CHAPTER 10

Digital Networking

Overview: Digital Networking

In organizations with two or more Cisco Unity servers connected to a network, each Cisco Unity installation serves a distinct group of subscribers. Cisco Unity Digital Networking is the feature that allows subscribers to address voice messages—by using the phone—to subscribers at other locations. The alternative methods for setting this up include:

With a single directory — Allows messaging among multiple Cisco Unity servers connected to a single, corporate-wide Exchange directory.

Blind addressing — Allows messaging among multiple Cisco Unity servers that are connected to Exchange but maintain separate directories.

Internet subscribers — Allows messaging to recipients on computers that do not use Exchange.

If your organization also has the FaxMail and text-to-speech e-mail licensed features, subscribers can use the phone to forward fax and e-mail messages to any subscriber in the organization.

Digital Networking also provides the means to transfer calls from the automated attendant or directory assistance to subscribers who are not associated with the local server (although there are limitations to this functionality).

About locations

Central to Digital Networking is a Cisco Unity entity called a location. Each location entity contains the addressing information that Cisco Unity needs to route messages to other Cisco Unity servers. Cisco Unity stores location and subscriber addressing information in the Exchange directory.

Each Cisco Unity server is associated with one location (referred to as the default or primary location), which is created during installation and which cannot be deleted. With the exception of public distribution lists, all subscribers and other Cisco Unity entities (such as call handlers) created on your Cisco Unity server are associated with the default location of your server.

About dialing domains

Multiple Cisco Unity servers can be grouped together into a dialing domain. A dialing domain provides a means to group subscribers when the Cisco Unity servers are connected to a single, corporate-wide directory, and when Cisco Unity is integrated with a networked phone system. In this configuration, callers who reach the opening greeting of your organization can dial the extension of any subscriber or look up any subscriber in directory assistance; the call is transferred regardless of the Cisco Unity server in the dialing domain that the subscriber is associated with. (See the "Call Transfer Settings Unavailable" section on page 10-24 for information about limitations with call transfers from the automated attendant and directory assistance.)

A dialing domain also provides a means to set the scope for searches that Cisco Unity performs when a subscriber addresses a message or when callers use directory assistance. See the "Location Addressing Option Settings" section on page 24-9 for information about how dialing domains are used to scope searches. Dialing domains can encompass multiple Exchange 5.5 sites or similar networking boundaries in Exchange 2000.

Although the creation of a dialing domain is optional, the Cisco Unity servers integrated with the networked phone system cannot take advantage of the networked features unless they are grouped within a dialing domain. See the "Networked Phone Systems" section on page 10-6, and the "Creating a Dialing Domain" section on page 24-4 for more information.

Digital Networking Alternatives

With a single directory

Digital Networking is optimally designed for organizations in which the Cisco Unity servers access a single, corporate-wide directory. Cisco Unity stores the addressing information for subscribers and locations in the directory. Because of directory replication, each Cisco Unity server has the information that it needs to address voice messages to subscribers associated with the other Cisco Unity servers.

If some or all of the Cisco Unity servers in your organization access separate directories, or the location to which you need to send messages is not a Cisco Unity server, you need to choose either blind addressing or Internet subscribers as an alternative.

Blind addressing

With blind addressing, a location on your local Cisco Unity server is created to correspond to each remote Cisco Unity server. Each location on the local Cisco Unity server is set up with the addressing information that Cisco Unity needs to address messages to subscribers associated with the remote server—an ID (called a Dial ID) and a domain name. Cisco Unity combines this information with the extension that a subscriber enters when addressing a message to form the address.

To address a message by using blind addressing, subscribers enter the Dial ID followed by the extension. With blind addressing, subscribers will encounter some limitations when addressing messages to subscribers at another location. Subscribers are limited to using number mode, so they must know the numbers that represent both the location Dial ID and the extension of the recipient. Additionally, 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.

Because there is little administrative overhead to setting up and maintaining blind addressing between servers, blind addressing is the best choice when there are many subscribers at the remote location.

