Message 1, a voice message, from John Smith at New York....”)</li> <li>• The setting Include Locations in Searches on the Network &gt; Primary Location &gt; Addressing Options page is enabled on another primary location. When subscribers at the other location address a message, the recorded name for this primary location may be played in the message addressing search results along with subscriber names. (For example: “There are two matches. For Chris Newton, press 1. For New York, press 2.”)</li> </ul> <p>To record the name here, use the Media Master control bar. (Note that the Media Master is not available across a firewall.) Use the Options menu in the Media Master control bar to set recording and playback devices, if applicable, and to use other sound files.</p>                                                                                                                               |

Table 4-1 Network &gt; Primary Locations &gt; Profile Page (continued)

| Field          | Considerations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dialing Domain | <p>Select from the list or enter the name of the dialing domain of which this location is a member. A dialing domain is a collection of Cisco Unity servers that are integrated with the same phone system or phone system network. Extensions within a dialing domain must be unique. The dialing domain allows Cisco Unity to handle overlapping extensions on Cisco Unity servers that are outside of the dialing domain.</p> <p>A dialing domain provides a means to scope message address and directory handler searches so that Cisco Unity does not search the entire global directory.</p> <p>The default setting is None. Use the default when:</p> <ul style="list-style-type: none"> <li>• Your installation consists of only one Cisco Unity server.</li> <li>• Your installation consists of two or more Cisco Unity servers, but each server is integrated with a separate phone system.</li> </ul> <p>There is no limit to the number of Cisco Unity servers that can be assigned to a single dialing domain, and there is no limit to the number of dialing domains. However, a Cisco Unity server can be a member of only one dialing domain.</p> |

## Primary Location Addressing Option Settings

The primary location addressing options allow you to control the scope of the search that Cisco Unity performs when searching for a matching extension in the following cases:

- When a subscriber addresses a message by using the phone.
- When subscribers add members to private lists by using the phone or the Cisco Unity Assistant.
- When an administrator adds members to public or private distribution lists by using the Cisco Unity Administrator.

You can set the scope to the local Cisco Unity server, to the dialing domain that the local Cisco Unity server is a member of, or to the entire global directory.

## Subscriber Addressing Options

Depending on how Cisco Unity is set up, subscribers can address messages to other subscribers by spelling the recipient name or entering a number. If desired, you can disable addressing by spelled name for all subscribers on each Cisco Unity server by unchecking the Enable Spelled Name Search in the Cisco Unity Administrator on the System > Configuration > Settings page.

If addressing by spelled name is enabled, subscribers spell the name or part of the name of the recipient by using the letters on the phone keypad. The Address Messages To Other Subscribers field in the Cisco Unity Administrator on the Subscribers > Subscriber Template > Conversation page, and on the Subscribers > Subscribers > Conversation page allows you to set the default method of addressing. Subscribers can also set this option in the Cisco Unity Assistant. (Note that in version 3.1 and earlier, the Cisco Unity Assistant was known as the ActiveAssistant, or AA.) While addressing messages, subscribers can switch between spelling the name and entering a number by pressing # twice (##).

## How Cisco Unity Searches for a Matching Name

When a subscriber addresses a message by spelling the recipient name, Cisco Unity searches for a match or partial matches among subscribers and public distribution lists. Only one search at the specified maximum scope level is performed. The scope of the search is dictated by the setting *Subscriber Searches: Limit Searches To*. For example, if searches are limited to the dialing domain, one search that includes both the local server and dialing domain is performed, and a list of matching names is reported back to the subscriber.

Public distribution lists, whether created on the local Cisco Unity server or not, are always considered local in scope for addressing purposes. Thus, if the scope is set to *Local Server*, subscribers can still address to a public distribution list created on another Cisco Unity server.

If the setting *Include Locations in Searches* is enabled, then primary locations from networked Cisco Unity servers are included in the search. If the subscriber selects a location from the list of names returned from the search, then the conversation prompts the subscriber to spell the name of the recipient at that location. This allows subscribers to limit a search for a recipient to a specific location.

