Overview: Bridge Networking

The Cisco Unity Bridge acts as a networking gateway between Cisco Unity and an Avaya Octel system on an Octel analog network. The Bridge server is connected to the phone system and communicates with Octel servers by using the Octel analog networking protocol. The Bridge server communicates with a Cisco Unity server by using the Digital Networking protocol, which is based on the Voice Profile for Internet Mail (VPIM) protocol, with proprietary extensions. The Bridge must be installed on a separate and dedicated platform. The Bridge can communicate with up to 999 Octel servers.

Messaging between Cisco Unity and the Bridge is done over the Internet or any TCP/IP network by using SMTP. Messaging between the Octel servers and the Bridge is done by using the Octel analog networking protocol (in other words, phone calls).

Bridge Networking is a licensed feature. If your organization has multiple Cisco Unity servers networked together, only one server needs to be licensed and configured for Bridge Networking. The Cisco Unity server configured for Bridge Networking is referred to as the bridgehead server.

In this chapter, you will find procedures for setting up Bridge Networking, followed by detailed discussions of the concepts and terminology you need to understand. If you are unfamiliar with Bridge Networking, you should first read the Bridge Concepts and Definitions section and review the rest of this chapter before attempting the setup. Planning is essential to a successful setup. See the following sections:

- **Task List: Setting Up Cisco Unity and the Bridge for Networking, page 1-2**—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 Networking Between Cisco Unity and the Bridge, page 1-3**—This section contains all of the step-by-step procedures necessary to set up networking between Cisco Unity and the Bridge.

- **Bridge Concepts and Definitions, page 1-28**—This section explains Cisco Unity Bridge concepts in detail. You may want to read this section prior to completing the setup procedures.

- **Bridge Reference: Settings on the Cisco Unity Server, page 1-46**—This section contains tables that define the fields on the Cisco Unity Administrator website related to Bridge Networking setup.

- **Bridge Reference: Settings on the Bridge Server, page 1-50**—This section contains tables that define the fields on the Bridge Administrator website.

- **Maintenance, page 1-64**—This section provides information about monitoring system activity and backing up and restoring the Bridge server.
Task List: Setting Up Cisco Unity and the Bridge for Networking

Use this task list to set up networking between Cisco Unity and the Bridge. The cross-references take you to detailed procedures related to each item in the list. If you are unfamiliar with Bridge Networking, you should first read the Bridge Concepts and Definitions section and review the rest of this chapter before attempting the setup.

2. Make decisions about your Cisco Unity numbering plan, and gather information needed to configure Cisco Unity and the Bridge for networking. See the “Making Design Decisions and Gathering Needed Information” section on page 1-3.
3. Make changes as needed to provide basic network connectivity between the Exchange server on which the Voice Connector will be installed and the Bridge server. See the “Resolving Names and IP Addresses” section on page 1-4.
4. Extend the Active Directory schema so that information about Bridge delivery locations can be stored in Active Directory. See the “Extending the Active Directory Schema” section on page 1-4.
5. If needed, grant the Bridge server permissions to relay e-mail through the Exchange SMTP virtual server. See the “Granting the Bridge Server Permissions to Relay E-Mail Through the Exchange SMTP Virtual Server” section on page 1-5.
6. If needed, configure an SMTP connector to route messages directly to the Bridge. See the “Using an SMTP Connector to Route Messages Directly to the Bridge” section on page 1-6.
8. On the Cisco Unity server that will communicate with the Bridge:
   8. Confirm that the Cisco Unity server is licensed for Bridge ports.
9. Create the UOmni mailbox. See the “Creating the UOmni Mailbox” section on page 1-8.
10. Customize the primary location profile settings. See the “Customizing the Primary Location” section on page 1-9.
11. Set the addressing, directory handler, and automated attendant search options. See the “Setting the Addressing, Directory Handler, and Automated Attendant Search Scopes” section on page 1-10.
12. Set the Bridge subscriber creation and synchronization options. See the “Setting Bridge Options” section on page 1-11.
13. Create a delivery location for each remote Octel system. See the “Creating Bridge Delivery Locations” section on page 1-12.

14. Optionally, you may want to activate Optional Conversation 1, which is an alternative to the standard Cisco Unity conversation. See the “Activating Optional Conversation 1” section on page 1-13.

15. If the Octel system sends display names in the format “LastName FirstName” with no comma separator between the names, change the default display name parsing rules. See the “Changing the Default Display Name Parsing Rule (Cisco Unity 4.0(x) Only)” section on page 1-14.

On the Bridge server:

16. Configure settings in the Bridge Administrator. See the “Configuring the Bridge” section on page 1-15.

17. Optionally, add password protection to the Bridge Administrator. See the “Adding Password Protection to the Bridge Administrator” section on page 1-18.

To finish the setup:

18. Optionally, create Bridge subscribers. See the “Creating Bridge Subscribers” section on page 1-19.

19. If the Bridge is joining the Octel network as a new Octel node, information about the new node must be programmed on each existing Octel node. If the Bridge replaces an existing Octel node, no programming needs to be done to the existing Octel nodes.

20. Test the setup to verify that Cisco Unity can exchange messages with the other voice messaging system. If you are unable to send and receive messages, see the “Cisco Unity Bridge Troubleshooting” chapter for information that can help you find and fix the problem.

Procedures for Setting Up Networking Between Cisco Unity and the Bridge

This section contains all of the procedures necessary to set up Cisco Unity to use the Bridge.

Making Design Decisions and Gathering Needed Information

Before you begin setting up Cisco Unity and the Bridge for networking, be sure to plan for the following, and gather the appropriate information:

- Review your numbering plan strategy to determine which numbers to assign to Dial IDs on the primary location and Bridge delivery location(s).
- Decide whether you want subscribers to use blind addressing (which is “blind”—meaning the subscriber receives no voice name confirmation—only the first time a message is sent to a particular Octel subscriber from Cisco Unity). As an alternative to blind addressing, you can create Bridge subscribers in Cisco Unity, create permanent directory entries on the Bridge server, or do both.
- Write down the fully qualified domain name and IP address of the Bridge server.
- Decide which Exchange server(s) on which to install the Voice Connector. Write down the server name, domain name, and IP address of the Exchange server.
- Write down the name and serial number for each Octel node.
- Review the following pages on the Cisco Unity Administrator. You may want to make note of the information before entering it.
Procedures for Setting Up Networking Between Cisco Unity and the Bridge

Chapter 1 Bridge Networking

- Primary Locations > Profile
- Primary Location > Addressing Options
- Call Management > Directory Handler > Search Options
- Bridge Delivery Location
- Bridge Subscriber Creation Options
- Bridge Synchronization Options
- Subscriber Template settings, Subscriber COS settings, and Subscriber settings (only if you will be creating Bridge subscribers)

- Review the following pages on the Bridge Administrator. You may want to make note of the information before entering it.
  - System Settings
  - Digital Networking
  - Unity Nodes
  - Octel Nodes

Resolving Names and IP Addresses

The Exchange and Bridge servers both require some mechanism for name resolution. While any method or combination of methods may be used, two common ways to accomplish name resolution are through Domain Name System (DNS), and by using HOSTS files.

If the Exchange server and/or the Bridge server are in a network that uses DNS, the servers should have a host address resource (A) record and mail exchange (MX) record in DNS. If the A and MX records for the servers have not already been added, do so now before continuing. Refer to the Microsoft Windows documentation for more information about adding A and MX records in DNS.

A HOSTS file is a text file that contains the mappings of IP addresses to host and domain names. The HOSTS file is located in the C:\WINNT\system32\drivers\etc folder. If the Exchange server is in a network that does not use DNS, you will need to edit the HOSTS file to add host and domain entries for the Bridge server. Likewise, if the Bridge server is in a network that does not use DNS, the HOSTS file on the Bridge server will need to be edited to add host and domain entries for the Exchange server.

Whether you use DNS or HOSTS files, you will need to know the fully qualified domain name of the Bridge server and the Exchange server on which the Voice Connector is installed. This is the name displayed in the Windows System Control Panel on the Network Identification tab in the Full Computer Name field.

Extending the Active Directory Schema

Before Cisco Unity is installed, the Active Directory schema is extended to store some Cisco Unity-specific information. However, to support Bridge Networking, the schema must be further extended to store information needed by Bridge delivery locations.

To Extend the Active Directory Schema for Bridge Networking
Do this procedure only if you did not already modify the Active Directory schema to support Bridge Networking during the Cisco Unity or Bridge installation.
A log file is generated each time the schema is updated. A shortcut to the directory where the log file is located is placed on the Windows desktop. To see the changes that the schema update program makes, browse to the directory Schema\LdifScripts on Cisco Unity Disc 1, and view the file omnigateway.ldf.

Step 1 Verify that all domain controllers are online before making the schema updates. Schema replication will occur only if all domain controllers are online.

Step 2 On the domain controller that is the schema master, log on by using an account that is a member of the Schema Administrators group.

Step 3 Insert the Cisco Unity DVD in the DVD drive.

or

Insert Cisco Unity CD 1 in the CD-ROM drive.

Step 4 Browse to the ADSchemaSetup directory.

Step 5 Double-click ADSchemaSetup.exe, and then double-click the dialog box that is displayed to proceed with the installation.

Step 6 Check Exchange 2000 Bridge Connector, uncheck the other check boxes, and click OK.

Step 7 When the LDAP Data Interchange Format (LDIF) scripts have finished running, click OK.

Step 8 When the schema extension has finished, Ldif.log and LDif.err files are saved to the desktop. View the contents of the files to confirm that the extension completed successfully.

Step 9 Wait for the changes to the schema to replicate throughout the forest before adding information to the primary location and to delivery locations. Changes to the schema may take 15 minutes or more to replicate.

Note To determine whether changes have replicated and to force replication if necessary, use the Replication Monitor, which is available when you install Support Tools from the Windows 2000 compact disc.

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## Granting the Bridge Server Permissions to Relay E-Mail Through the Exchange SMTP Virtual Server

Depending on your network, you may need to explicitly grant permissions to the Bridge server in order for it to relay e-mail through the Exchange SMTP virtual server. The following procedure explains how to do this.

**To Grant the Bridge Server Permissions to Relay E-mail Through the Exchange SMTP Virtual Server**

- **Step 1** On the server on which the Voice Connector will be installed, on the Windows Start menu, click **Programs > Microsoft Exchange > System Manager**.
- **Step 2** In the tree on the left, expand **Servers\<server name>\Protocols\SMTP**.
- **Step 3** Right-click **Default SMTP Virtual Server** and select **Properties**.
- **Step 4** Click the **Access** tab.
- **Step 5** Click **Relay**.
Step 6  Click Only the List Below.
Step 7  Click Add.
Step 8  Click Single Computer, and enter the IP address of the Bridge server.
Step 9  Click OK.
Step 10  Verify that the Allow All Computers Which Successfully Authenticate To Relay, Regardless Of The List Above check box is checked.
Step 11  Click OK twice to close the Properties dialog box.
Step 12  Close the Exchange System Manager.

Using an SMTP Connector to Route Messages Directly to the Bridge

Depending on your Exchange organization, sometimes all messages routed from Exchange are redirected to a corporate relay or secure server before being routed to any other destination outside of Exchange. In some cases, these servers may not be configured to allow routing of messages addressed to the Bridge. If this is your situation, an Exchange 2000 SMTP Connector (not to be confused with the SMTP Default Virtual Server) can be configured to send messages that are addressed to the Bridge directly to the Bridge server, bypassing any alternate routing that may be configured. See the following procedure, To Configure an SMTP Connector to Route Messages Directly to the Bridge, page 1-6.

To Configure an SMTP Connector to Route Messages Directly to the Bridge

Step 1  On the server on which the Voice Connector will be installed, from the Windows Start menu, click Programs > Microsoft Exchange > System Manager.
Step 2  In the tree on the left, in the applicable Routing Group, expand Connectors.
Step 3  Right-click Connectors and select New > SMTP Connector.
Step 4  Enter a Name (for example, the Bridge server name) for the connector.
Step 5  Click Forward All Mail Through This Connector to the Following Smart Hosts, and enter the IP address of the Bridge server enclosed in square brackets (for example, [10.10.10.255]).
Step 6  Click Add.
Step 7  Select the server on which the Voice Connector will be installed, and click OK.
Step 8  Click the Address Space tab.
Step 9  Click Add.
Step 10  Select SMTP, and click OK.
Step 11  In the E-mail domain field, enter the fully qualified domain name (FQDN) of the Bridge server. This is the name displayed in the Windows System Control Panel on the Bridge server on the Network Identification tab in the Full Computer Name field.
Step 12  Enter a Cost of 1, and click OK.
Step 13  Click OK, and close the Exchange System Manager.
Setting Up the Voice Connector for Bridge Networking (Exchange 2000)

Although there are two Voice Connector installation programs included with Cisco Unity, the Voice Connector for Exchange 2000 is the only one supported for messaging with the Bridge.

Install the Voice Connector on an Exchange 2000 server. If the Exchange 2000 and Cisco Unity servers are in different routing groups, a routing group connector must be installed. Although the Voice Connector can be installed on the Cisco Unity server (if Exchange 2000 is also on the server), this is not recommended for performance reasons.

Do not install the Voice Connector on a server in an Exchange cluster. Microsoft does not support third-party connectors on an Exchange cluster server.

For installations running Cisco Unity 3.1(6) and 4.0(2), skip to the “To Install the Voice Connector for Exchange 2000” section on page 1-7.

For installations running Cisco Unity 3.1(3) – 3.1(5) and 4.0(1), we recommend that you download the most recent 10.0(x) version of the Voice Connector for Exchange 2000, as described in the next procedure, “To Download the Voice Connector (Cisco Unity 3.1(3) – 3.1(5) and 4.0(1) Only).”

To install the Voice Connector, do the procedures:

- To Install the Voice Connector for Exchange 2000, page 1-7
- To Determine if the Microsoft Windows 2000 Script Host Should Be Updated, page 1-8

To Download the Voice Connector (Cisco Unity 3.1(3) – 3.1(5) and 4.0(1) Only)

Step 1 On a computer with a high-speed Internet connection, go to the Cisco Unity Voice Connector for Exchange Software Download page at http://www.cisco.com/cgi-bin/tablebuild.pl/unity-voice-connector.

Step 2 Download the most recent 10.0(x) version of the Voice Connector. As of this writing, the 10.0(2) version is the most recent, so download the file CiscoUnityVoiceConnector10.0.2-Ex2000.exe to the directory of your choice.

Step 3 Unzip the downloaded file and extract the files to the directory of your choice. The extracted files must be accessible from the Exchange server on which the Voice Connector will be installed. (The Voice Connector setup program creates several folders within the folder in which the Exchange server software is installed and copies files to these folders.)

Step 4 Delete the downloaded zip file to free hard disk space.

To Install the Voice Connector for Exchange 2000

As a best practice, backup the Exchange server before installing the Voice Connector.

Step 1 Log on to the Exchange server on which you are installing the Voice Connector.

Step 2 Disable any virus-scanning services on the Exchange server.

Step 3 Uninstall any previous versions of the Voice Connector. See the “Uninstalling the Cisco Unity Voice Connector” section on page 4-3.

Step 4 If you are installing the Voice Connector from the Cisco Unity DVD1 or CD1, insert the disc in the computer, and browse to the VoiceConnector-Ex2000 directory.

If you downloaded the Voice Connector files from the Software Center website, browse to the directory in which the files were extracted.
Step 5  Double-click Install.exe and then click Next.
Step 6  In the Address Types dialog box, check Bridge (and also select any other features that are being used in your network).
Step 7  Click Next twice.
Step 8  In the User Information dialog box, enter your Windows password and then click Next.
Step 9  When setup is complete, click Finish to exit Setup and restart the server.
Step 10  Enable virus-scanning services on the server.

To Determine if the Microsoft Windows 2000 Script Host Should Be Updated

In order to view Voice Connector properties in Exchange System Manager, Microsoft Windows Script Host version 5.6 or later must be installed on the Exchange server. If the Exchange server uses an earlier version of Windows Script Host, the Voice Connector will function properly, but you will not be able to view Voice Connector properties in the Exchange System Manager.

Do the following procedure to determine the version of Microsoft Windows 2000 Script Host.

Step 1  On the Exchange server on which the Voice Connector has been installed, browse to \Winnt\System32.
Step 2  Right-click the file wshom.ocx, and select Properties.
Step 3  Click the Version tab.
Step 4  In the Item Name list, click Product Version to view the version in the Value box.
Step 5  If the version is earlier than 5.6, the Windows Script Host needs to be updated in order for the Voice Connector properties to be displayed in Exchange System Manager.

To update the Windows Script Host, go to the downloads page on the Microsoft website, and do a keyword search for Windows Script Host. Follow the installation instructions.

Creating the UOmni Mailbox

In installations with multiple Cisco Unity servers networked together, one Cisco Unity server is designated the “bridgehead” server and is set up to communicate with the Bridge server. If there are multiple Bridge servers, each Bridge server is paired with a different Cisco Unity bridgehead server. The UOmni mailbox needs to be created only on the Cisco Unity bridgehead server(s). Note that the mailbox is actually homed on the Exchange server that Cisco Unity is connected to (which is the Exchange server that was selected in the Cisco Unity Server Configuration Wizard during setup).

To Create the UOmni Mailbox

Step 1  On the Cisco Unity server, browse to the directory in which Cisco Unity is installed (the default location is \CommServer).
Step 2  Double-click ConfigMgr.exe. The ConfigMgr dialog box appears.
Step 3  Click Create Bridge Account.
Step 4  Uncheck the Enable Diagnostics check box.
Step 5  Click Run. The armadillo dances while you wait.
Chapter 1 Bridge Networking

Procedures for Setting Up Networking Between Cisco Unity and the Bridge

Step 6  Click **OK** in the dialog box that displays when the UOmni mailbox has been successfully configured.
Step 7  Close the ConfigMgr dialog box.

Customizing 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 3-2 for detailed information about choosing a Dial ID.

In installations with multiple Cisco Unity servers networked together, one Cisco Unity server is designated the “bridgehead” server and is set up to communicate with the Bridge server. If there are multiple Bridge servers, each Bridge server is paired with a different Cisco Unity bridgehead server. Customize the primary location for the Bridge only on the Cisco Unity bridgehead server(s).

**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**  Do one of the following:
  - If the location does not belong to a dialing domain, click **None**.
  - If the location belongs to a dialing domain, enter the Dialing Domain name on one Cisco Unity server that is in the dialing domain, and wait for the name to replicate to the other Cisco Unity servers.

  **Note**  When setting up the primary location of the other Cisco Unity servers that are members of the dialing domain, select the Dialing Domain name from the list instead of entering a name.

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**  In the Unity Bridge section, enter the Node ID that this Cisco Unity server represents. If this Cisco Unity server and the associated Bridge server replace an existing Octel Node, enter the Node ID of the Octel Node that is being replaced. The Node ID must match the Serial Number of the Unity Node that is displayed on the Unity Nodes page in the Bridge Administrator.

**Step 7**  In the Server Address field, enter the fully qualified domain name of the Bridge server with which this Cisco Unity server is associated. The Server Address must match the Cisco Unity Bridge Domain Name that is displayed on the Digital Networking page in the Bridge Administrator. This is the name displayed in the Windows System Control Panel on the Network Identification tab in the Full Computer Name field.