Internet subscribers

Internet subscribers are Cisco Unity subscribers who do not have mailboxes on the local Exchange network. Instead, messages for Internet subscribers are sent to an e-mail address that you specify when you create the Internet subscriber account in the Cisco Unity Administrator. Setting up Internet subscriber accounts is the best solution when the recipients at the other location are not using Cisco Unity.

When the recipients at the remote location are using Cisco Unity, you may decide to set up Internet subscriber accounts instead of using blind addressing in the following circumstances:

- When the recipients at the other location need to be included on public or private distribution lists that are created on the local Cisco Unity server.
- When there are only a few subscribers on a remote Cisco Unity server who need to receive messages from the subscribers at your location. Setting them up as Internet subscribers avoids the addressing limitations encountered by subscribers when using blind addressing.
- When outside callers need to be able to call the local Cisco Unity server to leave a message for a subscriber associated with another Cisco Unity server. You may want to do this, for example, to provide a way for outside callers to avoid long distance charges when leaving a message for a remote subscriber.

A combination

The three Digital Networking alternatives—with a single directory, blind addressing, and Internet subscribers—are not mutually exclusive. For example, if the Cisco Unity servers in your organization are set up to access a single directory, you can still add Internet subscriber accounts for contractors working at home, and also set up blind addressing to a field sales office where the Cisco Unity server has a separate directory.

AMIS

Cisco Unity supports the Audio Messaging Interchange Specification (AMIS) protocol, which provides an analog mechanism for transferring voice messages between different voice messaging systems. The alternatives for setting up Cisco Unity to be able to send messages by using AMIS—AMIS blind addressing and AMIS subscribers—are similar to those provided with Digital Networking. All of the Digital Networking alternatives may be combined with AMIS locations and AMIS subscribers. See Chapter 11, “AMIS” for more information.

Refer to the following sections in this chapter for more information about Digital Networking:

- With a Single Directory, page 10-5—This section describes how to set up Digital Networking in an organization where the Cisco Unity servers access a single, corporate-wide directory.
- Blind Addressing, page 10-10—This section describes how to set up blind addressing in an organization where the Cisco Unity servers do not access a single directory.
- Internet Subscribers, page 10-12—This section describes how to set up Internet subscriber accounts to address messages to people who do not have mailboxes on the Exchange network to which your Cisco Unity server is connected.
- SMTP Connector, page 10-14—This section provides information about the Exchange SMTP Connector that needs to be installed if you are using blind addressing or Internet subscribers.
- Internet Voice Connector, page 10-14—This section provides information about the Internet Voice Connector, which is a Cisco Unity gateway that needs to be installed if you are using blind addressing.
- Limitations, page 10-23—This section provides information about the limitations of Digital Networking.

Related section

- Chapter 24, "Network Settings"

With a Single Directory

The Digital Networking feature is designed for organizations where the Exchange network that the Cisco Unity servers are connected to shares a single, corporate-wide directory. The addressing information that Cisco Unity needs—including subscriber names, extensions, e-mail addresses, location names, Dial IDs, and domain names—is stored in the Exchange directory (along with other Cisco Unity-specific attributes). Because of directory replication, each Cisco Unity server has access to all the addressing information that it needs to address messages to subscribers associated with every Cisco Unity server on the network.

Networked Phone Systems

With a networked phone system, subscribers can dial an extension rather than a full phone number when calling someone who is at another location on the phone network. To allow Cisco Unity to make use of this feature, the Cisco Unity servers that are integrated with the networked phone system must be added to a dialing domain. In addition, subscriber extensions must be unique across locations within the dialing domain. When set up this way:

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

Note that when calls are transferred from the automated attendant or directory assistance to subscribers not associated with the local server, the transfers are automatically handled by the phone system—rather than by Cisco Unity—even if these subscribers are set up for supervised transfers. In this case, the call screening, call holding, and announce features will not be available on these calls.

In addition, when a subscriber calls another subscriber who is associated with a different Cisco Unity server, and the call is forwarded to voice mail, Cisco Unity cannot identify who left the message. Instead, the message is handled as though it came from an unidentified caller.