## How Cisco Unity Searches for a Matching Number

When subscribers address a message by entering a number, the number could be:

- A private distribution list ID.
- A Cisco Unity subscriber or Internet subscriber extension.
- A Cisco Unity subscriber or Internet subscriber alternate extension.
- A public distribution list extension.
- A primary location dial ID from a networked Cisco Unity server.
- A primary location dial ID from a networked Cisco Unity server and an extension of a Cisco Unity subscriber at that location.

For example, a subscriber presses 3335678 on the phone to address a message. [Table 4-2](#) shows some of the possible matches:

**Table 4-2** *Some of the Possible Matches for the Number 3335678*

| Number  | Possible Match                       |
|---------|--------------------------------------|
| 3335678 | Extension 3335678                    |
| 3335678 | Location dial ID 333, extension 5678 |
| 3335678 | Location dial ID 3335, extension 678 |

To accommodate a variety of numbering plans, Cisco Unity searches for a match in stages, as the following sections describe:

1. [Search for a Distribution List or Subscriber Extension on the Local Server, page 4-6](#)
2. [Search for a Subscriber Extension in the Dialing Domain and then the Global Directory, page 4-6](#)
3. [Search for a Location Dial ID and Subscriber Extension at the Matching Location, page 4-6](#)

**Search for a Distribution List or Subscriber Extension on the Local Server**

Cisco Unity searches for a matching number by expanding the search scope in stages, starting with the local server, then the dialing domain, and finally the global directory. The scope of the search is dictated by the setting Subscriber Searches: Limit Searches To. If a match is found at any scope level, the search stops and does not continue to the next scope level.

If the subscriber entered a one- or two-digit number, the search begins with Cisco Unity looking for a match among the private distribution lists owned by the subscriber. If a match is found, the search stops, and the matched list is returned for confirmation.

If a match has not been found, or if the subscriber entered three or more digits, Cisco Unity searches for a matching subscriber extension on the local server. The search includes extensions for both regular Cisco Unity subscribers and Internet subscribers. Both primary extensions and alternate extensions are searched. If a match is found, the search stops.

When a match is on a subscriber extension, whether or not the conversation plays the recorded voice name and extension of the matched subscriber for confirmation depends on if the conversation is configured to do so, and if the recorded voice name exists. You can customize how the conversation confirms subscriber message addressing matches by using the Advanced Settings tool in Tools Depot to change the setting for Subscriber Addressing Confirm Match Mode.

If a match has not been found, Cisco Unity searches for a matching public distribution list extension. Public distribution lists, whether created on the local Cisco Unity server or not, are always considered local in scope for addressing purposes. Thus, if the scope is set to Local Server, subscribers can still address to a distribution list created on another Cisco Unity server. If a match is found, the search stops, and the matched list is returned for confirmation.

**Search for a Subscriber Extension in the Dialing Domain and then the Global Directory**

If a match has not been found, and if allowed by the search scope setting, the search expands to subscriber extensions in the dialing domain (if it exists). If a match is found, the search stops, and the name is returned for confirmation. If a match still has not been found, and if allowed by the scope setting, the search expands to subscriber extensions in the global directory. The search at each scope level includes extensions and alternate extensions.

It is possible for duplicate extensions to exist in the global directory. If the entered number matches more than one extension, a list of matching names is reported back to the subscriber from which to choose. However, if there is a match on an extension in the dialing domain, the search stops. For example, assume that Kelly has extension 3047 and is associated with a Cisco Unity server in the dialing domain. Joe also has extension 3047, but he is associated with another networked Cisco Unity server that is outside of the dialing domain. When a subscriber on the local server enters 3047 to address a message, the match is for Kelly, who is in the dialing domain. After finding a match at the dialing domain scope, the search stops and does not continue to the global directory; thus, the extension for Joe is not found.