**Step 8**  Click the **Save** icon.
Setting the Addressing, Directory Handler, and Automated Attendant Search Scopes

In installations with multiple Cisco Unity servers networked together, set the search options on all Cisco Unity servers, not just the server(s) that you set up to communicate with the Bridge server(s).

Note

The search scope for a matching subscriber extension for inbound messages to Cisco Unity subscribers from the Bridge is set to the global directory. It is not possible to limit the inbound search scope to either a dialing domain or to the local Cisco Unity server for inbound messages from the Bridge. This means that primary extensions must be unique within the global directory.

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

- Setting the Addressing Search Scope, page 1-10
- Setting the Directory Handler Search Scope, page 1-10
- Setting the Automated Attendant Search Scope, page 1-11

Setting the Addressing Search Scope

For detailed information about the addressing search options, see the “Primary Location Addressing Option Settings” section on page 3-5.

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.
- If you are using blind addressing to a Cisco Unity server in a separate directory, or to another voice messaging system, set the Blind Addressing Allowed Locations setting to something other than None, as applicable.

Step 2
If you want locations included in address searches, check the Include Locations in Searches check box. The location name is played only when a subscriber enters the location dial ID when addressing a message.

Step 3
Click the Save icon.

Setting the Directory Handler Search Scope

Chapter 1 Bridge Networking

To Set the Directory Handler Search Scope

Step 1 In the Cisco Unity Administrator, go to the **Call Management > Directory Handlers > Search Options** page. In Cisco Unity 4.0(1) and later, you can 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.

In Cisco Unity 3.1(6), the automated attendant search scope must be set to search the dialing domain in order for identified subscriber messaging to work.

Note For Cisco Unity failover, registry changes on one Cisco Unity server must be made manually on the other Cisco Unity server, because registry changes are not replicated.

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**.

Setting Bridge Options

In installations with multiple Cisco Unity servers networked together, one Cisco Unity server is designated the “bridgehead” server and is set up to communicate with the Bridge server. If there are multiple Bridge servers, each Bridge server is paired with a different Cisco Unity bridgehead server. Set the Bridge options only on the Cisco Unity bridgehead server(s).
To Set Bridge Options

Step 1 In the Cisco Unity Administrator, go to the **Network > Bridge Options > Subscriber Creation Options** page.

Step 2 Select the subscriber template that will be used for auto-created Bridge subscribers.

Step 3 Indicate whether you want auto-created Bridge subscribers to be listed in the Exchange Global Address List.

Step 4 Go to the **Network > Bridge Options > Synchronization Options** page, and select the scope for the synchronization of the subscriber directory on the Bridge with the subscriber directory on Cisco Unity. Choose one of the following:

- Local Server
- Dialing Domain
- Global Directory

**Note** Do not synchronize the directories at this time, because the Bridge server has not yet been configured.

Creating Bridge Delivery Locations

Create a Bridge delivery location on your local Cisco Unity server for each Octel system to which subscribers will send messages. You create a Bridge delivery location for each Octel node that will be listed on the Octel Nodes page in the Bridge Administrator.

In installations with multiple Cisco Unity servers networked together, one Cisco Unity server is designated the “bridgehead” server and is set up to communicate with the Bridge server. If there are multiple Bridge servers, each Bridge server is paired with a different Cisco Unity bridgehead server. Create the Bridge delivery locations only on the Cisco Unity server(s) that will communicate with the Bridge server(s).

To Create Bridge Delivery Locations

Step 1 In the Cisco Unity Administrator, go to the **Network > Delivery Locations > Profile** page.

Step 2 Click the Add icon.

Step 3 Enter a meaningful name for the location.

Step 4 Enter the Dial ID. See the “Guidelines for Assigning Dial IDs and Extensions” section on page 3-2 for detailed information about choosing a Dial ID.

Step 5 Select Bridge as the Destination Type for the location.

Step 6 Click Add.

Step 7 Record a voice name for the location.
Step 8 Enter the Octel Node ID, which is the number of the Octel node that corresponds to this delivery location. This number must match the Serial Number of one of the nodes displayed on the Octel Nodes page in the Bridge Administrator. In turn, the Serial Number of an Octel node in the Bridge Administrator must match the number of a Octel node.

Activating Optional Conversation 1

A Cisco Unity conversation is a set of prerecorded prompts and menu options that Cisco Unity plays over the phone to subscribers when they retrieve, send, and manage messages, and as they change their Cisco Unity settings. Cisco Unity Optional Conversation 1 provides an alternative to the standard conversation, which is the system default.

You may choose to use Optional Conversation 1 because the choices in its message-retrieval menus more closely resemble the choices that subscribers in your organization are familiar with. Other menus — those that unidentified callers and Cisco Unity subscribers use to send and manage messages, as well as the menus that subscribers use to change their Cisco Unity settings — are the same as those in the Cisco Unity standard conversation.

The Cisco Unity Phone Menus for Optional Conversation 1 card provides a diagram of the Cisco Unity phone conversation and is intended for subscriber use. (Note that the message-retrieval menus described in the Cisco Unity User Guide depict the standard conversation, not Optional Conversation 1.) The Cisco Unity Phone Menus for Optional Conversation 1 card is available on Cisco.com at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_user_guide_list.html.

You activate Optional Conversation 1 by changing a registry key setting on the Cisco Unity server. The registry change is applied systemwide to all subscribers associated with the Cisco Unity server. You cannot activate Optional Conversation 1 for individual subscribers or for a specific group of subscribers.

If you choose to activate Optional Conversation 1, consider the following issues:

- As with the standard conversation, deleting or customizing Cisco Unity prompts is not supported.
- When Cisco Unity failover is configured, registry changes on one Cisco Unity server must be made manually on the other Cisco Unity server, because registry changes are not replicated.
- When you upgrade Cisco Unity (including maintenance-release upgrades), the default registry settings for the Cisco Unity conversation are automatically restored, which activates the standard conversation. Therefore, you will need to reactivate Optional Conversation 1 after an upgrade. (Note that installing an engineering special does not automatically restore the default registry settings for the conversation.)

For more details on using Optional Conversation 1 with Cisco Unity — including the caveats associated with it, refer to the applicable white paper:

- White Paper: Using Optional Conversation 1 with Cisco Unity Version 4.0(2).

Do the following procedure to activate Optional Conversation 1. To reactivation the standard conversation, do the “To Reactivate the Standard Cisco Unity Conversation” procedure that follows.

To Activate Optional Conversation 1

**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 Key Mappings for the Message Retrieval Conversation.

**Step 4**
In the New Value box, enter \<Drive:>\CommServer\Support\OptConv1.ini (where <Drive:> is the directory in which Cisco Unity is installed), and click Set.

**Step 5**
When prompted, click OK.

**Step 6**
Click Exit.

**Step 7**
Exit and restart the Cisco Unity software for the registry change to take effect.

To Reactivate the Standard Cisco Unity Conversation

**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 Key Mappings for the Message Retrieval Conversation.

**Step 4**
In the New Value box, enter \<Drive:>\CommServer\Support\Unitykey.ini (where <Drive:> is the directory in which Cisco Unity is installed), and click Set.

**Step 5**
When prompted, click OK.

**Step 6**
Click Exit.

**Step 7**
Exit and restart the Cisco Unity software for the registry change to take effect.

Changing the Default Display Name Parsing Rule (Cisco Unity 4.0(x) Only)

To comply with Octel analog networking, when the Bridge and remote Octel systems exchange directory information, only a single field is passed for the display (text) name. The CsBridgeConnector service on the Cisco Unity bridgehead server parses the display name sent from an Octel system via the Bridge into separate first and last name fields when the accounts for auto-created Bridge subscribers are created or updated. Depending on the display name conventions of the Octel system, some names may not be parsed as desired.

By default, the CsBridgeConnector service uses the following rules when parsing display names received from an Octel system via the Bridge:

- If one or more comma characters are present in the display name:
  - All characters after the first comma in the string are saved as the first name.
  - All characters before the first comma in the string are saved as the last name.
For example, if “Bader, Kelly” is the display name, “Kelly” is saved as the first name and “Bader” is saved as the last name.

- If there are no comma or space characters present in the display name:
  - All characters in the string are saved as the first name.
  - The last name is left blank.

- If there are no comma characters but at least one space character present in the display name:
  - All characters before the last space in the string are saved as the first name.
  - All characters after the last space in the string are saved as the last name.

For example, if “Kelly Bader” is the display name, “Kelly” is saved as the first name and “Bader” as the last name.

Therefore, when the display names on the Octel systems start with the last name followed by a space and then the first name, with no comma separator between the last name and first name, the default parsing rules cause the first and last names to be reversed. For example, if “Bader Kelly” is the display name on the Octel system, when the Cisco Unity bridgehead server parses the display name, “Bader” is saved as the first name and “Kelly” as the last name. This means that the Bridge subscriber will not be found in the expected place in the phone directory.

If necessary, you can change the default parsing rules to handle this circumstance. Do the following procedure, To Change the Parsing Rule to Accommodate “LastName FirstName” Display Names (Cisco Unity 4.0(x) Only), page 1-15.

To Change the Parsing Rule to Accommodate “LastName FirstName” Display Names (Cisco Unity 4.0(x) Only)

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>On the Cisco Unity server desktop, double-click the Cisco Unity Tools Depot icon.</td>
</tr>
<tr>
<td>Step 2</td>
<td>In the left pane, under Administrative Tools, double-click Advanced Settings Tool.</td>
</tr>
<tr>
<td>Step 3</td>
<td>In the Unity Settings pane, click Bridge: reverse order of first name/last name parsing.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Select 1 from the New Value list.</td>
</tr>
<tr>
<td>Step 5</td>
<td>Click Set, and then OK.</td>
</tr>
<tr>
<td>Step 6</td>
<td>Close the Advanced Settings Tool.</td>
</tr>
<tr>
<td>Step 7</td>
<td>Restart the CsBridgeConnector service on the Cisco Unity bridgehead server.</td>
</tr>
</tbody>
</table>

Note that only the parsing rules are changed; the display name saved in Cisco Unity and Active Directory remains the same. For example, if “Bader Kelly” is the display name, “Kelly” will be saved as the first name and “Bader” as the last name, but the display name “Bader Kelly” will not be changed.

Configuring the Bridge

When setting up Cisco Unity and the Bridge, complete the tasks in the following order:

1. Extend the Active Directory schema
2. Install the Cisco Unity Voice Connector
3. Configure the Cisco Unity server for Bridge Networking
4. Configure the Bridge
If you set things up in this order, directory synchronization between Cisco Unity and the Bridge happens automatically. However, if you set things up in the wrong order, when the setup is complete you must manually synchronize the directories.

**Note**  
To manually synchronize the directories, in the Cisco Unity Administrator, go to the Network > Bridge Options > Synchronization Options page and click Synchronize.

Most of the pages in the Bridge Administrator have default settings. In most cases, the default settings are appropriate when configuring the Bridge for the first time. The following procedure includes steps for all settings that are required for configuring the Bridge. For more information about these settings, see the “Bridge Reference: Settings on the Bridge Server” section on page 1-50.

**To Configure the Bridge**

**Step 1**  
If necessary, access the Cisco Unity Bridge server as discussed in the “Accessing the Cisco Unity Bridge for Administration” section on page 1-51.

**Step 2**  
From the Configuration menu, click **System Settings**.

**Step 3**  
In the Attempts On Bad Connection box, enter the number of times that the server will call a line with a bad connection before it returns the message as non-deliverable.

**Step 4**  
In the Name Aging box, enter the number of days that the server will retain a usage-based directory entry that has not been referenced before deleting the entry. Enter 0 to disable name aging.

**Step 5**  
Accept the default settings for Queued Call Threshold and Max Ports Per Node.

**Note**  
After Cisco Unity and the Bridge are configured, and messaging between Cisco Unity and Octel subscribers is working correctly, see the “Controlling the Number of Ports Used for Outgoing Messages” section on page 1-64 to determine if you need to adjust these values.

**Step 6**  
Click **Save**.

**Step 7**  
From the Configuration menu, click **Digital Networking**.

**Step 8**  
Optionally, in the ESMTP Server box, enter the IP address of the ESMTP server to which the Bridge should connect to send SMTP messages to the Voice Connector. If you do not enter a name here, the address entered on the Unity Nodes page in the Unity SMTP Mail Suffix field is used when the Bridge server attempts to establish an SMTP connection.

To determine if use of the ESMTP server field is necessary, and to verify SMTP connectivity from the Bridge server to Exchange, do the following sub-steps:

a. Open a command window on the Bridge server.

b. Enter `telnet <exchangeDomain> 25` where `<exchangeDomain>` is the SMTP recipient policy of the mail system supporting Cisco Unity (for example, mail.companya.com). You should see a screen similar to the following:

```
220 server1.mail.companya.com Microsoft ESMTP MAIL Service, Version: 5.0.2195.5329 ready at Sun, 17 Nov 2002 10:21:24 -0800
```

c. Verify that the fully qualified domain name of the responding SMTP server (in the above example, “server1.mail.companya.com”) is either the Exchange server on which the Voice Connector is installed, or a server capable of routing messages to the Exchange server on which the Voice Connector is installed.
Chapter 1 Bridge Networking

Procedures for Setting Up Networking Between Cisco Unity and the Bridge

Chapter 1 Bridge Networking

Step 9 Verify that the Bridge is able to connect via SMTP to the Exchange server on which the Voice Connector is installed by doing the following sub-steps:

a. Open a command window on the Bridge server.
b. Enter `telnet <IPaddress> 25` where `<IPaddress>` is the IP address of the Exchange server on which the Voice Connector is installed. You should see a screen similar to the following:

```
220 server1.mail.companya.com Microsoft ESMTP MAIL Service, Version: 5.0.2195.5329 ready at Sun, 17 Nov 2002 10:21:24 -0800
```
c. Verify that the fully qualified domain name of the responding SMTP server (in the above example, “server1.mail.companya.com”) is either the Exchange server on which the Voice Connector is installed, or a server capable of routing messages to the Exchange server on which the Voice Connector is installed.
d. Enter `quit` to end the telnet session.

Step 10 In the Cisco Unity Bridge Domain name box, enter the fully qualified domain name of the Bridge server. To determine the fully qualified domain name of the Bridge server, do the following sub-steps:

a. From the Windows Start menu on the Bridge server, click `Settings > Control Panel`.
b. Double-click `System`.
c. Click the `Network Identification` tab. The fully qualified domain name of the Bridge server is listed on this tab as the Full Computer Name.

The name that you enter here must match the name that is displayed in the Cisco Unity Administrator on the Primary Locations page in the Server Address field.

Step 11 Click `Save`, and restart the Digital Networking service on the Bridge server.

Step 12 Verify SMTP Connectivity from Exchange to the Bridge server by doing the following sub-steps:

a. Open a command window on the Exchange server on which the Voice Connector is installed.
b. Enter `telnet <BridgeServerFQDN> 25`, where `<BridgeServerFQDN>` is the fully qualified domain name of the Bridge server entered in Step 10. You should see a screen similar to the following:

```
220 bridge Digital Networking ESMTP server ready
```
c. Verify you see the correct responding Bridge server name (in the above example, “bridge”).
d. If the telnet test was successful, enter `quit` to end the telnet session.

Step 13 From the Configuration menu, click `Unity Nodes`.

Step 14 Click `Add`.

Step 15 In the Serial Number box, enter the serial number of the Unity node. The Serial Number must match the number that is displayed in the Cisco Unity Administrator on the Primary Locations page in the Bridge Node ID field.

Step 16 In the Name box, enter the name of the node.

Step 17 In the Unity Computer Name box, enter the server name of the Cisco Unity server with which the Bridge communicates.
Step 18  In the Unity SMTP Mail Suffix box, enter the SMTP recipient policy of the mail system supporting Cisco Unity (for example, mail.companya.com).

Step 19  Select the codec used to encode all voice messages sent from the Bridge to Cisco Unity subscribers and all recorded voice names from the Bridge to the Cisco Unity bridgehead server.

Step 20  Click Save.

Step 21  From the Configuration menu, click Octel Nodes.

Step 22  Click Add.

Step 23  In the Serial Number box, enter the serial number of the node. The Serial Number must match the number that is displayed in the Cisco Unity Administrator in the Octel Node ID field on the Delivery Locations page that corresponds to this Octel Node.

Step 24  In the Name box, enter the name of the node.

Step 25  In the Phone Number box, enter the phone number that the server dials to send messages to the remote node.

Step 26  Optionally, in the Extension box, enter an extension number if it must be dialed to reach the remote node.

Step 27  Optionally, in the Dial Sequence box, enter a dial sequence if one is required to call the remote node. At a minimum, this box must contain at least the default value N.

Step 28  Click Save.

Step 29  Repeat Step 21 through Step 28 for each Octel node in the network.

Adding Password Protection to the Bridge Administrator

Although the Bridge server itself is password protected, you may also want to add password protection to the Bridge Administrator.

To Add Password Protection to the Bridge Administrator

Step 1  Log on to the Bridge server platform by using the Administrator account.

Step 2  On the Windows Start menu, click Programs > Administrative Tools > Internet Service Manager.

Step 3  In the tree, click the server name.

Step 4  Right-click Default Web Site and select Properties.

Step 5  Click the Directory Security tab. In the Anonymous Access and Authentication section, click Edit.

Step 6  Select Integrated Windows Authentication, and uncheck the Anonymous Access check box.

Step 7  Click OK twice and close the Internet Service Manager.

Step 8  In Windows Explorer, browse to the \starfish\asp directory.

Step 9  Right-click the \starfish\asp directory and select Properties.

Step 10  Click the Security tab.

Step 11  Select Everyone. Uncheck the Allow Inheritable Permissions From Parent check box and click Remove.

Step 12  Click Add to add users or groups to the Access Control List (ACL). Click OK when finished.

Step 13  In the Permissions list, select Full Control for the person(s) you want to have access.
Step 14  Click OK and close Windows Explorer.

Creating Bridge Subscribers

There are several approaches and tools available for creating Bridge subscribers on the Cisco Unity server or creating permanent directory entries on the Bridge server, which results in auto-created Bridge subscribers.

See the following sections for more information:

- Before Creating Subscriber Accounts, page 1-19
- Approaches to Creating Bridge Subscribers, page 1-21
- Using the Cisco Unity Bulk Import Wizard to Create Multiple Subscriber Accounts (Cisco Unity 4.0(x) Only), page 1-22
- Using the External User Import Utility to Create Multiple Bridge Subscriber Accounts (Cisco Unity 3.1(x) Only), page 1-24
- Using the Cisco Unity Administrator to Create Bridge Subscriber Accounts, page 1-25
- Using the Bridge Administrator to Create Permanent Directory Entries, page 1-26
- Using the Cisco Unity Bridge Mailbox Import Tool to Create Permanent Directory Entries
- After Creating Subscriber Accounts, page 1-28

Before Creating Subscriber Accounts

This section lists—in order—the issues that you must consider before creating 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 subscribers, or whether Cisco Unity is properly configured to work with your message store, use the following procedure, To Check Cisco Unity Setup and Permissions by Using the Cisco Unity SysCheck Tool, page 1-19.