Non-Networked Phone Systems

If your organization has a separate phone system for each location, subscribers at one location dial a complete phone number, not just an extension, when calling someone at another location. However, when addressing a message to a subscriber associated with another Cisco Unity server, subscribers enter an extension.

As a convenience for subscribers, you may choose to add alternate extensions to each subscriber account. With alternate extensions, the number that a subscriber enters when addressing a message to someone at another location is the same

number that the subscriber dials when calling. This way, subscribers do not need to remember two different numbers—one for calling a subscriber directly, and one for addressing a message.

For example, a subscriber, Kelly Bader, has extension 4060. If the subscribers at a remote location dial 123-456-4060 to reach Kelly by phone, Kelly should have 1234564060 set as an alternate extension for message addressing. (If a remote location is in the same area code, the alternate extension can be set as the 7-digit phone number, in this case, 4564060).

Alternate extensions have other purposes beyond their use in Digital Networking, such as handling multiple line appearances on subscriber phones. Subscribers can have up to nine alternate extensions. For information on setting up alternate extensions, see the "Subscriber Alternate Extension Settings" section on page 15-33.

Cisco Unity Administrator Scope

With the exception of public distribution lists, all subscribers and other Cisco Unity entities (such as call handlers) created on your Cisco Unity server are associated with the default location of your server. Because of this association, you cannot view or modify within the Cisco Unity Administrator the accounts of subscribers or other entities that were created on another server. However, you can view information about the locations for the other servers in your network, though you cannot modify or delete those remote locations.

Public distribution lists are not associated with a specific Cisco Unity location. As long as a list has a recorded voice name, an extension, or both, subscribers can address messages to any public distribution list (if allowed by their class of service), regardless of which location created the list.

New lists

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

- The extension for the list must be unique among locations in the entire directory. Therefore, you need to know which extensions are in use at other locations before assigning an extension to the new list.
- In the Cisco Unity Administrator, you can add members from multiple locations, if allowed by the Addressing Options settings for the default location on your Cisco Unity server. See the "Location Addressing Option Settings" section on page 24-9 for more information.

- In the Cisco Unity Administrator, you can view all members of a list regardless of which location the member is associated with.
- You can add subscribers from another location to a list by using the Exchange Administrator or the Windows Active Directory Users and Computers, and they will be visible in the Cisco Unity Administrator.

Predefined public distribution lists

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

Private lists

When creating private lists, subscribers can add members from other locations if allowed by the addressing options for your default location. The location addressing options allow you to control the search that Cisco Unity performs when a subscriber adds members to a private list and when a subscriber addresses a message.

Mapping subscribers to Cisco Unity servers

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

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

To create a record of the mapping, run the Subscribers report on each Cisco Unity server. The information in this report includes the subscriber name and location. See the "Subscribers Report" section on page 23-5 for more information.

Setting Up Digital Networking with a Single Directory

Follow these general steps to set up Digital Networking with a single directory:

1. Review the guidelines in the "Location Dial IDs" section on page 24-2 to verify that the ID you enter as the Dial ID for the default location will not conflict with any other extensions or location Dial IDs.
2. Go to the Network > Locations > Profile page in the Cisco Unity Administrator and customize the default location for your server. See the "Customizing the Default Location" section on page 24-4 for more information.
3. If the Cisco Unity servers are integrated with a networked phone system, create a dialing domain. See the "Creating a Dialing Domain" section on page 24-4 for more information.
4. If each Cisco Unity server is integrated with a separate phone system, you may want to add alternate extensions to each subscriber account. See the "Subscriber Alternate Extension Settings" section on page 15-33 for information about adding alternate extensions.
5. Go to the Network > Locations > Addressing Options page in the Cisco Unity Administrator and adjust the settings as needed for the default location of your server. See the "Location Addressing Option Settings" section on page 24-9 for information about when and how Cisco Unity uses the addressing options to search for a matching extension.
6. If the Cisco Unity servers are integrated with a networked phone system, and if you want to set up the automated attendant on the local Cisco Unity server so that callers can be transferred to subscribers associated with other servers in the same dialing domain, see the "Setting Up Automated Attendant Transfers to Networked Cisco Unity Servers" section on page 10-23.