If the setting Include Locations in Searches is enabled, then primary locations from networked Cisco Unity servers are included in the search at each scope level. If the entered number matches a location dial ID, after the subscriber confirms the matched location, the conversation prompts the subscriber to enter the extension of the recipient at that location.

**Search for a Location Dial ID and Subscriber Extension at the Matching Location**

If a matching distribution list, location dial ID, or subscriber extension has not been found, the search continues.

Cisco Unity parses the number to find a matching location dial ID and a subscriber extension at that location. Cisco Unity searches for a match by expanding the search scope in stages, starting with the local server, then the dialing domain, and finally the global directory. The scope of the search is dictated by the setting Subscriber Searches: Limit Searches To. If a match is found at any scope level, the search

stops and does not continue to the next scope level. When a match is found, the conversation will confirm the match, if configured to do so. For example, the conversation could play: “For Kelly Bader at extension 3037 at Chicago press pound.”

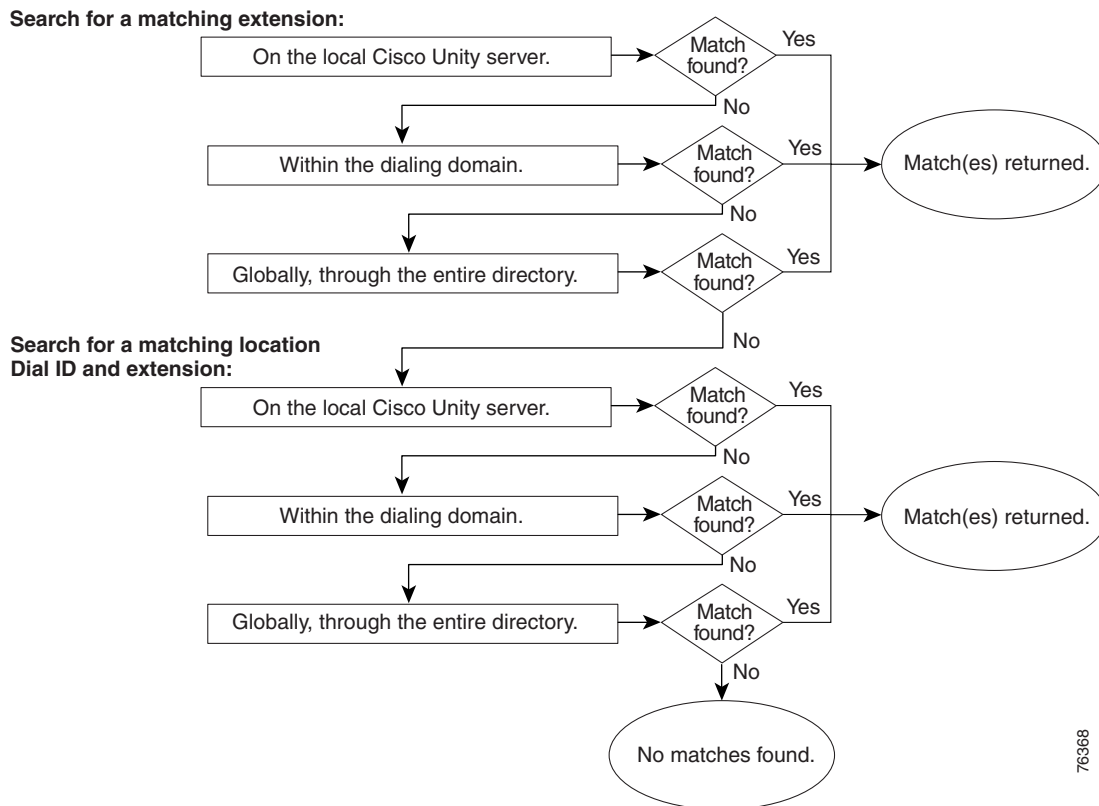
Assuming that the minimum length for dial IDs is set to the default (three digits), at each scope level Cisco Unity first searches for a location dial ID that matches the first three digits entered by the subscriber. If a match is found, Cisco Unity searches subscribers associated with the location for an extension that matches the remaining digits in the entered number. Cisco Unity continues the search by looking for a location with a dial ID that matches the first four digits entered by the subscriber. If a match is found, Cisco Unity searches subscribers associated with the location for an extension that matches the remaining digits in the number. The search for a matching location and extension continues in this manner. Note that the search is for the primary extension of the subscriber; alternate extensions are not included in the search.