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

<table>
<thead>
<tr>
<th>Step 1</th>
<th>On the Cisco Unity server desktop, double-click the Cisco Unity Tools Depot icon.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>In the left pane of the Tools Depot window, in the Diagnostic Tools directory, double-click SysCheck.</td>
</tr>
<tr>
<td>Step 3</td>
<td>On the Welcome to the Cisco Unity Configuration Wizard page, click Select Configuration Tests, and click Next.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Uncheck the boxes for the message stores that are not connected to Cisco Unity.</td>
</tr>
<tr>
<td>Step 5</td>
<td>Click Test.</td>
</tr>
<tr>
<td>Step 6</td>
<td>In the Test Results box, click the link provided to view the test results.</td>
</tr>
<tr>
<td>Step 7</td>
<td>If no errors are reported, proceed to Step 8. Otherwise, do the following steps:</td>
</tr>
<tr>
<td></td>
<td>a. Follow the advice offered in the Resolution column to correct each configuration or permissions error.</td>
</tr>
<tr>
<td></td>
<td>b. Return to the Completing the Check Unity Configuration Wizard page, and click Finish.</td>
</tr>
</tbody>
</table>
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 Bridge 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 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 Bridge subscribers because they cannot log on to Cisco Unity or use the Cisco Personal Communications Assistant (PCA), administrators can enter call transfer numbers for Bridge subscribers. For security purposes, you should modify the restriction table used for transfers in the COS to which Bridge 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 subscriber account is based. For details, refer to the “Public Distribution List Settings” chapter in the Cisco Unity System Administration Guide.

In Active Directory, Bridge subscribers correspond to contacts, and public distribution lists correspond to distribution groups. This means that the contacts and distribution lists are listed in the address book for Outlook (or other e-mail client). To prevent e-mails from being sent to Bridge subscribers, you may want to create lists that contain only Bridge subscribers, and then hide these distribution lists and contacts from Exchange address lists. Additionally, you may want to exclude Bridge subscribers from the All Subscribers distribution list or any other distribution list that contains regular subscribers.

5. Subscriber Templates
In the Cisco Unity Administrator, you can specify settings for a group of subscribers by using a subscriber template. Subscriber templates contain settings that are appropriate for subscribers of a particular type, such as a department. The settings from the template you choose are applied to subscriber accounts as the accounts 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.

You may want to use the {Bridge Subscriber} Template. By default, Bridge subscribers created with the {Bridge Subscriber} Template are not added to any distribution lists and are not listed in the Cisco Unity phone directory.
Approaches to Creating Bridge Subscribers

This section summarizes the general approaches to creating Bridge subscribers.

**Approach A: Creating Bridge Subscribers in Cisco Unity**

If you want the extensions that you assign to Bridge subscribers to fit in with your numbering plan, create the Bridge subscribers in Cisco Unity. See the following sections:

- Using the Cisco Unity Bulk Import Wizard to Create Multiple Subscriber Accounts (Cisco Unity 4.0(x) Only), page 1-22
- Using the External User Import Utility to Create Multiple Bridge Subscriber Accounts (Cisco Unity 3.1(x) Only), page 1-24
- Using the Cisco Unity Administrator to Create Bridge Subscriber Accounts, page 1-25

Note that the Bridge subscribers will be subject to name aging deletion (if enabled), and the recorded voice name for the Bridge subscribers will be retrieved from the Octel system the first time a Cisco Unity subscriber sends them a message. For more details, see the “Creating Bridge Subscribers in Cisco Unity” section on page 1-37.

**Approach B: Creating Permanent Directory Entries on the Bridge Server**

If you want the Bridge subscribers to always have recorded voice names and not be subject to name aging deletion, create permanent directory entries on the Bridge server. See the following sections:

- Using the Bridge Administrator to Create Permanent Directory Entries, page 1-26
- Using the Cisco Unity Bridge Mailbox Import Tool to Create Permanent Directory Entries, page 1-26

The Bridge retrieves the text and voice names from the Octel system for the directory entries and passes this information to Cisco Unity so that it is used when the Bridge subscribers are created. Each auto-created Bridge subscriber will be assigned an extension that consists of the delivery location dial ID followed by the remote mailbox number. For more details, see the “Creating Permanent Directory Entries on the Bridge Server” section on page 1-37.

**Approach C: Creating Bridge Subscribers and then Creating Corresponding Permanent Directory Entries**

If you want the benefits of both approaches, first create the Bridge subscribers on the Cisco Unity server, and then create corresponding directory entries on the Bridge server. When set up this way, the Bridge subscribers will have the extensions that you assign, they will not be subject to name aging deletion, and the Bridge subscriber accounts will automatically be updated with the text and voice names retrieved from the Octel system. For more details, see the “Creating Bridge Subscribers and then Creating Corresponding Permanent Directory Entries” section on page 1-38.
Using the Cisco Unity Bulk Import Wizard to Create Multiple Subscriber Accounts (Cisco Unity 4.0(x) Only)

The Cisco Unity Bulk Import wizard allows you to create multiple subscriber accounts at once by importing user data from 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 new Active Directory contacts at the same time that you create subscriber accounts, or you can use it to create subscriber accounts with existing Active Directory contact data.

If you choose to create subscriber accounts with existing Active Directory contact data, note that the e-mail addresses for the imported contacts are overwritten with extension addresses used for addressing voice messages to the remote voice messaging systems. Thus, the imported objects can no longer be used for outbound message addressing to remote e-mail addresses.

Use the following procedure to prepare your CSV file. To learn more about preparing a CSV file for use with the Cisco Unity Bulk Import wizard—including information on the required and optional column headers for your CSV file—refer to the Cisco Unity Bulk Import wizard online Help.

**To Prepare a CSV File for Creating Bridge Subscriber Accounts (Cisco Unity 4.0(x) Only)**

**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 folder 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 the character(s) 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 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, the extension (DTMF_ACCESS_ID), and then by the remote mailbox number (REMOTE_USER_ID):

```
Abade,Alex,2001,3000
Bader,Kelly,2002,3100
Campbell,Terry,2003,3200
Cho,Li,2004,3300
```

**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,DTMF_ACCESS_ID,REMOTE_USER_ID
```

**Note**
The examples throughout this procedure illustrate how to set up a CSV file so that the Cisco Unity Bulk Import wizard creates subscriber accounts and new contacts at the same time. If you choose to create new subscriber accounts with existing mailbox and Windows account data, you must also include the ALIAS column header and data in your CSV file.
For example, using the sample data from Step 4, the CSV file would look like this:

```
LAST_NAME, FIRST_NAME, DTMF_ACCESS_ID, REMOTE_USER_ID
Abade, Alex, 2001, 3000
Bader, Kelly, 2002, 3100
Campbell, Terry, 2003, 3200
Cho, Li, 2004, 3300
```

**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 every row does not have to contain data for any optional column header(s).
- Any data that includes a space, quotes, or commas is contained within quotes.

**Step 7**  
In Cisco Unity 4.0(2) and later, to associate the subscribers in the CSV file with a delivery location, you can either choose from the list of defined delivery locations presented by the Cisco Unity Bulk Import wizard during the import, or you can add the DELIVERY_LOCATION_ID column to the CSV file.

The DELIVERY_LOCATION_ID column contains the dial ID of a delivery location that the external subscriber will be associated with. This value corresponds to the Dial ID field on the Network > Delivery Locations > Profile Page in the Cisco Unity Administrator. If this column header is omitted, or if a row does not contain a value, the delivery location that the Cisco Unity Import wizard prompts for is used as a default. You can import external subscribers for multiple delivery locations by using one CSV file.

**Step 8**  
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 9**  
Confirm that each row contains the appropriate data corresponding to each column header.

**Step 10**  
Save the file as a CSV file.

**Step 11**  
Continue with the next procedure, *To Create Bridge Subscriber Accounts by Using the Cisco Unity Bulk Import Wizard (Cisco Unity 4.0(x) Only)*, page 1-23.
Procedures for Setting Up Networking Between Cisco Unity and the Bridge

Chapter 1 Bridge Networking

Step 6
If you had import errors, but in Step 4 you chose to correct them later, see the “Correcting CSV Import Errors (Cisco Unity 4.0(x) Only)” section on page 1-24.

If you had no import errors, or if all errors have now been corrected, see the “After Creating Subscriber Accounts” section on page 1-28.

Correcting CSV Import Errors (Cisco Unity 4.0(x) Only)

The error log file contains data that the Cisco Unity Bulk Import wizard could not import. The wizard reports the first error it detects in a row in a CSV file. Once you correct that error, the wizard may detect additional errors in the same 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 that you run the wizard, the error and output log files are overwritten (unless you specify new names for the files).

To correct import errors, use the procedure, To Correct Errors that Occurred when Importing Data from a CSV File (Cisco Unity 4.0(x) Only), page 1-24.

To Correct Errors that Occurred when Importing Data from a CSV File (Cisco Unity 4.0(x) Only)

Step 1
Go 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
Go 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 subscriber accounts are created without error, and then proceed to the “After Creating Subscriber Accounts” section on page 1-28.

Using the External User Import Utility to Create Multiple Bridge Subscriber Accounts (Cisco Unity 3.1(x) Only)

The External User Import utility has been replaced by the Cisco Unity Bulk Import Wizard in Cisco Unity 4.0(x).

To Create Bridge Subscribers by Using the External User Import Utility (Cisco Unity 3.1(3) and Later)

Step 1
In the database that contains the data with which you want to create Bridge subscribers, save the data as a CSV file. Alternatively, create a CSV file from scratch that contains the needed information about the Bridge subscribers.
Step 2  Open the CSV file in a spreadsheet application or another application in which you can edit the data.

Step 3  In the first row of the CSV file, create column headers. The file must contain at least these column headers:

LAST_NAME, FIRST_NAME, REMOTE_USER_ID, EXTENSION

- All column headers must be in uppercase and spelled as shown.
- Separate values by commas. Do not use a tab, spaces, or a semicolon to separate values in the file.

Refer to the External User Import Help file that comes with the utility for more information about the optional fields.

Step 4  Enter the rest of the subscriber information in the CSV file, as needed. Save and close the file.

Step 5  Copy the file to the Cisco Unity server or to a directory that you can browse to from the server.

Step 6  On the Cisco Unity server desktop, double-click the Cisco Unity Tools Depot icon.

Step 7  Run ToolsDepot.exe.

Step 8  Double-click External User Import.

Step 9  Follow the on-screen instructions. Refer to the External User Import Help file for more information, as necessary.

---

Using the Cisco Unity Administrator to Create Bridge Subscriber Accounts

Using the Cisco Unity Administrator, you can create Bridge subscriber accounts one at a time. When you add a new Bridge subscriber account, Cisco Unity creates a contact in Active Directory.

To create a Bridge subscriber account, do the procedure, To Add a New Bridge Subscriber by Using the Cisco Unity Administrator, page 1-25.

To Add a New Bridge Subscriber by Using the Cisco Unity Administrator

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

Step 2  Click the Add icon.

Step 3  Click New and select Bridge from the list.

Step 4  Enter the First Name and Last Name.

Step 5  Enter the Extension of the Bridge subscriber on Cisco Unity. This is the number that Cisco Unity subscribers use when addressing a message to this Bridge subscriber.

Step 6  Select the Subscriber Template to use.

Step 7  Enter the Remote Mailbox Number, which is the number that the remote voice messaging system uses to route messages to this Bridge subscriber.

Step 8  Select the Delivery Location with which the subscriber is associated.

Step 9  Click Add.

Step 10  On the subscriber record, customize settings as appropriate, and click the Save icon.
Using the Bridge Administrator to Create Permanent Directory Entries

You can use the Bridge Administrator to create permanent directory entries one at a time. The Bridge retrieves the text and voice names from the Octel system for the directory entries. This data is passed to Cisco Unity when the corresponding Bridge subscriber accounts and Active Directory contacts are automatically created. The Bridge subscriber accounts created in this way are not subject to name aging.

Like any auto-created Bridge subscribers, these subscriber accounts are created with the subscriber template specified on the Bridge Subscriber Creation Options page in the Cisco Unity Administrator. By default, the predefined {Bridge Subscriber} template is used. The corresponding auto-created Bridge subscribers are assigned extensions in the form <BridgeDeliveryLocationDialID><RemoteMailboxNumber>.

To Add a New Bridge Subscriber by Using the Bridge Administrator

1. If necessary, access the Cisco Unity Bridge server as discussed in the “Accessing the Cisco Unity Bridge for Administration” section on page 1-51.
2. From the Configuration menu, click Octel Nodes.
3. Select the Octel node you want to add directory entries to, and click Edit.
6. On the Directory Entry page, enter the subscriber mailbox number in the Mailbox Number box.
7. Optionally, enter the subscriber name in the Name box. If you enter a name here, it will be overwritten by the name retrieved from the Octel node.
8. Click Save.

The Bridge server makes an administrative call to the Octel node to obtain the text and recorded voice name for the directory entry and the corresponding Bridge subscriber.

Using the Cisco Unity Bridge Mailbox Import Tool to Create Permanent Directory Entries

The Cisco Unity Bridge Mailbox Import Tool (MBUpload.exe) is a console application on the Bridge server that allows you to create, modify, or delete multiple permanent directory entries at once by importing user data from a comma-separated value (CSV) file. CSV is a common text file format for moving data from one data store to another.

The Bridge retrieves the text and voice names from the Octel system for the directory entries. This data is passed to Cisco Unity when the corresponding Bridge subscriber accounts and Active Directory contacts are automatically created. The permanent directory entries and the Bridge subscriber accounts created in this way are not subject to name aging.

Like any auto-created Bridge subscribers, these subscriber accounts are created with the subscriber template specified on the Bridge Subscriber Creation Options page in the Cisco Unity Administrator. By default, the predefined {Bridge Subscriber} template is used. The corresponding auto-created Bridge subscribers are assigned extensions in the form <BridgeDeliveryLocationDialID><RemoteMailboxNumber>.

Note that if corresponding Bridge subscriber accounts have already been created for the directory entries, the existing Bridge subscriber accounts are updated with the text and voice names retrieved from the Octel system.
To Prepare a CSV File for Use with MBUpload

**Step 1** Save the data which you will use to create the directory entries as a CSV file. At a minimum, you need the Octel serial numbers and remote mailbox numbers for the subscribers; text names are optional because they will be retrieved from the Octel server.

**Step 2** Copy the CSV file to the Bridge server or to a folder 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. Confirm that the data is separated by commas in the file.

**Step 4** Rearrange the data as necessary. Each directory entry should appear on a separate line. Although the CSV file does not contain column headers, the columns must contain the following data in the order listed below:

1. Octel serial number of the system where the mailbox resides.
2. Remote mailbox number.
3. <Reserved for future use; this column must remain empty.> Note, however, that you must still enter a comma as if there was data in the column.
4. Action to perform: enter A to add, C to change, or D to delete.
5. Text Name. Note that this column is optional, because the text name will be retrieved from the Octel server.

For example, the file may look like the following:

```
12345,4001,,A,Alex Abade
12345,4002,,A,Kelly Bader
12345,4003,,A,Terry Campbell
12345,4004,,A,
12345,4005,,A,
```

**Step 5** Confirm that each row contains the appropriate data, and save the file as a CSV file.

**Step 6** Continue with the next procedure, To Run MBUpload, page 1-27.

To Run MBUpload

**Step 1** On the Bridge server, open a command prompt window.

**Step 2** Enter `cd \bridge\starfish\bin` to change to the directory where MBUpdate.exe is located.

**Step 3** Run MBUpload with the following command line:

```
MBUpload [/I:<InFile>] [/O:<OutFile>] <DB Path>
```

Note the following:

- `<InFile>`—Optional. Specifies the input CSV file name. The infile can reside in any directory that is accessible to MBUpload.exe. If infile is not specified, the default file MBUploadIn.csv in the working directory is used. If the path contains spaces, put quotation marks around it.

- `<OutFile>`—Optional. Specifies the output file which will contain exception reports. If not specified, the default file MBUploadOut.csv in the working directory is used. As MBUpload processes each record, it copies the row from the Infile to the Outfile and appends “Successful” if the operation was a success. If the path contains spaces, put quotation marks around it.

- `<DB Path>`—Required. Specifies the full path name to the Bridge database file. The path is usually D:\Bridge\Starfish\DB\Starfish.MDB. If the path contains spaces, put quotation marks around it.
For example, to specify the Input.csv and Output.csv in the C:\CSVfiles folder, enter:

MBUpload /I:C:\CSVfiles\Input.csv /O:C:\CSVfiles\Output.csv D:\Bridge\starfish\db\starfish.mdb

To use the default MBUploadIn.csv and MBUploadOut.csv, enter:

MBUpload D:\Bridge\starfish\db\starfish.mdb

After Creating Subscriber Accounts

After creating Bridge subscriber accounts, consider the following:

- It takes a few minutes for a newly-created subscriber to be available to receive messages.
- If applicable and desired, you can reduce the possibility that e-mails will be sent to Bridge subscribers, by hiding the corresponding contacts from the Exchange address list. See the “Hiding Bridge Subscribers” section on page 1-45 for more information.
- If you change the Dial ID of the delivery location with which the Bridge subscribers are associated, you will need to run the Extension Address utility to generate new extension addresses. See the “Extension Addresses” section on page 1-38.

In Cisco Unity 4.0(2) and later, when you want to modify unique subscriber settings—such a primary or alternate extensions—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 subscriber account. See the “Deleting Bridge Subscribers (Cisco Unity 4.0(2) and Later)” section on page 1-41 for details.

Bridge Concepts and Definitions

This section explains how networking with the Bridge works, and describes the various Cisco Unity components used. See the following sections for more information:

- How Cisco Unity Bridge Translates Messages, page 1-29
- How Octel Nodes Are Represented in Cisco Unity, page 1-29
- Message Addressing Options, page 1-30
- NameNet Emulation, page 1-31
- How Octel Node Directory Entries Are Represented in Cisco Unity, page 1-31
- UOmni Mailbox, page 1-32
- Directory Synchronization, page 1-33
- Voice Connector and Bridge Networking, page 1-34
- Failover and the Bridge, page 1-35
How Cisco Unity Bridge Translates Messages

The Cisco Unity Bridge supports the delivery of voice and fax messages between different messaging servers. Because of the different protocols that each server uses, the Bridge translates messages as appropriate for each server. To accomplish this translation, the Bridge uses the concept of a node. The Bridge maintains a table for the Octel node that contains the Octel server name, unique serial number, and phone number. It maintains another table for the Unity node that contains the Cisco Unity server name, assigned serial number, and domain name. By using these two tables, the Bridge server can receive a message from an Octel node, for example, look up the routing information from the Unity node table, reformat the information for the destination Unity node, and then send the message to the Unity node. A message coming from a Unity node and going to an Octel node goes through a similar process, but this time the Bridge server uses the Octel node table.

How Octel Nodes Are Represented in Cisco Unity

Octel nodes correspond to locations in Cisco Unity. Locations are Cisco Unity-specific objects that are used in networking. There are two types of locations: primary and delivery.

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. Each primary location contains the network information that identifies the Cisco Unity server to other Cisco Unity servers and other voice messaging systems.

When setting up Cisco Unity for networking with the Bridge, you do the following:

- Give the primary location a new name and a Dial ID
- Enter a Node ID (which identifies this Cisco Unity server within the Octel network)
- Enter the Bridge Server Address
- Customize other properties as appropriate

See the “Primary Location Profile Settings” section on page 3-1 for more information.

A delivery location contains the network information that Cisco Unity needs to send messages to and receive messages from other voice messaging servers—which may or may not be Cisco Unity servers. When setting up Bridge Networking, you create a delivery location to correspond to each Octel system with which the local Cisco Unity server will communicate. Each delivery location identifies an Octel system to Cisco Unity.

In organizations with multiple Cisco Unity servers networked together, the delivery locations should be created only on those Cisco Unity servers that will communicate with a Bridge.
Message Addressing Options

Cisco Unity provides the following message addressing options:

- **Blind addressing**—With blind addressing, Cisco Unity has the information that it needs to send messages to an Octel system in the Octel network, but it does not have specific information about the individuals associated with the other Octel nodes (such as their extensions and recorded voice names). To address a message to someone on another node, subscribers enter the delivery location Dial ID and the remote mailbox number of the recipient. Cisco Unity sends the message without confirming that the recipient exists.

- **Bridge subscribers**—With Bridge subscribers, Cisco Unity has information about the remote users, such as their names, extensions, and recorded voice names. Subscribers address messages to Bridge subscribers the same way that they address messages to regular Cisco Unity subscribers—by extension or by spelling the name of the recipient.

Subscribers can use the Cisco Unity phone conversation, ViewMail for Outlook, or the Cisco Unity Inbox to reply to and forward messages to Octel users.

Messaging Similarities and Limitations

For the most part, messaging between Cisco Unity and Octel subscribers is the same as messaging between Cisco Unity subscribers. For example:

- Messages marked urgent when they are sent are marked urgent when they are retrieved by the recipient.

- Messages marked private when they are sent are marked private when they are retrieved by the recipient. (Note however that in ViewMail, private messages from both Cisco Unity and Octel subscribers can be forwarded, but not modified.)

- The future delivery of messages to Octel recipients is supported.

- Cisco Unity subscribers can send messages to Cisco Unity distribution lists that include Bridge subscribers. A message from a Cisco Unity subscriber addressed to multiple Octel recipients is transmitted once to the Bridge. If all the recipients are on the same Octel node, the Bridge makes only one phone call to the node and transmits only one message.

- Fax messages can be sent, depending on Octel support.

Note the following exceptions:

- Requests for read receipt and delivery receipt messages are returned as delivery receipts. The receipt is delivered to the sender when the message is sent from the Bridge to the Octel node, not when the Octel system places the message in the subscriber mailbox or when the message is actually read.

- E-mail messages cannot be sent to Octel recipients even though ViewMail allows subscribers to address them. Instead of being delivered, e-mail messages sent to Octel recipients are returned to the sender as non-delivery receipts (NDRs).

- Messages marked as low importance in ViewMail are treated the same as regular messages.

Cisco Unity subscribers who have used the Octel phone menus will notice differences when they hear the standard Cisco Unity conversation. As an alternative, you can activate Cisco Unity Optional Conversation 1 so that subscribers hear message-retrieval menus that more closely resemble the choices that they are familiar with. Other menus—those that unidentified callers and Cisco Unity subscribers use to send and manage messages, as well as the menus that subscribers use to change their Cisco Unity settings—are the same as those in the Cisco Unity standard conversation however. See the “Activating Optional Conversation 1” section on page 1-13 for more information.
NameNet Emulation

Each Octel node has a permanent directory of the subscribers associated with the node. Each directory entry includes the subscriber name, extension, and recorded voice name. Additionally, each Octel node has another directory with entries containing the names, extensions, and voice names of subscribers on other nodes. NameNet is the Octel analog networking feature that allows nodes to obtain entries from the directories on other nodes. NameNet allows subscribers to:

- Address messages to people at other nodes by spelling the recipient name.
- Get recorded name confirmation when addressing a message to someone on another node.

Because the Bridge appears to be just another Octel node, it emulates NameNet functionality in the following ways:

- The Bridge maintains a permanent directory of Cisco Unity subscribers and a separate directory of Octel users.
- The Bridge automatically adds usage-based directory entries to the Octel node directory.
- In the Bridge Administrator, the Name Aging field on the System Settings page allows you to specify how long usage-based directory entries are kept when they are not referenced. You can also disable name aging, so that the directory entries are never deleted.
- In the Bridge Administrator, you can add permanent directory entries to the Octel node directory.

The first time any Cisco Unity subscriber sends a message to an Octel subscriber, the Bridge does not have an entry in its Octel node directory for the recipient. The Bridge sends the message, and makes an administrative call to the destination Octel node to obtain the name and the recorded voice name of the Octel subscriber. The Bridge adds the information to the Octel node directory that it maintains. This is a usage-based directory entry. If name aging is enabled, each time a usage-based entry is sent a message, the aging counter for the entry is reset. If the Octel subscriber does not receive any messages within the specified period of time (the default is 30 days), the Bridge deletes the directory entry. If at a later date a Cisco Unity subscriber sends a message to an Octel user whose directory entry has been deleted, the process starts again.

Permanent entries are not governed by the aging period. You can add new Octel node directory entries manually by using the Bridge Administrator or the Cisco Unity Bridge Mailbox Import Tool. When a permanent directory entry is created, the Bridge node places an administrative call to the Octel node to obtain the name and recorded voice name.

The Name Retrieval Retries and Name Retry Interval fields on the System Settings page in the Bridge Administrator allow you to control how often the Bridge attempts to retrieve spoken names that were not yet recorded on the Octel system when the Bridge initially attempted to retrieve them. See the “System Settings” section on page 1-51 for more information about these settings.

How Octel Node Directory Entries Are Represented in Cisco Unity

In Cisco Unity, Octel node directory entries are represented as Bridge subscribers. After adding a directory entry (either usage-based or permanent) to its Octel node directory, the Bridge sends an Add User request to Cisco Unity to create a Bridge subscriber account. Cisco Unity automatically creates an Active Directory contact for the Bridge subscriber account. See the “Bridge Subscriber Creation Options Settings” section on page 1-48 for information about the options that you can set for auto-created Bridge subscribers.
Chapter 1 Bridge Networking

Bridge Concepts and Definitions

The minimum permissions needed on the Active Directory container in which the contacts are created are:

- Create Contact objects applied onto this object
- Read properties applied onto Contact objects
- Write properties applied onto Contact objects
- List contents applied onto Contact objects

When the Bridge deletes a directory entry, it sends Cisco Unity a Delete User request, and Cisco Unity deletes both the Bridge subscriber account and the Active Directory contact.

When Cisco Unity automatically creates Bridge subscribers, the Active Directory contact is given an alias in the following format:

Bridge_<DeliveryLocationDialID>_<MailboxNumber>_<DisplayName>

If for some reason the Bridge is able to obtain the recorded voice name but not the name, a name is generated for both the subscriber account and the Active Directory contact by using the following format:

Bridge_<DeliveryLocationDialID>_<MailboxNumber>

The extension assigned to auto-created Bridge subscribers is the delivery location dial ID with the remote mailbox number added to the end (for example, if the delivery location dial ID is 111, and the remote mailbox number is 2222, the extension assigned will be 1112222).

You can also manually create Bridge subscribers in Cisco Unity by using the Cisco Unity Administrator or the Cisco Unity Bulk Import wizard. For additional information about Bridge subscribers, see the “Bridge Subscribers” section on page 1-36.

UOmni Mailbox

Administrative messages from the Bridge to create, modify, or delete Bridge subscribers are placed in a special Exchange mailbox, which has the display name UOmni_<servername>. (This mailbox can be removed just like any other Exchange mailbox, by using standard Microsoft tools.) The default size limit of the UOmni mailbox set to use the mailbox store defaults.

The Bridge Connector (a Cisco Unity component that runs as a Windows 2000 service called CsBridgeConnector) monitors the UOmni mailbox. When it receives a message, it parses the data and sends a request to the Cisco Unity database component to make the necessary change (creation, modification, or deletion) to the Bridge subscriber account.

In organizations with multiple Cisco Unity servers networked together, the UOmni mailbox needs to be set up only on the Cisco Unity server that communicates with the Bridge. When the primary Exchange server that Cisco Unity communicates with is on the same computer as Cisco Unity, the UOmni mailbox is created on the Cisco Unity server. When the primary Exchange server is not on the same computer as Cisco Unity, the UOmni mailbox is created on the primary Exchange server. See the “Considerations for Networked Cisco Unity Servers” section on page 1-44 for more information.

After installing the UOmni mailbox, if you later move it to another Exchange server, you will have to stop and then restart Cisco Unity after the move. Otherwise, messages get stuck in the mailbox.

See the “Creating the UOmni Mailbox” section on page 1-8 for information about setting up the UOmni mailbox. Note that when Cisco Unity creates the UOmni mailbox, it also creates the {Bridge Subscriber} Template that by default is used when Cisco Unity automatically creates Bridge subscribers.
Directory Synchronization

The Bridge maintains a permanent directory of Cisco Unity subscribers. Cisco Unity keeps its subscriber directory synchronized with the subscriber directory on the Bridge. The Bridge Connector (a Cisco Unity component that runs as a Windows 2000 service called CsBridgeConnector) watches for changes in subscriber data by monitoring the SQL database on the Cisco Unity server that communicates with the Bridge. If a change is detected, the Bridge Connector sends the updated data to the Bridge. The Bridge Connector also monitors the UOmini mailbox for changes from the Bridge so that the necessary changes (creation, modification, or deletion) to the Bridge subscriber accounts are made.

Cisco Unity does not send information about Internet, AMIS, or Bridge subscribers to the Bridge; only information about “regular” Cisco Unity subscribers is sent to the Bridge. Note that subscribers who are not listed in the Cisco Unity phone directory will nonetheless be listed in the Octel phone directory.

Directory synchronization does not impact messaging. Subscribers can still send and receive messages when the directories are not synchronized. If Cisco Unity subscriber information is missing from the Bridge directory, the Octel system cannot retrieve the voice name when an Octel subscriber addresses a message, but the message is still delivered. When Cisco Unity and the Bridge are initially configured, a full synchronization occurs. Subsequently, if there is a change to Cisco Unity subscriber data, only the changed data is sent to the Bridge.

The Bridge synchronization options in the Cisco Unity Administrator allow you to control the scope when synchronizing the subscriber directory on the Bridge with the subscriber directory on Cisco Unity. Additionally, it provides an option for forcing a full synchronization. See the “Bridge Synchronization Options Settings” section on page 1-49 for more information.

The amount of time necessary for a full synchronization depends on many factors, such as the network connection to the Bridge, the size of the directory, whether subscribers have recorded voice names, and the codec used to record the voice names. (Voice name data is large in comparison with the other subscriber information that is sent to the Bridge.)

For an idea of how long a full synchronization from Cisco Unity to the Bridge may take, note the following examples obtained during testing:

- 1000 subscribers with 5-second voice names recorded with the G.711 codec—approximately 5 hours
- 1000 subscribers with no recorded voice names—approximately 3 minutes
- 1000 subscribers with 2.5-second voice names recorded with the G.711 codec—approximately 2.5 hours
- 1000 subscribers with 2.5-second voice names recorded with the G.729a codec—approximately 1 hour

Once a full synchronization of Cisco Unity subscriber data to the Bridge has been initiated—either manually using the Synchronize button on the Bridge Options page in the Cisco Unity Administrator, or automatically when the Unity Node is configured on the Bridge server—no subsequent synchronization requests will be processed until the current synchronization is complete. As you can see from the examples above, in a situation where thousands of Cisco Unity subscribers are within the scope being synchronized to the Bridge, this process could last days.

There may be situations where an abort of the in-process full synchronization is desired; for example, if the scope was set incorrectly when the synchronization was initiated.
To Abort an In-Process Full Synchronization of Cisco Unity Subscriber Data to the Bridge Server

**Step 1**  On the Cisco Unity bridgehead server, stop the CsBridgeConnector service. (On the Windows Start menu, click Programs > Administrative Tools > Services. Right-click CsBridgeConnector, and select Stop.)

**Step 2**  Start Regedit.

⚠️ **Caution**  Changing the wrong registry key or entering an incorrect value can cause the server to malfunction. Before you edit the registry, confirm that you know how to restore it if a problem occurs. (Refer to the “Restoring” topics in Registry Editor Help.) Note that for Cisco Unity failover, registry changes on one Cisco Unity server must be made manually on the other Cisco Unity server, because registry changes are not replicated. If you have any questions about changing registry key settings, contact Cisco TAC.

**Step 3**  If you do not have a current backup of the registry, click Registry > Export Registry File, and save the registry settings to a file.

**Step 4**  Expand the following key:

- HKEY_LOCAL_MACHINE\Software\Active Voice\Directory Connectors\CsBridgeConnector\1.0\Settings

**Step 5**  Double-click ReSyncAll.

**Step 6**  In the Edit DWORD Value dialog box, enter 0.

**Step 7**  Click OK, and exit Regedit.

**Step 8**  Start the CsBridgeConnector service.

---

**Voice Connector and Bridge Networking**

The Voice Connector allows Cisco Unity to send messages to and receive messages from the Bridge. When subscribers use the phone to address a message to a recipient who uses an Octel system, Cisco Unity constructs an address for the message in the following format:

OMNI:<Location Dial ID>_<Remote Mailbox>

The Voice Connector is registered with Exchange to handle messages with the OMNI address type. For an outbound message to an Octel recipient, the Voice Connector transforms the message into the proprietary VPIM format and sends the message to the Bridge by using SMTP. For an incoming message from the Bridge, the Voice Connector transforms the message from the proprietary VPIM format to a voice message and hands it to Exchange to be delivered.

⚠️ **Caution**  If your network consists of both Exchange 5.5 and Exchange 2000 servers, do not use the Exchange 5.5 Administrator to manage the Voice Connector for Exchange 2000. Use the Exchange 2000 System Administrator to manage the Voice Connector. To avoid system errors, use the Exchange 5.5 Administrator to configure Exchange 5.5 objects, and use the appropriate MMC snap-in to configure Exchange 2000 objects.

See the “Setting Up the Voice Connector for Bridge Networking (Exchange 2000)” section on page 1-7 for information about setting up the Voice Connector.
Failover and the Bridge

When your Cisco Unity server is configured for failover, the Cisco Unity subscriber directory is not synchronized with the Bridge directory while the secondary server is active. When the primary server becomes active again, synchronization resumes automatically. Failover provides for replication of subscriber data between the primary and secondary Cisco Unity servers, so existing directory information will be available to subscribers no matter which server is active.

When the secondary server is active, subscribers on Cisco Unity and on the Octel system can still send and receive messages, but changes to Cisco Unity subscriber accounts will not be replicated to the Bridge immediately. For example, if you add subscriber accounts on the active secondary server, this information is not replicated to the Bridge until the primary server becomes active again.

Blind Addressing and Bridge Networking

Blind addressing is one of the methods that Cisco Unity provides for addressing messages to Octel users. Blind addressing allows Cisco Unity to address messages without having specific information about the Octel recipients (such as their names and voice names). One of the steps to setting up blind addressing is to change the Blind Addressing setting on the Primary Location > Addressing Options page to something other than none. You also create a delivery location that corresponds to each Octel node with which Cisco Unity communicates.

You provide the following information for each delivery location:

- **Octel Node ID**—The number of the Octel node that corresponds to this delivery location. This number must match the Serial Number of one of the nodes displayed on the Octel Nodes page in the Bridge Administrator. Likewise, the Serial Number of an Octel node in the Bridge Administrator must match the number of an Octel node.
- **Dial ID**—A unique number that identifies the location to Cisco Unity. This is the number that subscribers dial when blind addressing messages to individuals who use the remote voice messaging system.

Note that on the primary location profile page, you provide the Bridge Server Address and the Node ID that identifies Cisco Unity to the other Octel nodes.