Blind Addressing

Blind addressing provides a way for Cisco Unity to construct e-mail addresses so that subscribers can send messages to subscribers at other locations, even when some or all of the Cisco Unity servers in your organization do not access a single corporate-wide directory. With blind addressing, when a subscriber addresses a voice message to someone at another location, Cisco Unity constructs the address and sends the message on its way without verifying that the recipient exists.

To set up blind addressing, you create a location on your Cisco Unity server for each remote Cisco Unity server that will be receiving messages from your location. Because your Cisco Unity server does not have access to the names, extensions, and e-mail addresses of the subscribers at other locations, subscribers cannot use spelling mode when blind addressing a message to someone at another location; they must know the location Dial ID and extension of the recipient. When addressing a message, Cisco Unity combines the location domain name with the location Dial ID and extension entered by the subscriber, and forms an address. This address is called an extension address.

For example, a subscriber presses 333506 on the phone to address a message to Chris Durand in Paris. Cisco Unity searches the directory and finds that there is a location named Paris with Dial ID 333. The Paris location has the domain name paris.cisco.com, so Cisco Unity constructs the address 333_506@paris.cisco.com. In order for Chris Durand to receive the message, the associated Exchange account must include an address in this format in addition to the regular e-mail address.

Extension Address Utility

The addresses that Cisco Unity forms by combining the location Dial ID, extension, and domain name are called extension addresses. Cisco Unity provides the Extension Address utility to generate extension addresses. When you run the Extension Address utility, it forms an address for each subscriber in the following format: <Dial ID>_<Extension>@<Domain Name>. The utility uses the Dial ID and Domain Name from the default location.

The Extension Address utility creates extension addresses of type VOICE and of type SMTP, both of which are required for blind addressing to work. Before you use the Extension Address utility, you must install the Internet Voice Connector and customize the default location. After the Internet Voice Connector is installed,

Cisco Unity automatically generates VOICE and SMTP addresses when you add new subscribers. Therefore, you only need to use the Extension Address utility to generate extension addresses for subscriber accounts that existed before the Internet Voice Connector was installed.

However, if you modify the default location Dial ID or domain name after generating extension addresses, you must also use the Extension Address utility again to generate new extension addresses. Otherwise, subscribers will have incorrect extension addresses, and they will not receive messages from subscribers at other locations.

To generate extension addresses

Step 1 Install the Internet Voice Connector. See the "Internet Voice Connector" section on page 10-14 for more information.

Step 2 Customize the default location. See the "To customize the default location" section on page 24-4 for more information, and then continue with Step 3.

Step 3 On the Cisco Unity server, go to **Start > Programs > Cisco Unity > Extension Address Utility**.

Step 4 Click **Update**.

Step 5 When the utility has finished creating extension addresses, click **Close**.

Setting Up Blind Addressing

Follow these general steps to set up blind addressing:

1. Install the SMTP Connector and Internet Voice Connector. These connectors allow the Cisco Unity servers to send and receive voice messages. See the "SMTP Connector" section on page 10-14 and the "Internet Voice Connector" section on page 10-14 for more information.
2. Review the guidelines in the "Location Dial IDs" section on page 24-2 to verify that the ID that you enter as the Dial ID for the default location will not conflict with any other extensions or location Dial IDs.

3. Customize the default location so that it contains addressing information for your location. See the "Customizing the Default Location" section on page 24-4 for more information.
4. Go to the Network > Locations > Addressing Options page for the default location and enable blind addressing. See the section "Location Addressing Option Settings" section on page 24-9 for information about when and how Cisco Unity uses the addressing options to search for a matching extension and Dial ID.
5. Create locations for the other Cisco Unity servers. See the "Creating Locations for Use in Blind Addressing" section on page 24-5 for more information.
6. Use the Extension Address utility to generate extension addresses for your subscribers. Subscriber accounts that you subsequently create will automatically be given extension addresses. See the "Extension Address Utility" section on page 10-10 for more information.