For example, a subscriber addresses a message to 3335678. Cisco Unity searches for a location with the dial ID 333. If a match is found, Cisco Unity searches for a subscriber at that location who has extension 5678. Next (regardless of whether a match was found), Cisco Unity searches for a location with the dial ID 3335. If a match is found, Cisco Unity searches for a subscriber at that location who has extension 678.

If you have changed the minimum number of digits in location dial IDs, Cisco Unity first searches for a matching dial ID according to the minimum that you set. For example, if you reduced the minimum length of a dial ID to one, Cisco Unity begins the search at each scope level by looking for a matching dial ID that matches the first digit entered by the subscriber. (Reducing the minimum dial ID length to one or two is not recommended because of the potential conflict with private distribution list IDs.)

[Figure 4-1](#) illustrates the search that Cisco Unity performs when the subscriber search option is set to the global directory.

Figure 4-1 Subscriber Addressing Search for a Matching Number



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## Location Addressing Options Settings

Use the following table to learn more about location addressing option settings.

Table 4-3 Network &gt; Locations &gt; Addressing Options Page

| Field                                  | Considerations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Subscriber Searches: Limit Searches To | <p>Select the scope of the search that Cisco Unity performs when a subscriber addresses a message by using the phone, and when members are being added to a public or private distribution list:</p> <ul style="list-style-type: none"> <li>Local Server—Limits the search to subscribers created on the local Cisco Unity server.</li> <li>Dialing Domain—If a match is not found while searching the local Cisco Unity server, the search expands to include subscribers created on other Cisco Unity servers that are in the same dialing domain as the local Cisco Unity server.</li> <li>Global Directory—After searching the local Cisco Unity server and then the dialing domain (if there is one), the search expands to include every subscriber created on other Cisco Unity servers in the directory.</li> </ul> |

**Table 4-3** Network > Locations > Addressing Options Page (continued)

| Field                         | Considerations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Include Locations in Searches | <p>Check this check box to have locations included in searches. For this setting to be useful to subscribers, locations need to have recorded voice names.</p> <p>When checked, this setting allows subscribers to address a message in two steps. First subscribers select a particular location (either by spelling the name or by entering the Dial ID). If Cisco Unity finds a matching location, the recorded voice name for the location is played (assuming one has been recorded), and subscribers are prompted to either by spell the name or enter the extension of the recipient. This allows subscribers to limit a search for a recipient to a specific location.</p> <p>This option is useful when the global directory is large and addressing a message by name results in many matches.</p> <p>For example, assume there are two Cisco Unity servers that use Digital Networking to exchange messages. Assume 100 is the Dial ID for the primary location of the remote Cisco Unity server, and that a voice name for the location has been recorded.</p> <ul style="list-style-type: none"> <li>• A subscriber enters 100# to address a message to someone on the other Cisco Unity server.</li> <li>• When the primary location 100 is found, the conversation plays, “For location &lt;Recorded voice name&gt;, press #.”</li> <li>• When the sender presses # to confirm, the conversation plays, “Enter the extension followed by #.”</li> <li>• The subscriber enters 12345#. If Cisco Unity finds a matching subscriber extension at location 100, the conversation plays, “For &lt;Subscriber recorded voice name&gt; at extension 12345, press #.”</li> <li>• When the sender presses # to confirm, the conversation plays, “Added. To add another name, press 1. To record the message, press #.”</li> </ul> |





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