When blind addressing a message, subscribers enter a number that is made up of the delivery location Dial ID and the mailbox number of the recipient. Because the Bridge supports NameNet, blind addressing is really only “blind”—meaning there is no voice name confirmation—the first time a Cisco Unity subscriber sends a message to an Octel subscriber. In this case, before addressing the message, Cisco Unity parses the number that the subscriber entered and searches for a matching delivery location. If Cisco Unity does not find a matching location, it reports the error to the sender and does not address the message. If a matching delivery location is found, Cisco Unity addresses the message without verifying that the remote mailbox number exists. Cisco Unity does provide voice name confirmation that the delivery location exists before addressing the message (assuming a voice name was recorded for the delivery location).

After a message is sent from a Cisco Unity subscriber to an Octel subscriber for the first time, the Bridge obtains the name and recorded voice name of the Octel subscriber and adds a usage-based directory entry to its Octel Node directory. The Bridge sends the name, recorded voice name, and extension to Cisco Unity to create a corresponding Bridge subscriber. The Bridge subscriber has a local extension that is the delivery location Dial ID followed by the mailbox number. (If the Name Aging field on the Bridge System Settings page is set to a non-zero value, the auto-created Bridge subscribers are subject to name aging.) Subsequently, when Cisco Unity subscribers address messages to that Octel user by entering the Dial ID and remote mailbox number, they get voice name confirmation because there is a
Bridge subscriber with a matching extension. Additionally, Cisco Unity subscribers can address messages to the Octel user by spelled name. See the “NameNet Emulation” section on page 1-31 for more information.

Subscribers can also blind address voice messages in ViewMail and in the Cisco Unity Inbox to someone on the remote voice messaging system by using the following format: [OMNI: <Location Dial ID>_<Remote Mailbox>]. For example, to send a message to Dial ID 206, mailbox 555, the address is: [OMNI:206_555]. (Note that the brackets must be included in the address.) (In Cisco Unity 3.1 the Cisco Unity Inbox is known as the Visual Messaging Interface, or VMI.)

For administrators of Cisco Unity, blind addressing is the option that requires the least amount of work to set up. However, the first time a message is sent to an Octel user, or when the aging period for the usage-based directory entry or Bridge subscriber has ended (if name aging is enabled), subscribers encounter the limitations of blind addressing:

- Subscribers can address a message only by using number mode, so they must know the delivery location Dial ID and the mailbox number for the recipient.
- Cisco Unity cannot verify that the number entered is correct, so subscribers may inadvertently address a message to the wrong person or to a non-existent mailbox.
- The Dial ID and mailbox number of the recipient cannot be added to a distribution list.

### Bridge Subscribers

Bridge subscribers are a representation in Cisco Unity of subscribers on the Octel system. Bridge subscribers are represented as contacts in Active Directory. Cisco Unity subscribers address messages to Bridge subscribers just like they do to regular subscribers, but the messages are sent via the Bridge to the appropriate mailbox on an Octel system. Bridge subscribers can be included in Cisco Unity public distribution lists, and outside callers can leave them messages (if they are listed in the Cisco Unity phone directory).

Other than receiving messages, Bridge subscribers do not have access to other Cisco Unity features, and some sections of the Cisco Unity Administrator are disabled for Bridge subscribers. Bridge 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. (Note that in version 3.1 and earlier, the Cisco Unity Assistant was known as the ActiveAssistant, or AA.)
- Cannot own private lists.
- Cannot set up or receive message notifications.
- Cannot receive message waiting indications.

### How Bridge Subscribers Are Created

Before Bridge subscribers can be created, you first must create a Bridge delivery location that corresponds to each Octel node with which Cisco Unity communicates.

Bridge subscribers are automatically created when the Bridge creates usage-based directory entries for the Octel users. (See the “NameNet Emulation” section on page 1-31 and the “How Octel Node Directory Entries Are Represented in Cisco Unity” section on page 1-31 for more information.) You can also create Bridge subscribers manually in Cisco Unity or create permanent directory entries on the Bridge server, which results in the automatic creation of Bridge subscribers.
Note that information for creating, updating, and deleting Bridge subscribers is pushed from the Bridge server to Cisco Unity, never the reverse.

If you decide that you want to control the creation of Bridge subscriber accounts, use one of the following approaches:

1. Create Bridge subscribers in Cisco Unity by using the Cisco Unity Administrator or the Cisco Unity Bulk Import wizard.
2. Create permanent directory entries on the Bridge server by using the Bridge Administrator or the Cisco Unity Bridge Mailbox Import Tool.
3. First create the Bridge subscribers in Cisco Unity, and then create corresponding permanent directory entries on the Bridge.

**Creating Bridge Subscribers in Cisco Unity**

If you want the extensions that you assign to Bridge subscribers to fit in with your numbering plan, you may need to manually create Bridge subscribers in Cisco Unity. The extension is the number that Cisco Unity subscribers enter when addressing messages to Bridge subscribers.

When creating Bridge subscribers, you must specify the remote mailbox number of the user on the Octel node. The remote mailbox number may or may not be the same as the extension. You also select a Bridge delivery location with which to associate the subscriber. In organizations with multiple Cisco Unity servers, Bridge subscribers can be associated only with Bridge delivery locations created on the same Cisco Unity server.

Note the following about Bridge subscribers that you manually create:

- A corresponding Octel node usage-based directory entry on the Bridge is created only when a Cisco Unity subscriber first sends a message to the Bridge subscriber. At that time, the Bridge obtains the text and recorded voice name from the Octel node, and sends this information to Cisco Unity. Cisco Unity updates the Bridge subscriber account with the text and recorded voice name from the Bridge. If you have already recorded a voice name for the Bridge subscriber, it is replaced by the voice name sent by the Bridge.

- Manually created Bridge subscribers are subject to name aging deletion. If name aging is enabled, the name aging period starts when a corresponding Octel node directory entry is created on the Bridge.

- A corresponding Active Directory contact is automatically created at the time the Bridge subscriber account is created.

**Creating Permanent Directory Entries on the Bridge Server**

If you want the Bridge subscribers to always have recorded voice names and not be subject to name aging deletion, you should create permanent directory entries on the Bridge server. When you create a permanent Octel node directory entry, the Bridge places an administrative call to the Octel node to obtain the name and recorded voice name. The directory entry is updated with this data. The Bridge sends the data along with a request to Cisco Unity to create a corresponding Bridge subscriber account (also referred to as auto-created Bridge subscribers).

Note the following:

- The \{Bridge Subscriber\} Template is the default template used for auto-created Bridge subscribers. You specify the template to be used for auto-created Bridge subscribers in the Cisco Unity Administrator on the Network > Bridge Options > Subscriber Creation Options page.
- The extension assigned to an auto-created Bridge subscriber is the delivery location dial ID with the remote mailbox number added to the end (for example, if the delivery location dial ID is 111, and the remote mailbox number is 2222, the extension assigned will be 1112222). This is the same number that is used with blind addressing.
- The auto-created Bridge subscriber that corresponds to a permanent directory entry is not subject to name aging deletion.
- When the Bridge subscriber account is created, a corresponding Active Directory contact is also created automatically.

**Creating Bridge Subscribers and then Creating Corresponding Permanent Directory Entries**

If you need the flexibility to specify extensions when Bridge subscribers are created—so that they fit with your numbering plan—and if you want the text and recorded voice names to be automatically obtained from the Octel system, you first create Bridge subscribers in Cisco Unity and then create the permanent directory entries on the Bridge server. When you create a permanent Octel node directory entry, the Bridge places an administrative call to the Octel node to obtain the name and recorded voice name. The directory entry is updated with this data. The Bridge sends the data along with a request to Cisco Unity to create a corresponding Bridge subscriber account. Because you first created Bridge subscribers in Cisco Unity, a Bridge subscriber already exists that matches the Octel node and remote mailbox number of the directory entry, so the existing Bridge subscriber account is updated with the text and voice name.

**Extension Addresses**

When you create a Bridge subscriber, Cisco Unity automatically generates an e-mail address in the following format:

OMNI:<Location Dial ID>_<Remote Mailbox>

This special e-mail address is called an extension address. The extension address is a combination of the delivery location Dial ID with which the Bridge subscriber is associated, and the Remote Mailbox Number of the Bridge subscriber. Each contact in Active Directory that corresponds to a Bridge subscriber contains an extension address.

When using ViewMail or the Cisco Unity Inbox to address a message to a Bridge subscriber, subscribers can select the contact from the Outlook address book (if the recipient is not hidden from the address book) or address the voice message by using the full format: [OMNI:<Location Dial ID>_<Remote Mailbox>]. For example, to send a message to Dial ID 206, mailbox 555, the address is: [OMNI:206_555] (note that the brackets must be included in the address). (In Cisco Unity 3.1 the Cisco Unity Inbox is known as the Visual Messaging Interface, or VMI.)

When subscribers use the phone to address messages to a Bridge subscriber, they dial an extension. Cisco Unity recognizes the recipient as a Bridge subscriber and retrieves the extension address from the SQL database on the Cisco Unity server.

The extension address retrieved by Cisco Unity is identical to the format the subscriber would use in addressing the message from ViewMail or the Cisco Unity Inbox: the location Dial ID and the Remote Mailbox Number.

Although extension addresses are generated automatically when Bridge subscribers are created, if subsequently you change the Dial ID of a delivery location, you will need to run the Extension Address utility to update the extension addresses for the Bridge subscribers. Otherwise, Bridge subscribers will have incorrect extension addresses, and they will not receive messages.
To Run the Extension Address Utility

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>On the Cisco Unity server desktop, double-click the Cisco Unity Tools Depot icon.</td>
</tr>
<tr>
<td>Step 2</td>
<td>In the left pane, under Administrative Tools, double-click Extension Address Utility.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Click Update.</td>
</tr>
<tr>
<td>Step 4</td>
<td>When the utility has finished updating extension addresses, click OK, and then Close.</td>
</tr>
</tbody>
</table>

It may take a few minutes for the extension addresses to be updated in Exchange.

Subscriber Experience with Bridge Subscribers

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

- Subscribers can address messages to Bridge subscribers by using the phone, ViewMail, or the Cisco Unity Inbox. (In Cisco Unity 3.1 the Cisco Unity Inbox is known as the Visual Messaging Interface, or VMI.)

- Unless they have been explicitly hidden, the contacts that correspond to Bridge subscribers are listed in the Exchange address book. Therefore, message addressing to Bridge subscribers—either by using ViewMail or the Cisco Unity Inbox—is the same as for regular subscribers. (By default, auto-created Bridge subscribers are hidden in the address book. See the “Hiding Bridge Subscribers” section on page 1-45.)

- When using the phone, subscribers can address messages to Bridge subscribers in spelled-name mode (if enabled on the system) or by extension.

- Subscribers get voice name confirmation when addressing a message to a Bridge subscriber.

- When a subscriber uses the phone to listen to a message from someone on the Octel system with a corresponding Bridge subscriber account in Cisco Unity, the conversation announces who the message is from.

- Bridge subscribers can be added to Cisco Unity distribution lists.

**Note**

Be sure to explain to subscribers the difference between a message sent via the Bridge (which can be replied to) and a message left by a caller (which cannot be replied to). See the “Leaving a Message Versus Sending a Message” section on page 1-69 for more information.

Unidentified Callers and Bridge Subscribers

Bridge subscribers can be listed in the phone directory and have recorded voice names and greetings just like regular Cisco Unity subscribers. If you have used Cisco Unity to set up an automated attendant, callers who reach the opening greeting can enter an extension of a Bridge subscriber, and callers who reach the phone directory can look up the extension of a Bridge subscriber.

You configure call transfer settings for Bridge subscribers in the Cisco Unity Administrator just as you do for regular Cisco Unity subscribers, and the behavior is the same. However, depending on the call transfer settings, messages left by unidentified callers for Bridge subscribers may be recorded directly by the Octel system, or they may be recorded by Cisco Unity and sent via the Bridge to the Octel system.
If you are allowing calls to Bridge subscribers to be transferred to the phone system, usually you set the call transfer settings to be release to switch so messages left by callers are recorded directly by the Octel system.

Because Octel analog networking requires a mailbox number for the sender, Cisco Unity uses 999999 as the sender’s mailbox number for messages left by unidentified callers to Bridge subscribers that are recorded by Cisco Unity and sent via the Bridge. Although Octel subscribers can reply to these messages, the messages are returned as NDRs.

**About Spoken Name Confirmation for Bridge Subscribers**

When assigning an extension to new Bridge subscribers, you may prefer to assign an extension that fits with your existing numbering plan, or you may prefer that the extension be a number that is a combination of the delivery location dial ID followed by the remote mailbox number. You can do both by entering an extension that fits with your numbering plan, and entering an alternate extension on the Subscribers > Alternate Extensions page in the Cisco Unity Administrator; the alternate extension would consist of the delivery location dial ID and remote mailbox number.

For example, Alex Abade is a Bridge subscriber with extension 1234 on the Cisco Unity system. He has a delivery location dial ID of 111, and his mailbox number on the remote voice mail server is 2222.

Kelly Bader is a Cisco Unity subscriber. If she addresses a message to Alex by using 1234 (his extension), she will hear spoken name confirmation, if the recorded voice name exists.

If Kelly addresses a message to Alex by using 1112222 (his delivery location dial ID plus remote mailbox number), she will not hear spoken name confirmation because Cisco Unity did not find a matching extension (or alternate extension) of 1112222. However, if you take the additional step of adding 1112222 as an alternate extension for Alex, Kelly will hear spoken name confirmation when addressing a message by entering 1234 and also when addressing a message by entering 1112222.

If you do not manually create a Bridge subscriber account for Alex but instead allow Cisco Unity to automatically create a Bridge subscriber account after a message is blindly addressed to him, the Bridge obtains the recorded voice name for Alex from the remote Octel system and passes it along to Cisco Unity. This auto-created Bridge subscriber account for Alex has 1112222 as the extension and uses the recorded voice name from the remote Octel system. Once this account has been created, Cisco Unity subscribers receive spoken name confirmation when addressing a message to Alex. However, if name aging is enabled, and the name aging period specified in the Bridge Administrator (the default is 30 days) has passed without any messages being sent to Alex, his Bridge subscriber account is deleted. If, at a later date, a subscriber sends a message to Alex, the process starts again.

**Deleting Bridge Subscribers**

Whether or not the Active Directory contacts associated with Bridge subscribers are automatically deleted depends on the version of Cisco Unity on which they were created and how they were created. See the following sections for details:

- Deleting Bridge Subscribers (Cisco Unity 3.1(3) – Cisco Unity 4.0(1)), page 1-41
- Deleting Bridge Subscribers (Cisco Unity 4.0(2) and Later), page 1-41
Deleting Bridge Subscribers (Cisco Unity 3.1(3) – Cisco Unity 4.0(1))

When you delete Bridge subscribers in the Cisco Unity Administrator—either by deleting individual accounts or by deleting a delivery location with which the Bridge subscribers are associated—the underlying Active Directory contacts are not removed; you must delete them manually by using Microsoft Active Directory Users and Computers.

Caution

Be sure to delete the associated contacts for Bridge subscribers. When a Bridge subscriber is deleted, the Cisco Unity-specific properties are deleted from the associated contact. However, the extension address (“OMNI:<Delivery Location ID>_<Remote Mailbox Number>”) is not deleted as the e-mail address for the contact. Subsequently, if a Bridge subscriber is added (or readded) with the remote mailbox number of the deleted subscriber, two contacts will exist with the same extension address. Messages addressed to the Bridge subscriber will not be delivered, and will be returned with an NDR.

However, if you delete the corresponding directory entries on the Bridge server by using the Bridge Administrator or the Cisco Unity Bridge Mailbox Import tool, both the Bridge subscribers in Cisco Unity and the Active Directory contacts are deleted automatically. The contacts are also deleted when the Bridge sends a deletion request to Cisco Unity to delete a Bridge subscriber because the name aging period has expired or there was an indication on message delivery to an Octel system that the target recipient no longer exists.

Deleting Bridge Subscribers (Cisco Unity 4.0(2) and Later)

Each Bridge subscriber is associated with an Active Directory contact. When Bridge subscribers are deleted, the associated contacts are automatically deleted.

When you delete Bridge subscribers in the Cisco Unity Administrator—either by deleting the subscriber accounts individually, or by deleting the associated Bridge delivery location—the underlying contacts are automatically deleted. This is true for both auto-created Bridge subscribers and Bridge subscribers that have been explicitly created.

Additionally, if you delete the corresponding directory entries on the Bridge server by using the Bridge Administrator or the Cisco Unity Bridge Mailbox Import tool, both the Bridge subscribers in Cisco Unity and the Active Directory contacts are deleted automatically. The contacts are also deleted when the Bridge sends a deletion request to Cisco Unity to delete a Bridge subscriber because the name aging period has expired or there was an indication on message delivery to an Octel system that the target recipient no longer exists.

Disabling the Automatic Creation, Modification, and Deletion of Bridge Subscribers (Cisco Unity 4.0(2) and Later)

The automatic synchronization of directory information between the Bridge and Cisco Unity is performed by the CsBridgeConnector service on the Cisco Unity bridgehead server. The CsBridgeConnector service:

- Monitors the Cisco Unity subscriber database for changes and sends updates to the Bridge so that the Bridge can update its directory of Cisco Unity subscribers. By doing so, the Bridge can respond to remote Octel node requests for Cisco Unity subscriber voice and text names.
- Handles change requests sent from the Bridge after it retrieves voice and text names of remote Octel node subscribers. The CsBridgeConnector service adds, deletes, and modifies Bridge subscribers and their associated Active Directory contacts. This allows Cisco Unity subscribers to address
remote Octel node subscribers by spelled name, and provides spoken name confirmation of the addressee when selected. It also allows these remote Octel subscribers to be added to private and public Cisco Unity distribution lists.

The CsBridgeConnector service should never be disabled on a Cisco Unity bridgehead server. Doing so could result in a backlog of directory messages from the Bridge consuming large amounts of Exchange storage, and would prevent Cisco Unity subscriber voice and text names from being available to the remote Octel nodes upon request.

However, there may be situations where you want to disable some or all of the CsBridgeConnector's ability to automatically add, delete, and modify Bridge subscribers and Active Directory contacts. Reasons for this are:

- The Cisco Unity bridgehead servers may be configured to serve a large number of Octel nodes, or Octel nodes with a large number of subscribers. The auto-creation of thousands of Bridge subscribers on a single bridgehead server consumes a large amount of resources and can slow processing on the server.

- You may wish to have control over the text and voice names for Bridge subscribers. Disabling CsBridgeConnector auto-synchronization of these properties ensures that the changes you make to Bridge subscribers will not be overwritten by directory information propagated from remote Octel nodes via the Bridge.

- You may not want to create Bridge subscribers at all, and instead, Cisco Unity subscribers will use blind addressing when addressing messages to subscribers on the Octel system. Without the creation of Bridge subscribers, Cisco Unity does not have access to the names, extensions, and recorded voice names of the Octel subscribers. Thus, Cisco Unity subscribers will encounter the following limitations when blind addressing a message to an Octel subscriber:
  - When addressing a message, the sender does not get voice name confirmation. Cisco Unity cannot verify that the entered number is correct, so subscribers may inadvertently address a message to the wrong person or to a non-existent extension. However, subscribers will receive a non-delivery receipt (NDR) if the number turns out to be an invalid extension.
  - When addressing a message, the sender cannot use spelled-name mode; the delivery location Dial ID and remote mailbox number of the recipient must be entered.
  - When a Cisco Unity subscriber listens to a message from a subscriber on the Octel system, the sender cannot be identified.
  - Blind addresses cannot be added to distribution lists.

Caution: Disabling any CsBridgeConnector auto-synchronization functionality requires manual maintenance of any Bridge subscribers and their associated Active Directory contacts. Failure to keep Bridge subscriber information current can result in Cisco Unity subscribers sending voice messages to unintended recipients, or not finding remote Octel subscribers in the directory as expected.

To Adjust CsBridgeConnector Synchronization Settings

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, modify the following as needed according to Table 1-1:

- Bridge: Create AD object
- Bridge: Delete AD object
• Bridge: Modify Display name in AD
• Bridge: Modify Voice name in AD

**Step 4** Close the Advanced Settings Tool.

**Step 5** Stop and then Start the CsBridgeConnector service on the Cisco Unity bridgehead server.

<table>