Note that it is possible to set up blind addressing to another location that is not using Cisco Unity. Because the Extension Address utility and the Internet Voice Connector only work with Cisco Unity servers, the location not using Cisco Unity must manually create a numeric extension address for each message recipient. In this scenario, voice messages are delivered as e-mail messages with WAV file attachments.

Internet Subscribers

Internet subscriber accounts are similar to regular subscriber accounts, with one important difference: they do not have message stores in the Cisco Unity local Exchange network. Instead, Cisco Unity forwards messages to them by using the e-mail address that you specified when setting up the account, which is typically a standard SMTP address. If the Internet subscribers are not using Cisco Unity, they receive voice messages as e-mails with attached WAV files.

Internet subscribers in Cisco Unity are represented as custom recipients in Exchange 5.5 and as mail-enabled contacts in Active Directory. You create and manage Internet subscriber accounts in much the same way that you do regular subscriber accounts. For example, you assign them to a class of service, and can set call transfer settings for them.

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

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

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

- Cannot log on to Cisco Unity by phone to check or send messages.
- Cannot log on to Cisco Unity by phone—or use the ActiveAssistant—to adjust personal settings, so their recorded names and greetings can only be recorded or changed in the Cisco Unity Administrator.
- Cannot own private lists.
- Cannot set up or receive message notifications.
- Cannot receive message waiting indications.

Setting Up Internet Subscribers

Follow these general steps to set up Internet subscriber accounts:

1. Install the SMTP Connector. See the "SMTP Connector" section on page 10-14 for more information.
2. If you are setting up an Internet subscriber account on your local server for a recipient on a remote Cisco Unity server, then you should install the Internet Voice Connector. See the "Internet Voice Connector" section on page 10-14 for more information.
3. If you are setting up an Internet subscriber on your local server for a recipient who is not using Cisco Unity, then the computer used by the recipient must have access to an SMTP gateway (such as through an Internet service provider).

4. Create Internet subscriber accounts on the local Cisco Unity server for every message recipient at the remote location. See the "Using the Cisco Unity Administrator to Add or Import Subscribers" section on page 14-14 for information about creating Internet subscribers.

SMTP Connector

The SMTP Connector is a Simple Mail Transfer Protocol gateway built into Exchange (in Exchange 5.5, this connector is called the Internet Mail Service). The SMTP Connector provides the ability to send and receive mail between computers that support SMTP, which means that mail can be sent to both Exchange and non-Exchange mail servers.

When a voice message is sent through the SMTP Connector to another Internet address, the connector discards data that it does not recognize, such as the custom attributes associated with the voice message, and any information about the message that the phone system provides. The message is delivered as an e-mail message with a WAV file attachment. The recipient can access the message through an e-mail client, but not over the phone.

For performance reasons, you should install the SMTP Connector on a server other than the Cisco Unity server. However, if necessary, it can be installed on the Cisco Unity server. For more information, refer to your Exchange documentation.

Internet Voice Connector

The Internet Voice Connector (also referred to as the Voice Gateway) allows two Cisco Unity systems to send and receive SMTP mail while preserving the Cisco Unity-specific attributes in the messages. These attributes allow Cisco Unity to handle messages as voice messages. When a subscriber addresses a voice message to someone at another location, the Internet Voice Connector packages all the custom attributes associated with the voice message into a MIME attachment. The Exchange SMTP Connector can then send the message with all associated information.

On the receiving Cisco Unity server, the Internet Voice Connector converts the information in the MIME attachment of the message back to its original form. When the message is delivered to the recipient Exchange mailbox, it is identified as a voice message, and the recipient can access it both through an e-mail client and over the phone.

Messages are also able to go through the Internet Voice Connector to non-Cisco Unity sites or sites that are not using the Internet Voice Connector. In this situation, the message is delivered to the recipient as an e-mail message with a WAV file attachment.

You should install the Internet Voice Connector on the same Exchange server on which the SMTP Connector resides. Typically, it is installed on a server other than the Cisco Unity server; however, if necessary, both the SMTP Connector and the Internet Voice Connector can be installed on the Cisco Unity server.

The Internet Voice Connector provides two distinct gateways:

The Voice Gateway—The Voice Gateway handles messages with the ‘VOICE” address type. To install the Voice Gateway, follow the instructions in this section for setting up the Internet Voice Connector.

The AMIS Gateway—The AMIS Gateway handles messages with the “AMIS” address type. The AMIS Gateway allows voice messages to be sent and received between Cisco Unity and other voice messaging systems that support the AMIS analog protocol. For general information about the AMIS Gateway, see the “AMIS Gateway” section on page 11-9. To install the AMIS Gateway, follow the instructions in this section for setting up the Internet Voice Connector.

Because the Internet Voice Connector is sometimes referred to as the Voice Gateway, some of the components used during the set up of the Internet Voice Connector may include the name “Voice Gateway.” However, the following steps for setting up the Internet Voice Connector are valid for the set up of both the Voice Gateway and the AMIS Gateway.

Setting up the Internet Voice Connector

The Internet Voice Connector requires that the Microsoft Data Access Components (MDAC) are installed on the server. MDAC is automatically installed on servers running Windows 2000. If you need to install MDAC, the MDAC installation program, mdac_type.exe, is available on the Cisco Unity compact disc 1 in the MDAC folder within the appropriate language folder (if there is more than one installed language).

There are two Internet Voice Connector installation programs included on Cisco Unity compact disc 1, and separate set up procedures in this chapter, as follows:

- When Cisco Unity is connected to Exchange 5.5, see the "Setting Up the Internet Voice Connector for Exchange 5.5" section on page 10-16.
- When Cisco Unity is connected to Exchange 2000, see the "Setting Up the Internet Voice Connector for Exchange 2000" section on page 10-17.

Setting Up the Internet Voice Connector for Exchange 5.5

If you will be setting up Cisco Unity to use the AMIS protocol to send and receive messages with another voice messaging system, be sure to configure the UAmis account before setting up the Internet Voice Connector. For more information, see the "Configuring the UAmis Account" section on page 11-5.

To install the Internet Voice Connector for Exchange 5.5

Step 1 If you have not already done so, install the Exchange SMTP Connector (which in Exchange 5.5 is called the Internet Mail Service). See the Microsoft Exchange Administrator documentation for more information.

Step 2 Log on to the Exchange server on which the SMTP Connector resides by using a service account with administrative rights to the site and configuration containers. Insert the Cisco Unity compact disc 1, and browse to the VoiceGateway folder.

Step 3 Double-click **Setup.exe** and then click **Next**.

Step 4 Enter the port number that Exchange uses for LDAP and then click **Next**.

To find the port number, open the Exchange Administrator, and under the Cisco Unity server container, browse to Configuration\Protocols\LDAP.

Step 5 In the Address Types dialog box, check **Voice**. If you will also be using the AMIS protocol, then check both **Voice** and **AMIS**. Then click **Next**.

Step 6 Click **Next**.

Step 7 In the User Information dialog box, enter your Windows password and then click **Next**.

Step 8 When setup is complete, click **Finish**. The Internet Voice Connector service starts automatically.

Setting Up the Internet Voice Connector for Exchange 2000

If you will be setting up Cisco Unity to use the AMIS protocol to send and receive messages with another voice messaging system, be sure to configure the UAmis account before setting up the Internet Voice Connector. For more information, see the "Configuring the UAmis Account" section on page 11-5.