<thead>
<tr>
<th>Registry Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CreateADObject</td>
<td>Allowed values: 1 (enabled), 0 (disabled)</td>
</tr>
<tr>
<td></td>
<td>The default setting is 1.</td>
</tr>
<tr>
<td></td>
<td>Enabled—Allows the CsBridgeConnector service to automatically create a Bridge subscriber and associated Active Directory contact when a new remote Octel subscriber record (Add-New-Subscriber) is received from the Bridge.</td>
</tr>
<tr>
<td></td>
<td>Disabled—Add-New-Subscriber records received from the Bridge that do not match existing Bridge subscribers are discarded without processing.</td>
</tr>
<tr>
<td></td>
<td>CreateADObject supersedes ModifyDisplayNameInAD and ModifyVoicenameInAD. If CreateADObject is enabled, and a new record is received that does not match a remote address of an existing Bridge Subscriber, then the Bridge Subscriber will be created based on the text name and voice name (if applicable) received in the vcard, regardless of the ModifyDisplayNameInAD and ModifyVoicenameInAD settings.</td>
</tr>
<tr>
<td>DeleteADObject</td>
<td>Allowed values: 1 (enabled), 0 (disabled)</td>
</tr>
<tr>
<td></td>
<td>The default setting is 1.</td>
</tr>
<tr>
<td></td>
<td>Enabled—Allows the CsBridgeConnector service to automatically delete a Bridge subscriber and associated Active Directory contact when a Delete-Subscriber request is received from the Bridge.</td>
</tr>
<tr>
<td></td>
<td>Disabled—Delete-Subscriber records received from the Bridge are discarded without processing.</td>
</tr>
</tbody>
</table>
Chapter 1 Bridge Networking

Table 1-1 CsBridgeConnector Synchronization Registry Settings

<table>
<thead>
<tr>
<th>Registry Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ModifyDisplaynameInAD</td>
<td>Allowed values: 1 (enabled), 0 (disabled)</td>
</tr>
<tr>
<td></td>
<td>The default setting is 1.</td>
</tr>
<tr>
<td></td>
<td>Enabled—Allows the CsBridgeConnector service to automatically modify the first, last and display name for a Bridge subscriber and associated Active Directory contact when a Change-Text-Name request is received from the Bridge.</td>
</tr>
<tr>
<td></td>
<td>Also allows the CsBridgeConnector service to automatically modify the first, last and display name for a Bridge subscriber and associated Active Directory contact when an Add-New-Subscriber request is received from the Bridge that matches an existing Bridge subscriber.</td>
</tr>
<tr>
<td></td>
<td>Disabled—When a Change-Text-Name request is received from the Bridge, or when an Add-New-Subscriber request is received from the Bridge that matches an existing Bridge subscriber, the record is discarded without processing.</td>
</tr>
<tr>
<td>ModifyVoicenameInAD</td>
<td>Allowed values: 1 (enabled), 0 (disabled)</td>
</tr>
<tr>
<td></td>
<td>The default setting is 1.</td>
</tr>
<tr>
<td></td>
<td>Enabled—Allows the CsBridgeConnector service to automatically modify the recorded voice name for a Bridge subscriber and associated Active Directory contact when a Change-Spoken-Name request is received from the Bridge.</td>
</tr>
<tr>
<td></td>
<td>Also allows the CsBridgeConnector service to automatically modify the recorded voice name for a Bridge subscriber and associated Active Directory contact when an Add-New-Subscriber request is received from the Bridge that matches an existing Bridge subscriber.</td>
</tr>
<tr>
<td></td>
<td>Disabled—When a Change-Spoken-Name request is received from the Bridge, or when an Add-New-Subscriber request is received from the Bridge that matches an existing Bridge subscriber, the record is discarded without processing.</td>
</tr>
</tbody>
</table>

Considerations for Networked Cisco Unity Servers

There is a one-to-one correspondence of Cisco Unity servers and Bridge servers. In organizations with one Bridge server and multiple Cisco Unity servers networked together, only one Cisco Unity server can be set up to communicate with the Bridge server. If allowed by the primary location addressing options, all subscribers, no matter which Cisco Unity server they are associated with, can send messages to Octel subscribers. The Cisco Unity server configured for the Bridge acts as the “bridgehead” server for the other Cisco Unity servers in the network.

You can add additional Bridge/Cisco Unity server pairs as needed to handle message traffic.

If you plan to make changes to your numbering plan as you move subscribers from Octel to Cisco Unity, keep in mind that in Octel, mailboxes have a fixed length per prefix. To avoid reprogramming the Octel servers, the extensions in the new numbering plan should have the same length as the mailboxes on the Octel nodes that are being replaced.
Hiding Bridge Subscribers

Depending on your installation, the users of the remote voice messaging system may already have Windows accounts and Exchange mailboxes on your local network. Therefore, when Bridge subscriber accounts are created for these people, the Exchange address list will contain duplicate listings—the existing user account and a contact. Both listings are viewable in Outlook.

To prevent the contacts associated with Bridge subscribers from being listed in the Exchange address list, you will need to hide them. Even when they are hidden in the Exchange address list, Cisco Unity is able to deliver messages to them. By default, auto-created Bridge subscribers are hidden.

Because e-mails should not be sent to Bridge subscribers, you may want to exclude Bridge subscribers from distribution lists in addition to hiding them in the Exchange address list, as distribution lists are also viewable in Outlook. Note however that if you hide the contact created for a Bridge subscriber, subscribers who use ViewMail for Outlook or the Cisco Unity Inbox must manually enter the address for the Bridge subscriber in the following format (including the brackets):

\[\text{[OMNI:<Location Dial ID>_}<Remote Mailbox>]\]

To Hide the Contacts for Auto-Created Bridge Subscribers Before They Are Created

Step 1 In the Cisco Unity Administrator, go to the Network > Bridge Options > Subscriber Creation Options page.

Step 2 Uncheck Show Created Subscribers in Your E-Mail Server Address Book. (By default, this check box is unchecked.)

To Hide the Contacts for Bridge Subscribers

To hide the contacts for Bridge subscribers that you create manually, or to hide contacts that are already listed in the Exchange address list, you use Microsoft Active Directory Users and Computers.

Step 1 From the Windows Start menu, click Programs > Administrative Tools > Active Directory Users and Computers.

Step 2 Click View > Advanced Features. This allows you to see the Exchange Advanced property page.

Step 3 In the left-hand pane, expand the tree so that the contacts are listed in the right-hand pane.

Step 4 Right-click a contact that you want to hide, and select Properties.

Step 5 Click the Exchange Advanced tab, and check Hide From Exchange Address Lists.

Step 6 Click OK.

Step 7 Repeat Step 4 through Step 6 for each contact that you want to hide.

Step 8 Close Active Directory Users and Computers.
Migrating Octel Subscribers to Cisco Unity

If the Octel subscribers have existing Exchange mailboxes, you may want to use the Migrate Subscriber Data utility when the time comes to migrate Octel subscribers to Cisco Unity. The Migrate Subscriber Data utility creates a Cisco Unity subscriber account by combining the Cisco Unity-specific data from an existing Bridge subscriber account (such as the voice name) with an existing mail user. The utility deletes the Bridge subscriber account. In Cisco Unity 4.0(2), the associated Active Directory contact is automatically deleted. Prior to Cisco Unity 3.1(3) – 4.0(1), the utility offered the option to delete the Active Directory contact.

The Migrate Subscriber Data utility is available in Tools Depot on the Cisco Unity server. Refer to the Help file that comes with the utility for more information.

Supported Codecs

On the Unity Node Configuration page in the Bridge Administrator, you can select which codec will be used to encode voice messages when they are sent from the Bridge to Cisco Unity subscribers: either the G.711 or the G.729a codec. The default codec is G.711.

Voice messages sent from Cisco Unity to the Bridge can be recorded in the G.711 or the G.729a wave format. Therefore, you can configure each Cisco Unity server as needed to record voice messages by using the default G.711 codec or the G.729a codec. Although Cisco Unity supports other codecs, the Bridge supports only G.711 or G.729a.

Bridge Reference: Settings on the Cisco Unity Server

When setting up Cisco Unity and the Bridge for networking, you enter information in both the Cisco Unity Administrator and in the Bridge Administrator. This section provides details about the Bridge Networking settings in the Cisco Unity Administrator. See the following sections for more information:

- Bridge Delivery Locations Profile Settings, page 1-46
- Bridge Subscriber Creation Options Settings, page 1-48
- Bridge Synchronization Options Settings, page 1-49

Also see Chapter 3, “Primary Location Settings.”

Bridge Delivery Locations Profile Settings

Delivery locations are Cisco Unity objects that contain the addressing information that Cisco Unity needs to send messages to and receive messages from other voice messaging systems—which may or may not be Cisco Unity systems. You create a delivery location that corresponds to each remote messaging system with which the local Cisco Unity server communicates.

When creating a delivery location, you specify Bridge as the Destination Type. The Destination Type determines which fields are displayed on the delivery locations page.

If you change the Dial ID on a delivery location after creating subscriber accounts, extension addresses are not automatically updated. Run the Extension Address utility to generate new extension addresses. See the procedure, To Run the Extension Address Utility, page 1-39.

Use the following table to learn more about the profile settings for delivery locations.
Chapter 1  Bridge Networking

Table 1-2  Settings Applicable to All Types of Delivery Locations

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>This displays the name of the delivery location. To change the name, enter a new name here, and click the Save icon.</td>
</tr>
</tbody>
</table>
| Dial ID    | Enter the ID that identifies the location to Cisco Unity. Enter numbers only, up to a maximum of ten digits. The default minimum length is three digits. 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 only offers 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. When addressing a message to another location by using blind addressing, subscribers dial a number that is made up of the Dial ID and the extension (or the remote mailbox number) of the recipient. The following policies are recommended:  
  • Establish a fixed length for Dial IDs and if possible, a fixed length for extensions.  
  • Assign unique Dial IDs. Dial IDs should not be the same as other Dial IDs or extensions.  
  • Assign three-digit Dial IDs.  
  • Use a different numbering range for Dial IDs than for extensions.  
  • If you use variable-length Dial IDs, the first digits of each ID should be unique with respect to other Dial IDs.  
If you change the Dial ID after creating subscriber accounts associated with this location, run the Extension Address utility to generate new extension addresses. To run the utility, on the Windows Start menu, click Programs > Cisco Unity > Extension Address Utility, and click Update. It may take three to five minutes for the addresses to be updated in Exchange. |
| Recorded Name | Record a name for the delivery location. The subscriber conversation plays this recorded name when the setting Include Locations in Searches on the Network > Primary Location > Addressing Options page is enabled. When subscribers address a message, the recorded name for this delivery location is 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.”) Additionally, the subscriber conversation plays this recorded name when subscribers address messages by using blind addressing to this delivery location. 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. |
Table 1-2  Settings Applicable to All Types of Delivery Locations

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destination Type</td>
<td>Display only. Indicates the type of delivery location. The Destination Type is specified when the delivery location is created, and it cannot be changed. The Bridge Destination Type indicates that the delivery location corresponds to an Octel node in an Octel analog network. Messages are exchanged between Cisco Unity and the Octel system by using the Cisco Unity Bridge. Cisco Unity sends messages to the Bridge in Voice Profile for Internet Mail (VPIM) format with proprietary extensions. The Bridge converts the message format and sends it to the appropriate Octel server by using the Octel Analog Networking protocol.</td>
</tr>
</tbody>
</table>

Table 1-3  Bridge Delivery Location Profile Settings

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridge Server Address</td>
<td>Display only. This is the address of the Bridge server. You set the Bridge server address on the Primary Location page.</td>
</tr>
<tr>
<td>Octel Node ID</td>
<td>Enter the number of the Octel node that corresponds to this delivery location. This number must match the Serial Number of one of the nodes displayed on the Octel Nodes page in the Bridge Administrator. In turn, the Serial Number of an Octel node in the Bridge Administrator must match the number of an Octel node. You create a Bridge delivery location for each Octel node that is listed on the Octel Nodes page on the Bridge.</td>
</tr>
</tbody>
</table>

Bridge Subscriber Creation Options Settings

Bridge subscriber creation options are applied to the Bridge subscribers automatically created by Cisco Unity when it receives an Add User request from the Bridge. These settings allow you to select the subscriber template and to choose whether these auto-created Bridge subscribers are shown in the global address book.

Use the following table to learn more about Bridge subscriber creation options settings.

Table 1-4  Network > Bridge Options > Bridge Subscriber Creation Options Page

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscriber Template</td>
<td>Select the template on which to base new Bridge subscriber accounts. The template affects most subscriber settings. By default, the predefined {Bridge Subscriber} Template will be used for auto-created Bridge subscribers, but you may select another template. By default, Bridge subscribers created by using the {Bridge Subscriber} Template are not added to the All Subscribers distribution list and are not listed in the Cisco Unity phone directory.</td>
</tr>
</tbody>
</table>
Table 1-4  Network > Bridge Options > Bridge Subscriber Creation Options Page (continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show Created Subscribers in Your E-Mail Server Address Book</td>
<td>Specify whether the auto-created Bridge subscribers should be listed in the Exchange address list. Depending on your installation, the users of the remote voice messaging system may already have Windows accounts and Exchange mailboxes on your local network. Therefore, when Bridge subscriber accounts are created for these people, the Exchange address list will contain duplicate listings—the existing user account and a contact for Exchange 2000 users. Both listings are viewable in Outlook, unless you hide the Bridge subscribers. The default setting is to not show the Bridge subscribers. To show the Bridge subscribers in the Exchange address list, check the check box.</td>
</tr>
</tbody>
</table>

### Bridge Synchronization Options Settings

The Bridge synchronization options allow you to control the scope when synchronizing the subscriber directory on the Bridge with the subscriber directory on Cisco Unity. Additionally, this page provides an option for forcing a full synchronization.

Use the following table to learn more about Bridge synchronization options settings.

Table 1-5  Network > Bridge Options > Bridge Synchronization Options Page

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synchronize Subscribers From The</td>
<td>Specify the scope for the synchronization of the subscriber directory on the Bridge with subscribers on Cisco Unity. Choose one of the following:</td>
</tr>
<tr>
<td></td>
<td>• Local Server—Subscriber information for subscribers on this Cisco Unity server is sent to the Bridge. Information about subscribers on other Cisco Unity servers is not synchronized. Choose this option when each Cisco Unity server is connected to a separate Bridge server.</td>
</tr>
<tr>
<td></td>
<td>• Dialing Domain—Subscriber information is sent to the Bridge for subscribers in the dialing domain of which this Cisco Unity server is a member. Information about subscribers outside of the dialing domain is not synchronized. Choose this option when this server acts as the bridgehead server for the other Cisco Unity servers in the dialing domain.</td>
</tr>
<tr>
<td></td>
<td>• Global Directory—Subscriber information for all subscribers in the global directory is sent to the Bridge. Choose this option when this server acts as the bridgehead server for the other networked Cisco Unity servers.</td>
</tr>
<tr>
<td></td>
<td>When a subscriber account in the selected scope is added, deleted, or modified, Cisco Unity sends the account information to the Bridge. The Bridge makes this information available to other Octel nodes when they make an administrative call to retrieve the voice and text names of Cisco Unity subscribers.</td>
</tr>
</tbody>
</table>
When setting up Cisco Unity and the Bridge for networking, you enter information in both the Cisco Unity Administrator and the Bridge Administrator. This section provides details about the settings in the Bridge Administrator. See the following sections for more information:

- System Settings, page 1-51
- Digital Networking, page 1-55
- Unity Nodes, page 1-57
- Unity Node Configuration, page 1-57
- Octel Nodes, page 1-58
- Octel Node Configuration, page 1-58
- Directory List, page 1-60
- Directory Entry, page 1-62
- Line Status, page 1-62

### Synchronize

Click this button to force a full synchronization of subscriber data on Cisco Unity with the subscriber directory on the Bridge, according to the synchronization scope.

When Cisco Unity and the Bridge are set up for networking, the initial full synchronization happens automatically. However, in some cases you may need to initiate the first synchronization by clicking the Synchronize button.

During normal operation, Cisco Unity automatically synchronizes subscriber information with the Bridge on a regular basis. However, you may want to force synchronization if the Cisco Unity server, the Bridge, or the network connection to the Bridge has been down for a long period of time, and if there have been numerous changes to subscriber information in Cisco Unity.

Directory synchronization does not impact messaging. Subscribers can still send and receive messages when the directories are not synchronized.

The time necessary for a full synchronization depends on many factors, such as the network connection to the Bridge, the size of the directory, whether subscribers have recorded voice names, and the codec used to record the voice names. (Voice name data is large in comparison with the other subscriber information that is sent to the Bridge.)

To get an idea of how long full synchronization from Cisco Unity to the Bridge may take, here are a few examples obtained during testing:

- 1000 subscribers with 5-second voice names recorded with the G.711 codec—approximately 5 hours
- 1000 subscribers with no recorded voice names—approximately 3 minutes
- 1000 subscribers with 2.5-second voice names recorded with the G.711 codec—approximately 2.5 hours
- 1000 subscribers with 2.5-second voice names recorded with the G.729a codec—approximately 1 hour

**Bridge Reference: Settings on the Bridge Server**

When setting up Cisco Unity and the Bridge for networking, you enter information in both the Cisco Unity Administrator and the Bridge Administrator. This section provides details about the settings in the Bridge Administrator. See the following sections for more information:
Accessing the Cisco Unity Bridge for Administration

You can access the Bridge locally or remotely in Internet Explorer.

- To access the Bridge from a local server, in Internet Explorer, enter http://Localhost, or use the shortcut on the desktop or on the Programs menu.
- To access the Bridge from a remote server, in Internet Explorer, enter http://machinename, where machinename is the name of the Cisco Unity Bridge server.

System Settings

The System Settings page in the Bridge Administrator allows you to configure how the Cisco Unity Bridge server handles retries when a call to deliver a message fails. There are separate settings for busy, no answer, and failed call conditions.

- To return to the stored system settings before you have saved them, click Reload.
- To save your system settings, click Save.

Use the following table to learn more about the System Settings page.

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| Attempts if Busy | Enter a number from 1 to 15 for the number of times that the server will call a busy line before it returns all the messages currently in the outbound queue as non-deliverable. The default value is 15.  
The counter for Attempts if Busy is on a per-node basis. The counter is reset to 0 when the Bridge connects to the node. |
| Attempts on No Answer | Enter a number from 1 to 15 for the number of times that the server will call a line that does not answer before it returns all the messages currently in the outbound queue as non-deliverable. The default value is 15.  
The counter for Attempts on No Answer is on a per-node basis. The counter is reset to 0 when the Bridge connects to the node. |
| Attempts on Bad Connection | Enter a number from 1 to 100 for the number of times that the server will call a line with a bad connection before it returns all the messages currently in the outbound queue as non-deliverable. The default value is 100.  
A bad connection is usually caused by an interruption on the line or poor line quality. However, a bad connection can also occur as a result of problems delivering one particular message. Messages to a particular Octel node are delivered in First In First Out (FIFO) order. When the number specified for Attempts On Bad Connection has been reached, all messages queued for delivery to that node are returned to the senders. Therefore, if you set a value between 3 and 5, this reduces the number of messages building up in the outgoing queue that would be returned when the message delivery problem to a node is caused by a single message. However, on busier systems where multiple calls may be delivering messages to the same node simultaneously, increasing the setting to a value between 6 and 10 is recommended.  
The counter for Attempts on Bad Connection is on a per-node basis. The counter is reset to 0 when the Bridge connects to the node. |
Table 1-6  System Settings in the Bridge Administrator (continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval if Busy</td>
<td>Enter a number from 1 to 60 for the interval in minutes that the server waits between attempts to call a busy line. The default value is 1 minute. The interval is timed on a per-node basis and is reset when the Bridge connects to the node.</td>
</tr>
<tr>
<td>Interval if No Answer</td>
<td>Enter a number from 1 to 60 for the interval in minutes that the server waits between attempts to call a line that does not answer. The default value is 1 minute. The interval is timed on a per-node basis and is reset when the Bridge connects to the node.</td>
</tr>
<tr>
<td>Name Aging</td>
<td>Enter a number from 1 to 90 for the number of days that the server will retain a usage-based directory entry that has not been referenced before deleting the entry. Enter 0 to disable name aging. The default value is 30 days. Higher values for Name Aging keep subscribers in the Bridge directory longer and decrease the rate of automatic deletion and recreation of Bridge subscribers and Active Directory contacts. When you enter 0 to disable name aging, it does not matter how long it has been since a directory entry has received a message from a Cisco Unity subscriber. With name aging disabled, the directory entry and its associated Bridge subscriber and Active Directory contact will not be deleted automatically.</td>