1. If you have not already done so, install the Exchange SMTP Connector. See the Microsoft Exchange System Manager documentation for more information.
2. Run the Internet Voice Connector installation program to copy files from the Cisco Unity compact disc to the server. See the "To run the Internet Voice Connector installation program" section on page 10-18 for a detailed procedure.
3. If you have already modified the Active Directory schema for the Internet Voice Connector during the Cisco Unity installation, skip to Step 4. Otherwise, see the "To modify the Active Directory schema" section on page 10-19 for a detailed procedure. Wait for the changes to the schema to replicate throughout the forest, and then proceed with the next step. To see the changes that the schema update program makes for the Internet Voice Connector, browse to the directory Schema\LdifScripts on Cisco Unity Disc 1, and view the file Voicegateway.ldf.
4. Create an instance of the Internet Voice Connector in Exchange System Manager. See the "To create an instance of the Internet Voice Connector in Exchange System Manager" section on page 10-19 for a detailed procedure. You can install more than one instance of the Exchange 2000 Voice Connector as needed to balance the messaging load.
5. To set up the Voice Gateway, create an address space for the "VOICE" message type. To set up the AMIS Gateway, create an address space for the "AMIS" message type. See the "To create an address space" section on page 10-20 for a detailed procedure.

6. Set access permissions on the Voice Gateway mailbox store so that you can access the mailbox for the Voice Gateway. This mailbox store is used for both "VOICE" and "AMIS" message address types. See the "To set access permissions on the mailbox store" section on page 10-21 for a detailed procedure.
7. Create the Voice Gateway mailbox. This mailbox is used for both "VOICE" and "AMIS" message address types. You can then view the MTS-OUT folder, either by logging on to the gateway mailbox from the gateway service executable or by using the queue viewer extension in the Exchange System Manager. The Voice Gateway always uses the First Storage Group on the Exchange Server for its mailbox. See the "To activate the MTS Folders and create the Voice Gateway mailbox" section on page 10-22 for a detailed procedure.
8. Start the Voice Gateway service. See the "To start the Voice Gateway" section on page 10-22 for a detailed procedure.

If you need to remove an instance of the Internet Voice Connector, see the "To remove a Voice Gateway" section on page 10-22.

To run the Internet Voice Connector installation program

Step 1 On the Exchange server on which the SMTP Connector resides, insert the Cisco Unity compact disc 1, and browse to the VoiceGateway2000 folder.

Step 2 Double-click **Install.exe** and then click **Next**.

Step 3 In the Address Types dialog box, check **Voice**. If you will also be using the AMIS protocol, then check both **Voice** and **AMIS**. Then click **Next**.

Step 4 Click **Next**.

Step 5 In the User Information dialog box, enter your Windows password and then click **Next**.

Step 6 When setup is complete, click **Finish**.

To modify the Active Directory schema

Step 1 On the domain controller that is the schema master, log on by using an account that is a member of the Schema Administrators group. Insert the Cisco Unity compact disc 1, and browse to the ADSchemaSetup folder.

Step 2 Double-click **ADSchemaSetup.exe**, and then double-click the dialog box that is displayed to proceed with the installation.

Step 3 Uncheck **Exchange 2000 Directory Monitor**. (Checking Exchange 2000 Directory Monitor modifies the schema to hold Cisco Unity-specific information. These schema modifications were applied during the installation of Cisco Unity, and should not be made again.)

Step 4 Check **Exchange 2000 Internet Voice Connector** and then click **OK**.

Step 5 After the LDAP Data Interchange Format (LDIF) scripts have finished running, click **OK**.

Caution Do not proceed with the rest of the setup for the Internet Voice Connector until the changes to the Active Directory schema have replicated throughout the forest. Otherwise, the setup will fail. Changes to the schema may take 15 minutes or more to replicate. To determine whether changes have replicated and to force replication if necessary, use the Replication Monitor, which is available if you install Support Tools from the Windows 2000 compact disc.

To create an instance of the Internet Voice Connector in Exchange System Manager

Step 1 Start the Exchange System Manager by clicking **Start > Programs > Microsoft Exchange > System Manager**.

Step 2 Navigate to **Connectors**. (If you have routing groups defined, expand the tree Administrative Groups\<name>\Routing Groups\<name>\Connectors.)

Step 3 Right-click **Connectors**, and choose **New > Exchange 2000 Voice Gateway**. The property sheet for the Exchange 2000 Voice Gateway Installation appears.