</tr>
<tr>
<td>Name Retrieval Retries</td>
<td>Enter a number from 0 to 90 for the maximum number of retries that are made to retrieve the text or spoken name if it is not available initially. The default value is 0, which means no retry attempts will be made.</td>
</tr>
</tbody>
</table>

Bridge 2.1(4) and Later
The Name Retry Interval setting is used to specify the number of days between attempts to retrieve a text or spoken name. The default value is 1 day. Each directory entry contains a name retrieval retry counter. If the counter has not reached the maximum retry count specified in the Name Retrieval Retries setting, an administrative call is scheduled for the node associated with the name. (The Bridge makes administrative calls according to the schedule for the node.) If the spoken name is not found, the retry counter for the directory entry is incremented.

The Name Retrieval Retries and Name Retry Interval settings are only relevant to scheduled retry attempts for name retrieval. In addition to scheduled attempts, each time an outgoing message to a remote Octel subscriber that does not have a recorded name in the Bridge database is processed, voice name retrieval for that Octel subscriber is retried by the Bridge at the next opportunity according to the Administrative schedule for that node. This occurs even when Name Retrieval Retries is set to 0.

To reset the retry attempts for a particular Octel Node directory entry, run the MBUpload utility using the “C” (Change) option in each record. See the section “Using the Cisco Unity Bridge Mailbox Import Tool to Create Permanent Directory Entries” section on page 1-26 for information on using the MBUpload utility.

Table 1-6  System Settings in the Bridge Administrator (continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name Retry Interval</td>
<td>Enter a number from 1 to 30 for the number of days between attempts to retrieve a text or spoken name. The default value is 1 day. Note that the Name Retry Interval expiration is the same for all directory entries, so that all retries are made on the same day.</td>
</tr>
</tbody>
</table>

The Name Retrieval Retries and Name Retry Interval settings allow you to control how often the Bridge attempts to retrieve spoken names that were not yet recorded on the Octel system when the Bridge initially attempted to retrieve them.

When a name is marked for retrieval (either through the usage based rules or when the name is added as a permanent directory entry), the Bridge attempts to retrieve the text and spoken name. If the Bridge fails to retrieve the spoken name, then each night at midnight, the Bridge determines whether the Name Retry Interval has expired. If so, the Bridge finds all directory entries that do not have spoken names.

Each directory entry contains a name retrieval retry counter. For each directory entry that does not have a spoken name, the Bridge determines whether the retry counter has reached the maximum retry count specified in the Name Retrieval Retries setting. If so, the name is not scheduled for retry. If the counter has not reached the maximum retry count, an administrative call is scheduled for the node associated with the name. (The Bridge makes administrative calls according to the schedule for the node.) If the spoken name is not found, the retry counter for the directory entry is incremented.

Name Retrieval Retries and Name Retry Interval settings are only relevant to scheduled retry attempts for name retrieval. In addition to scheduled attempts, each time an outgoing message to a remote Octel subscriber that does not have a recorded name in the Bridge database is processed, voice name retrieval for that Octel subscriber is retried by the Bridge at the next opportunity according to the Administrative schedule for that node. This occurs even when Name Retrieval Retries is set to 0.

To reset the retry attempts for a particular Octel Node directory entry, run the MBUpload utility using the “C” (Change) option in each record. See the section “Using the Cisco Unity Bridge Mailbox Import Tool to Create Permanent Directory Entries” section on page 1-26 for information on using the MBUpload utility.
Table 1-6  System Settings in the Bridge Administrator (continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queued Call Threshold</td>
<td>Enter a number from 1 to 1000 for the threshold number of messages that must be in the outgoing message queue of a specific node for an additional port to be used for message delivery. As the number of messages in the queue increases, an additional port is added when the number of messages in the queue reaches a multiple of this parameter. The default value is 10. For example, if the value of this parameter is 10, one port will be used for message delivery if there are fewer than 10 messages in the queue. For 10–19 messages, two ports will be used. For 20–29 messages, three ports will be used, and so on. The total number of ports used is limited by the Max Ports Per Node parameter. This parameter is also used to determine when to disconnect a port used for outgoing messages to a specific node. As the number of messages in the queue decreases, a port is disconnected when the number of messages in the queue is below the next lower multiple of this parameter. When only two ports are in use, as the number of messages in the queue drops below half of this parameter, the second port is disconnected. For example, if the value of this parameter is 10, three ports will be used for message delivery if there are 20–29 messages in the queue. As the number of messages in the queue decreases, the third port is not disconnected until the number of messages in the queue drops to 10 or fewer. When the number of messages drops to 5 or fewer messages, the second port is disconnected so that only one port is used to transmit the remaining messages. Note that normal, urgent, and administrative messages to a specific node are in separate outgoing message queues. The Queued Call Threshold parameter is applied to each queue.</td>
</tr>
<tr>
<td>Max Ports Per Node</td>
<td>Enter a number from 1 to 24 for the maximum number of ports that are allowed to be used simultaneously to deliver messages to a particular node. The default value is 4. Note that normal, urgent, and administrative messages to a specific node are in separate outgoing message queues. The Max Ports Per Node parameter is applied to each queue.</td>
</tr>
<tr>
<td>Call Log Retention</td>
<td>Enter a number from 1 to 366 for the number of days that call and queue logs are to be retained. The default is 7 days. Call and queue log data is placed in a common log file. Files are stored on the Bridge server in the Drive\Path\Starfish\Log directory, where Drive and Path denote the drive and the topmost directory where the Bridge software is installed. A separate file is used for each day. Files are named CallLog_YYYYMMDD.LOG where YYYY is the year, MM is the month and DD is the day. Call logs are used by the Bridge Traffic Analyzer for generating reports on Bridge activity. If you open the log files in a text editor, do not modify them. (If the files are modified, the Bridge Traffic Analyzer may not be able to interpret the data in the log files.)</td>
</tr>
</tbody>
</table>
Digital Networking

Digital Networking is the interface used to exchange messages with a Cisco Unity server. The Digital Networking Settings page in the Bridge Administrator provides settings that allow you to record error and status messages in a log file and to view outbound messages retained in SMTP format.

- To return to the stored networking settings before you have saved them, click Reload.
- To save your networking settings, click Save.

Use the following table to learn more about the Digital Networking page.

<p>| Table 1-7  Digital Networking Settings in the Bridge Administrator |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| ESMTP Server | Optionally, enter the address of the ESMTP relay server with which the Cisco Unity Bridge server communicates:  
- If the Bridge server communicates with an ESMTP e-mail host that acts as a relay server, enter the address of the e-mail host.  
- If you do not enter an address here, the address entered on the Unity Nodes page in the Unity SMTP Mail Suffix field is used when the Bridge server attempts to establish a connection to the SMTP server of the Unity node. |
| Cisco Unity Bridge Domain Name | Enter the fully qualified domain name of the Bridge server. This is the name displayed in the Windows System Control Panel on the Network Identification tab in the Full Computer Name field. The name that you enter here must match the name that is displayed in the Cisco Unity Administrator on the Primary Locations page in the Unity Bridge Server Address field. |
Chapter 1  Bridge Networking

Table 1-7  Digital Networking Settings in the Bridge Administrator (continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracing Level</td>
<td>The Bridge Digital Networking service creates a trace log file that records actions that it attempts, notes whether those actions are completed successfully, and logs the reasons why failed actions were not successful. It stores the log information in the directory Drive:\Path\VPIM\Trace, where Drive and Path denote the drive and the topmost directory where the Bridge software is installed. Within the Trace directory are the files VPIM.mmmddttttLOG. Each of these files contains log entries for one hour of the day; the title indicates which hour. The &lt;path&gt;\VPIM\MsgLog folder contains the log file VpimMsg.log, to which the Bridge server adds current entries and then saves them to the appropriate hour log. Log files that are older than 24 hours are overwritten. Choose the level of detail you want to see in the trace log by selecting one of the following options from the Tracing Level box. The default setting is None.</td>
</tr>
<tr>
<td></td>
<td>• None—No logging is done.</td>
</tr>
<tr>
<td></td>
<td>• Entry—1 only. Logs service status information.</td>
</tr>
<tr>
<td></td>
<td>• Error—1 through 3. Logs service error information.</td>
</tr>
<tr>
<td></td>
<td>• Verbose—1 through 5. Logs internal function status information.</td>
</tr>
<tr>
<td></td>
<td>• Debug—1 through 8. Logs internal debugging information.</td>
</tr>
<tr>
<td></td>
<td>• Flow—1 through 10. Logs internal function flow information.</td>
</tr>
<tr>
<td></td>
<td>• Intense—1 through 100 (all messages). Logs internal intense debugging information.</td>
</tr>
<tr>
<td></td>
<td><strong>Caution</strong> Set the tracing level to Verbose or lower under most circumstances. Tracing levels higher than Verbose can consume a large amount of hard disk space and slow down the server, and should be selected only if advised by your technical support representative.</td>
</tr>
<tr>
<td>Retention Days for Temporary SMTP Messages</td>
<td>Enter the number of days that temporary SMTP messages should be kept before being discarded. The default value is 0 (zero). The Bridge server can be set to save inbound messages from Cisco Unity and outbound messages to Cisco Unity in SMTP e-mail format.</td>
</tr>
<tr>
<td></td>
<td>• Inbound messages from Cisco Unity are stored in the \vpim\xcode\inbound\tmp directory on the Bridge server.</td>
</tr>
<tr>
<td></td>
<td>• Outbound messages to Cisco Unity are stored in the \vpim\internet\out\tmp directory on the Bridge server.</td>
</tr>
<tr>
<td></td>
<td>The messages are saved for the specified number of days after they are received (in the case of inbound) or sent (in the case of outbound). This setting is useful for troubleshooting message delivery problems. For example, if messages for Cisco Unity subscribers are not being delivered to Octel subscribers, you need to first isolate where the problem is occurring: Cisco Unity, Exchange, the Bridge, or the Octel node. By setting this parameter to a non-zero value, you can verify whether messages make it to the Bridge. Then you can examine the header fields on each message to look for misspelled addresses. You can also determine whether the outbound messages are larger than an e-mail host in your system can accept.</td>
</tr>
</tbody>
</table>
Unity Nodes

The Unity Nodes page in the Bridge Administrator displays information about the Unity node that has been defined. You create and configure a Unity node to correspond to the Cisco Unity server with which the Bridge communicates. You must set up the Cisco Unity server for networking with the Bridge before entering information on this page.

Although the Unity Nodes page allows you to create multiple Unity nodes, currently only one Unity node is supported. The Bridge server communicates with only one Cisco Unity server.

The following buttons are on the Unity Nodes page:
- Add Button—Click Add to create a new node.
- Edit Button—Select the node from the Node list, and click Edit to modify an existing node.
- Delete Button—Select the node from the Node list, and click Delete to delete an existing node from the list. Note that deleting the node here only deletes the node information from the Bridge.

Unity Node Configuration

After clicking Add or Edit from the Unity Nodes page, the Unity Node Configuration page in the Bridge Administrator is displayed. On this page, you enter information about the Unity node. You can also view the directory entries associated with this node.

Use the following table to learn more about the Unity Node Configuration page.

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMTP Port</td>
<td>The TCP/IP port number used by the Digital Networking Service for sending and receiving SMTP messages. The default value is 25, which is the standard SMTP port number. The use of the standard port number is recommended unless special circumstances require the use of a different port number. The SMTP servers with which the Bridge is communicating must use the same SMTP port number.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Number</td>
<td>Enter the serial number of the node. Assign a unique serial number for the Unity node. Serial numbers of all nodes must be unique to identify each messaging server in the network. The Serial Number must match the number that is displayed in the Cisco Unity Administrator on the Primary Locations page in the Unity Bridge Node ID field. If the Bridge server and the associated Cisco Unity server replace an existing Octel Node, enter the Serial Number of the Octel Node that is being replaced. The Serial Number also needs to be entered on each Octel node if it is not already there. Note that after the configuration settings are saved, you cannot change the serial number when editing the node. To change the Serial Number, you have to delete the node, and add it again with the correct Serial Number.</td>
</tr>
<tr>
<td>Name</td>
<td>Enter a descriptive name for the node. You can enter up to 20 characters.</td>
</tr>
</tbody>
</table>
The Octel Nodes page in the Bridge Administrator displays a list of Octel nodes that are currently defined. You should create and configure an Octel node to correspond to each Octel server in your network that you want Cisco Unity to communicate with. Additionally, in the Cisco Unity Administrator, you need to create a delivery location that corresponds to the Octel node that you create here.

The following buttons are on the Octel Nodes page:
- Add Button—Click Add to create a new node.
- Edit Button—Select the node from the Node list, and click Edit to modify an existing node.
- Delete Button—Select the node from the Node list, and click Delete to delete an existing node from the list.

### Octel Node Configuration

After clicking Add or Edit from the Octel Nodes page, the Octel Node Configuration page in the Bridge Administrator is displayed. On this page, you enter information about the Octel node and the schedule for delivering messages to this node. Additionally, you can add or view directory entries that are associated with this node.

Use the following table to learn more about the Octel Node Configuration page.

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unity Computer Name</td>
<td>Enter the server name of the Cisco Unity server with which the Bridge communicates. (Enter the server name only, and not the fully qualified domain name.)</td>
</tr>
<tr>
<td>Unity SMTP Mail Suffix</td>
<td>Enter the SMTP recipient policy of the mail system supporting Cisco Unity (for example, enter mail.companya.com).</td>
</tr>
<tr>
<td>Codec</td>
<td>Select the codec used to encode all voice messages sent from the Bridge to the Unity node. Note that this setting is independent of the format of the voice messages that the Bridge receives from the Unity node. The default setting is G.711. Voice messages sent from Cisco Unity to the Bridge can be recorded in the G.711 or the G.729a wave format. Therefore, you can configure each Cisco Unity server as needed to record voice messages by using either the default G.711 codec or the G.729a codec.</td>
</tr>
<tr>
<td>Save Button</td>
<td>Click Save to save the configuration settings.</td>
</tr>
<tr>
<td>Delete Button</td>
<td>Click Delete to delete this node. Note that deleting the node here only deletes the node information from the Bridge.</td>
</tr>
<tr>
<td>Directory Button</td>
<td>Click Directory to view the directory entries for this node. The Directory List page appears and displays the list of names associated with the node. This list is propagated from the Unity node to the Bridge server. To exit the Directory List and return to the Unity Node Configuration page, from the Configuration menu, click the node name. Unity node directory entries can be viewed but not edited on the Bridge.</td>
</tr>
</tbody>
</table>
Table 1-9  Octel Node Configuration Page

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Number</td>
<td>Enter the unique serial number of the Octel node. Note that after the configuration settings are saved, you cannot change the serial number when editing the node. To change the Serial Number, you have to delete the node, and add it again with the correct Serial Number. The Serial Number must match the number that is displayed in the Cisco Unity Administrator in the Octel Node ID field on the Delivery Locations page that corresponds to this Octel Node. Additionally, the Serial Number must match the number of an Octel node.</td>
</tr>
<tr>
<td>Name</td>
<td>Enter a descriptive name for the remote node. You can enter up to 20 characters.</td>
</tr>
<tr>
<td>Phone Number</td>
<td>Enter the phone number that the server dials to send messages to the remote node. If the phone number of the remote node is in a different area code, include the area code. You can enter up to 14 digits. Note that the number dialed to reach the server consists of the Phone Number, Extension, and the Dial Sequence (see below). If a number longer than 14 digits is needed, the digits can be added to the Extension field or to the Dial Sequence.</td>
</tr>
<tr>
<td>Extension</td>
<td>Enter the extension number if it must be dialed to reach the remote node. You can enter up to 7 digits.</td>
</tr>
<tr>
<td>Dial Sequence</td>
<td>Enter the dial sequence that is required to call the remote node. At a minimum, the dial sequence should be set to “N” (phone number). You can enter up to 20 characters. The dial sequence can contain the following characters:</td>
</tr>
<tr>
<td></td>
<td>* digits 0 to 9</td>
</tr>
<tr>
<td></td>
<td>* and # (to correspond to the * and # keys on the phone)</td>
</tr>
<tr>
<td></td>
<td>P (for pause)</td>
</tr>
<tr>
<td></td>
<td>N (to insert the phone number)</td>
</tr>
<tr>
<td></td>
<td>X (to insert the extension number)</td>
</tr>
<tr>
<td></td>
<td>For example, enter 9NPPPX.</td>
</tr>
<tr>
<td>Save Button</td>
<td>To save this node, modify the appropriate values and click Save.</td>
</tr>
<tr>
<td>Delete Button</td>
<td>Click Delete to delete this node.</td>
</tr>
<tr>
<td>Directory Button</td>
<td>Click Directory to view the directory for this node. The Directory List page appears and displays the list of names associated with the node.</td>
</tr>
<tr>
<td></td>
<td>To add a name to the directory of this node, from the Directory List page, click Add. Enter the mailbox number and the name, and click Save.</td>
</tr>
<tr>
<td></td>
<td>To exit the Directory List, from the Configuration menu, click the node name.</td>
</tr>
</tbody>
</table>

**Message Delivery Windows**

For each node on the network, you define schedules for delivering messages. The Cisco Unity Bridge server follows these schedules when placing calls to the Octel node to transmit messages addressed to mailboxes on that node. When defining schedules, consider the immediacy with which you want messages to be delivered. You may want to configure the Administration delivery window for late at night to save on toll charges.
By default, a message delivery window is defined for each message type. You can disable one or two
message delivery windows, but you must leave at least one window enabled for message delivery to take
place. You must enable an Administration window if you want to propagate names from the Octel node
through the Bridge to your Cisco Unity servers.

The message type allows separate time windows and delivery intervals to be configured for different
types of messages. By default, the three message types are enabled and configured with different
intervals. Check the box next to the message type that you want to enable and define the Begin, End, and
Interval times to suit the schedule that you want the Bridge server to follow.

- Normal—Non-urgent messages from subscribers. Note that when Normal is the only type checked,
  Urgent and Administration messages are still delivered, but according to the Normal schedule.

- Urgent—Urgent messages from subscribers. Note that when Urgent is the only type checked,
  Administration messages are still delivered, but according to the Urgent schedule.

- Administration—Administrative messages only.

Use the following table to learn more about the Message Delivery Windows page.

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabled</td>
<td>Check the box next to the message type that you want to enable. Uncheck the box(es) for the type(s) that you do not want to use.</td>
</tr>
<tr>
<td>Begin</td>
<td>Enter the time of day, in the format hh:mmAM or hh:mmPM, that you want to begin sending messages to the remote node. The time can be entered in 12-hour or 24-hour format.</td>
</tr>
<tr>
<td>End</td>
<td>Enter the time of day, in the format hh:mmAM or hh:mmPM, that you want to stop sending messages to the remote node. The time can be entered in 12-hour or 24-hour format.</td>
</tr>
<tr>
<td>Interval</td>
<td>Enter a number from 1 to 240 for the interval in minutes that the server waits before calling a node again. After a call to a node fails, the server attempts the call again after waiting the specified number of minutes.</td>
</tr>
</tbody>
</table>

**Directory List**

The Directory List in the Bridge Administrator allows the administrator to view the directory of names
associated with the node. For Unity nodes, the entries can only be viewed, because mailbox propagation keeps the list maintained. In the case of Octel nodes, the administrator can add, view, or delete directory entries. Directory entries that are added by the administrator on the Bridge server are permanent.

Permanent entries are not aged and must be manually deleted by the administrator.

The following are buttons on the Directory List page:

- Add Button—Click Add to add a directory entry.
- Delete Button—Click Delete to delete a directory entry.
- View Button—Click View to view a directory entry.

**Adding a Name to an Octel Node Directory**

You can add permanent subscriber names to an Octel node directory.
To Add a Name to an Octel Node Directory

**Step 1**  If necessary, access the Cisco Unity Bridge server as discussed in the “Accessing the Cisco Unity Bridge for Administration” section on page 1-51.

**Step 2**  From the Configuration menu, click **Octel Nodes**.

**Step 3**  Select the Octel node you want to change, and click **Edit**.

**Step 4**  On the Octel Node page, click **Directory**.

**Step 5**  On the Directory List page, click **Add**.

**Step 6**  On the Directory Entry page, enter the subscriber mailbox number in the Mailbox Number box.

**Step 7**  Optionally, enter the subscriber name in the Name box. If you enter a name here, it will be overwritten by the name retrieved from the Octel node.

**Step 8**  Click **Save**.

The Bridge server makes an administrative call to the Octel node to obtain the recorded voice name and other user information.

---

Viewing a Name in an Octel Node Directory

You can view permanent subscriber names in an Octel node directory.

**To View a Name in an Octel Node Directory**

**Step 1**  If necessary, access the Cisco Unity Bridge server as discussed in the “Accessing the Cisco Unity Bridge for Administration” section on page 1-51.

**Step 2**  From the Configuration menu, click **Octel Nodes**.

**Step 3**  Select the Octel node from the list, and click **Edit**.

**Step 4**  On the Octel Node page, click **Directory**.

**Step 5**  On the Directory List page, select a mailbox number from the Directory.

**Step 6**  Click **View**.

On the Directory Entry page, the subscriber mailbox number and name are visible. The Entry Type line indicates Permanent (created manually on the Bridge) or Usage-based (created by NameNet).

**Step 7**  To return to the Directory List page, from the Configuration menu, click **Node Directory**.

---

Deleting a Name in an Octel Node Directory

You should delete a subscriber name in an Octel node directory if the name is no longer being used.

**To Delete a Name in an Octel Node Directory**

**Step 1**  If necessary, access the Cisco Unity Bridge server as discussed in the “Accessing the Cisco Unity Bridge for Administration” section on page 1-51.
Step 2 From the Configuration menu, click Octel Nodes.

Step 3 Select the Octel node from the list, and click Edit.

Step 4 On the Octel Node page, click Directory.

Step 5 On the Directory List page, select a mailbox number from the Directory.

Step 6 Click Delete.

A message displays the warning, “All details associated with this entry will be lost.”

Step 7 Click OK to confirm the deletion.

The Bridge will send Cisco Unity a “Delete User” request to delete both the Bridge subscriber from Cisco Unity and the associated contact from Active Directory.

Directory Entry

The Directory Entry page in the Bridge Administrator displays the subscriber mailbox number and name. For an Octel node directory entry that you add, the Entry Type line indicates Permanent.

To return to the Directory List page, click Node Directory from the Configuration menu.

Use the following table to learn more about the Directory Entry page.

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mailbox Number</td>
<td>Displays the subscriber mailbox number.</td>
</tr>
<tr>
<td>Name</td>
<td>Displays the subscriber name.</td>
</tr>
<tr>
<td>Entry Type</td>
<td>Indicates whether the entry you view is Permanent or Usage-based. The Entry Type parameter displays when you view a current entry. Entries created by using this page are always Permanent.</td>
</tr>
<tr>
<td>Save Button</td>
<td>Click Save to save the new entry that you added. The Save button displays when you add a new entry to the directory.</td>
</tr>
<tr>
<td>Delete Button</td>
<td>Click Delete to delete the entry that you are viewing. The Delete button displays when you view an existing entry from the directory.</td>
</tr>
</tbody>
</table>

Line Status

The Line Status page in the Bridge Administrator allows you to monitor status information for the phone lines of the Cisco Unity Bridge server as it communicates with Octel servers. It also allows you to enable or disable specific phone lines for the Bridge server.

The Line Status page may be helpful when troubleshooting message flow between the Bridge server and Octel servers. See the “Are Calls Attempted?” section on page 2-8 and the “Troubleshooting Voice Message Flow from the Octel Node to the Bridge Server” section on page 2-22 for more troubleshooting information.

Use the following table to learn more about the Line Status page.
### Table 1-12 Line Status Information in the Bridge Administrator

<table>
<thead>
<tr>
<th>Field</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line</td>
<td>Indicates the phone line for which status information is displayed.</td>
</tr>
<tr>
<td>Status</td>
<td>Indicates the status of a phone line, as follows:</td>
</tr>
<tr>
<td></td>
<td>• Admin Receive—Receiving an administrative call to send names.</td>
</tr>
<tr>
<td></td>
<td>• Admin Send—Placing an administrative call to retrieve names.</td>
</tr>
<tr>
<td></td>
<td>• Calling—Beginning a network callout.</td>
</tr>
<tr>
<td></td>
<td>• Disabled—Not initialized.</td>
</tr>
<tr>
<td></td>
<td>• Down—Not yet ready.</td>
</tr>
<tr>
<td></td>
<td>• Idle—On hook and available for a call.</td>
</tr>
<tr>
<td></td>
<td>• Incoming Call—Beginning to receive an incoming call.</td>
</tr>
<tr>
<td></td>
<td>• Receiving—Receiving messages.</td>
</tr>
<tr>
<td></td>
<td>• Receiving Fax—Receiving fax data.</td>
</tr>
<tr>
<td></td>
<td>• Receiving Voice—Receiving voice data.</td>
</tr>
<tr>
<td></td>
<td>• Retired—The line is retired. Whenever a problem occurs that prevents the Bridge from initiating an outgoing analog call on a particular analog port—for example, line cord not plugged in or no dial tone from the phone system—if the same problem happens on the same line four times in succession, the Bridge will retire the line.</td>
</tr>
<tr>
<td></td>
<td>• Sending—Sending messages.</td>
</tr>
<tr>
<td></td>
<td>• Sending Fax—Sending fax data.</td>
</tr>
<tr>
<td></td>
<td>• Sending Voice—Sending voice data.</td>
</tr>
<tr>
<td></td>
<td>• Unknown—Unable to process a call because of an unknown condition.</td>
</tr>
<tr>
<td>Serial Number</td>
<td>Displays the Octel node with which the Bridge server communicates and the Unity node that is the source or destination of the message. An arrow points left (</td>
</tr>
<tr>
<td>Info</td>
<td>Indicates additional information about a phone line, depending on the line status.</td>
</tr>
</tbody>
</table>
To maintain the Bridge, you must be able to monitor system activity so that you can adjust settings when necessary. In addition, you must have a recent backup of the system so that you can quickly restore operation, if necessary.

See the following sections for more information:

- Controlling the Number of Ports Used for Outgoing Messages, page 1-64
- Bridge Traffic Analyzer, page 1-65
- Backing Up and Restoring the Bridge, page 1-66

### Controlling the Number of Ports Used for Outgoing Messages

Outgoing messages from the Bridge to an Octel node are placed in queues. The Bridge maintains three queues for each node—one queue each for normal, urgent, and administrative messages. Queued messages are processed in first-in-first-out (FIFO) order.

The Bridge can simultaneously use more than one port on the analog voice-fax card(s) in the Bridge server to send messages to a particular Octel node. For example, if there are several messages in the normal message queue for a specific node and the Bridge is using one port to transmit the messages, and if an administrative or urgent message is sent to the node, the Bridge will use another port to dial out to send the administrative or urgent message.

Two parameters on the System Settings page in the Bridge Administrator allow you to control the number of ports used for outgoing messages to a specific node: Queued Call Threshold and Max Ports Per Node. These values are applied to each outgoing message queue (normal, urgent, and administrative) for each node.
Chapter 1 Bridge Networking

The value in Queued Call Threshold specifies the threshold number of messages that must be in the outgoing message queue of a specific node for an additional port to be used for message delivery. As the number of messages in the queue increases, an additional port is added when the number of messages in the queue reaches a multiple of this parameter.

For example, if the value of Queued Call Threshold is 10 (the default value), one port will be used for message delivery if there are fewer than 10 messages in the queue. For 10–19 messages, two ports will be used. For 20–29 messages, three ports will be used, and so on. The total number of ports used is limited by the Max Ports Per Node parameter.

Queued Call Threshold is also used to determine when to disconnect a port used for outgoing messages to a specific node. As the number of messages in the queue decreases, a port is disconnected when the number of messages in the queue is below the next lower multiple of this parameter. When only two ports are in use, as the number of messages in the queue drops below half of this parameter, the second port is disconnected.

For example, if the value of this parameter is 10, three ports will be used for message delivery if there are 20–29 messages in the queue. As the number of messages in the queue decreases, the third port is not disconnected until the number of messages in the queue drops to 10 or fewer. When the number of messages drops to 5 or fewer messages, the second port is disconnected, so only one port is used to transmit the remaining messages.

The Max Ports Per Node parameter allows you to specify the maximum number of ports that are allowed to be used simultaneously to deliver messages to a particular node. Again, this value is applied to each queue. For example, if Max Ports Per Node is 4 (the default value), it is possible (though unlikely) that 12 ports could be used simultaneously to send normal, urgent, and administrative messages to a specific node.

Determining Optimal Values for Queued Call Threshold and Max Ports Per Node

The optimal values for Queued Call Threshold and Max Ports Per Node depend on the number of ports, the number of nodes, and on message traffic patterns. Start with the default values for these parameters, and use the Bridge Traffic Analyzer to observe message traffic patterns to see whether you need to adjust the settings. See the “Bridge Traffic Analyzer” section on page 1-65 for more information.

The default values should be appropriate for light message traffic because the thresholds for the parameters are never reached. The default values should also be sufficient for installations with medium traffic and a small to medium number of Octel nodes. However, installations with medium traffic and ten or more Octel nodes, or with high traffic, should watch the reports generated by the Bridge Traffic Analyzer carefully, and adjust the values for the parameters as necessary.

If you decide to adjust the values for Queued Call Threshold and Max Ports Per Node, keep in mind that the Bridge ports are used for both outgoing messages to Octel nodes and incoming messages to the Bridge. If message traffic is high enough, it is possible to adjust the values such that all the ports will be used for outgoing messages, leaving no ports available for incoming messages.

Bridge Traffic Analyzer

The Bridge Traffic Analyzer is a report-generation utility that reads the call and queue log files on the Bridge server and generates a graph and a summary table that can be saved as a comma-separated value (CSV) file. The Bridge Traffic Analyzer is available on the Cisco Unity Utilities page of the Software Center website on Cisco.com, at http://www.cisco.com/cgi-bin/tablebuild.pl/unity-util.
The Bridge Traffic Analyzer generates reports by using the data in the call and queue log files in the \Starfish\Log directory on the Bridge server. The Call Log Retention parameter on the System Settings page in the Bridge Administrator allows you to specify the number of days of call history to retain. For more information about the Call Log Retention setting, see the “System Settings” section on page 1-51.

In the reports, the direction of the queues is from the perspective of Cisco Unity:

- The inbound queue contains messages from Octel nodes that the Bridge sends to Cisco Unity. Messages in the inbound queue are sent to Cisco Unity by using SMTP. Therefore, unless Cisco Unity or Exchange is down, messages move very quickly through the inbound queue.

- The outbound queue contains messages from Cisco Unity that the Bridge sends to the appropriate Octel nodes. Messages in the outbound queue are sent through the ports on the analog voice-fax card(s) on the Bridge server to the Octel nodes. Because the number of ports is a fixed resource, and because analog transmissions are slow in comparison to SMTP, it is possible that messages will back up in the outbound queue.

The Bridge Traffic Analyzer provides the following reports:

- **Port Availability**—Shows the availability of ports on the analog voice-fax card(s) on the Bridge server. You can choose to show how many ports were available to take calls from Octel nodes, how many ports were busy, or both. The summary CSV file presents a table with the maximum and minimum number of available ports for each hour during the day.

- **Message Queue Activity**—Shows how many messages and how much data is passing through the inbound and outbound message queues on the Bridge server. You can choose to show the number of messages, the message queue size in MB, or both. The summary CSV file presents a table with the maximum number of messages in the inbound and outbound queues, and the maximum message size of the inbound and outbound queues for each hour during the day.

- **Message Latency**—Shows the length of time that messages stayed in the outbound queue before being delivered to the Octel nodes. You can select a time range for the report (the default is 24 hours), and you can choose which Octel nodes to see in the report (by default, all nodes are shown). The Message Latency report shows only the outbound queue. Messages arrive quickly from Cisco Unity, but are delivered by analog lines to their target Octel node; therefore, it is possible for messages to back up in the queue waiting for an available port.

- **Node Message Traffic**—Shows how many messages and how much data is passing between different Cisco Unity and Octel nodes. For example, you can use this report to determine which Octel nodes a specific Cisco Unity server is messaging with most heavily. You can select one or more Cisco Unity nodes, one or more Octel nodes, and a time range for the report.

Refer to the Help file that comes with the Bridge Traffic Analyzer for more information about these reports.

### Backing Up and Restoring the Bridge

Offline backup is the only type of backup supported for the Cisco Unity Bridge. When backing up the Bridge server, you need to back up only the configuration files.

When restoring a Bridge server, you install the Bridge software and restore the configuration files.

See the following procedures for step-by-step instructions:

- **To Back Up the Bridge Server, page 1-67**
- **To Restore the Bridge Configuration Files to the Same Server, page 1-67**
- **To Restore the Bridge Configuration Files to a New Server, page 1-68**
To Back Up the Bridge Server

Step 1 Open the Services Control Panel on the Bridge Server, and stop the following services:
   - Digital Networking
   - Unity Bridge

Any calls that are in progress are allowed to finish before the services are stopped.

Step 2 Back up the following directories:
   - \SN (include all files and subfolders)
   - \starfish\db\StarFish.mdb
   - \VPIM\vpim.cfg
   - \VPIM\Propagation (include all files and subfolders)

Step 3 In the Services Control Panel, start the following services:
   - Digital Networking
   - Unity Bridge

Step 4 Close the Service Control Panel.

To Restore the Bridge Configuration Files to the Same Server

Step 1 Open the Services Control Panel on the Bridge Server, and stop the following services:
   - Digital Networking
   - Unity Bridge

Any calls that are in progress are allowed to finish before the services are stopped.

Step 2 Open the Add/Remove Programs Control Panel, click Unity Bridge, and click Remove to uninstall the Cisco Unity Bridge software.

Step 3 Restart the Bridge server.

Step 4 Reinstall the Cisco Unity Bridge software according to the instructions in the Cisco Unity Bridge Installation Guide, which is available on Cisco.com at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_installation_guides_books_list.html.

Step 5 After the post-installation restart, open the Services Control Panel on the Bridge Server, and stop the following services:
   - Digital Networking
   - Unity Bridge

Step 6 Restore the following from the backup:
   - \SN (include all files and subfolders)
   - \starfish\db\StarFish.mdb
   - \VPIM\vpim.cfg
   - \VPIM\Propagation (include all files and subfolders)
Notable Behavior

The paths above are relative to the drive and directory in which the Bridge software is installed. The default is D:\Bridge.

Step 7  In Services Control Panel, start the following services:
- Digital Networking
- Unity Bridge

Step 8  Close the Services Control Panel.

To Restore the Bridge Configuration Files to a New Server

Step 1  Install the new Bridge server according to the instructions in the Cisco Unity Bridge Installation Guide, which is available on Cisco.com at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_installation_guides_books_list.html.

Step 2  After the post-installation restart, open the Services Control Panel on the Bridge Server, and stop the following services:
- Digital Networking
- Unity Bridge

Step 3  Restore the following from the backup:
- \SN (include all files and subfolders)
- \starfish\db\StarFish.mdb
- \VPIM\vpim.cfg
- \VPIM\Propagation (include all files and subfolders)

Note  The paths above are relative to the drive and directory in which the Bridge software is installed. The default is D:\Bridge.

Step 4  In the Services Control Panel, start the following services:
- Digital Networking
- Unity Bridge

Step 5  Close the Service Control Panel.

Notable Behavior

This section describes notable behavior of Bridge Networking. See the following sections for more information:
- Inbound Search Scope, page 1-69
- Directory Lookups of Asian and European Names May Fail, page 1-69
Notable Behavior

- Leaving a Message Versus Sending a Message, page 1-69
- Some Messages to Cisco Unity Are Delayed, page 1-70
- Distribution Lists, page 1-70

Inbound Search Scope

In installations with multiple Cisco Unity servers networked together, the search scope for a matching subscriber extension for inbound messages sent from the Bridge is set to the global directory. It is not possible to limit the inbound search scope to either a dialing domain or to the local Cisco Unity server.

If two (or more) Cisco Unity subscribers have identical extensions, messages from Octel subscribers will not be delivered by the Voice Connector to any of the Cisco Unity subscribers with the duplicate extensions. When the Voice Connector detects duplicate extensions, it logs a warning to the Windows Application Event log. If you are concerned that there might be duplicate extensions among Cisco Unity subscribers, you can check the Application Event log on the Exchange server on which the Voice Connector is installed for warnings from the Exchange 2000 Voice Connector.

Directory Lookups of Asian and European Names May Fail

Octel voice messaging systems and the Bridge encode subscriber text names in 7-bit ASCII format, which can represent only 128 unique characters. Some European languages need 8 bits to represent certain characters, expanding the character range from 128 to 255. Additionally, languages such as Japanese Kanji include many more characters and require two bytes (16 bits) to represent each character.

Cisco Unity uses the industry-standard Unicode, which employs a 16-bit coding scheme that allows for 65,536 distinct characters—more than enough to represent the characters necessary to any European or Asian language.

The Bridge maintains a permanent directory of Cisco Unity subscribers, including text name, extension, and voice name. Cisco Unity keeps its subscriber directory in sync with the subscriber directory on the Bridge. However, before sending subscriber data to the Bridge, Cisco Unity converts the subscriber text names, which it stores in Unicode, to 7-bit ASCII. Because the first 128 characters in Unicode map exactly to the 128 characters in 7-bit ASCII, English-language names and most European names are converted exactly.

However, European- and Asian-language names that include characters from the extended range cannot be represented in 7-bit ASCII. Therefore, directory lookups by name on Octel systems may fail to find Cisco Unity subscribers whose names include characters that cannot be represented in 7-bit ASCII. This means that Octel subscribers cannot address messages to a Cisco Unity subscriber by spelled-name if the Cisco Unity subscriber name includes characters that cannot be represented in 7-bit ASCII. In this circumstance, Octel subscribers can still address messages by entering the subscriber extension, which finds the subscriber data in the directory, and the Octel subscribers will still get voice name confirmation.

Leaving a Message Versus Sending a Message

When a person on the Octel system who has a corresponding Bridge subscriber account calls a Cisco Unity subscriber and leaves a message, Cisco Unity does not identify the message as being from the Bridge 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 subscriber’s internal greeting when the caller leaves a message.
Notable Behavior

- Cisco Unity does not play the recorded voice name of the Bridge 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 Octel system records and sends a message to a Cisco Unity subscriber, Cisco Unity can identify the message as being from the corresponding Bridge 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 Octel server via Octel analog networking to the Bridge 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 Bridge subscriber, and allows the recipient to record a reply.

Some Messages to Cisco Unity Are Delayed

Messaging between Cisco Unity and the Bridge is done by using SMTP through Exchange. If the SMTP connection between the Bridge and Exchange goes down, messages arriving at the Bridge from Octel subscribers cannot be delivered. The Bridge stores the messages that could not be delivered and attempts to send them 20 minutes later. This 20-minute retry interval is not configurable.

When the SMTP connection comes back up, new messages coming from Octel subscribers are delivered immediately. However, the Bridge does not send the messages that previously could not be delivered until the end of the retry interval. Therefore, it is possible that some messages could be stored on the Bridge for up to 20 minutes before they are delivered, even though other messages are delivered immediately.

Distribution Lists

Cisco Unity requires that messages from the Bridge be addressed to subscribers only, and not to distribution lists. Therefore, Octel subscribers cannot address messages to Cisco Unity distribution lists.

This is true in the other direction as well—Octel analog networking does not allow subscribers to address messages to a distribution list that was created on remote Octel nodes. Therefore, Cisco Unity subscribers cannot address messages to Octel distribution lists.

However, you can mitigate this situation as follows:

- Add Bridge subscribers to private or public distribution lists on Cisco Unity.
- Add the remote addresses of Cisco Unity subscribers to Octel distribution lists. (Note that these addresses do not have to already exist in the NameNet directory.)

Tip

You can set up a Cisco Unity subscriber account whose sole purpose is to forward messages from the Bridge to a Cisco Unity distribution list. Messages from Octel subscribers that the Bridge sends to Cisco Unity have “Unity Bridge Message” in the subject line. By using the Outlook Rules Wizard, you can have any message that this subscriber mailbox receives—with the subject line “Unity Bridge Message”—forwarded to a Cisco Unity distribution list. With this approach, Octel subscribers can address messages to the special subscriber, and have the messages forwarded to the Cisco Unity distribution list.