If Exchange 2000 Voice Gateway does not exist as a choice from the New menu, then run <Exchange Dir>\VoiceGateway\bin\other\registerAll.bat.

Step 4 Use the default name that appears in the Exchange Server field.

Step 5 Click **Active Directory** as the location for the configuration data. Note that storing the configuration data in the registry is not supported.

Step 6 Enter a new, unique display name, or use the default Display Name. The Display Name can be any valid name for a Windows 2000 Service. The name shown here will be used as the Display Name for the service in Active Directory and in Exchange System Manager.

Step 7 Enter a new, unique service name, or use the default Service Name. The Service Name can be any valid name for a Windows 2000 Service. The name shown here will be used as the relative distinguished name (RDN) for the gateway object in the Active Directory.

Step 8 Enter the full pathname of the Voice Gateway executable: **<Exchange Dir> \VoiceGateway\bin\GwIvc.exe**.

Step 9 Click **Apply** and then click **Yes**.

Step 10 When the service finishes installing, click **OK**.

Step 11 Click **OK** to dismiss the property sheet.

Step 12 Close the Exchange System Manager.

To create an address space

Step 1 Start the Exchange System Manager. (Click **Start > Programs > Microsoft Exchange > System Manager**.)

Step 2 Expand **Connectors**.

Step 3 Right-click the new Voice Gateway instance that you created in the previous procedure, To create an instance of the Internet Voice Connector in Exchange System Manager, and select **Properties**.

Step 4 Click the Address Space tab.

Step 5 Click **Add**.

Step 6 To set up the Voice Gateway, enter **Voice** as the Type, or to set up the AMIS Gateway, enter **AMIS** as the Type.

Step 7 For the Cost, enter **1**, or any value between 1 to 100. (The Cost associated with each connector is used to optimize message routing. Messages are routed according to the lowest Cost.)

Step 8 For the Address, enter * or another address.

Step 9 Click **OK**.

Step 10 If you are setting up both the Voice Gateway and the AMIS Gateway, repeat steps 5 through 9 for the second gateway.

Step 11 Click **Apply** and then click **OK**.

Step 12 Close the Exchange System Manager.

To set access permissions on the mailbox store

Step 1 Start the Exchange System Manager. (Click **Start > Programs > Microsoft Exchange > System Manager**.)

Step 2 Expand **Servers**.

Step 3 Expand the node for your Exchange 2000 Server.

Step 4 Expand the **First Storage Group** node.

Step 5 Right click the **Mailbox Store**.

Step 6 Select **Properties** to bring up the Mailbox Store Properties sheet.

Step 7 Click the **Security** tab.

Step 8 Click **Add**, and add the current administrator to the list.

Step 9 Click **OK**.

Step 10 Uncheck **Allow Inheritable Permissions from Parent to Propagate to this Object**.

Step 11 Click **Copy** on the dialog box that asks, "You are preventing any inheritable permissions from propagating to this object. What do you want to do?"

Step 12 In the Permissions list under the Allow column, check **Receive As** and **Send As**.

Step 13 Click **OK** and then click **Yes** to close the Properties sheet.

Step 14 Close the Exchange System Manager.

To activate the MTS Folders and create the Voice Gateway mailbox

Step 1 Open the Exchange System Manager. (Click **Start > Programs > Microsoft Exchange > System Manager**.)

Step 2 Expand **Connectors**.

Step 3 Click the new Voice Gateway instance that you created in the procedure, To create an instance of the Internet Voice Connector in Exchange System Manager.

Step 4 Click the **Queues** node.

Step 5 Close the Exchange System Manager.

To start the Voice Gateway

Step 1 Open the Exchange System Manager. (Click **Start > Programs > Microsoft Exchange > System Manager**.)

Step 2 Expand **Connectors**.

Step 3 Click the new Voice Gateway instance that you created in the procedure, To create an instance of the Internet Voice Connector in Exchange System Manager.

Step 4 Right-click the Voice Gateway and then click **Start**.

To remove a Voice Gateway

Step 1 Open the Exchange System Manager. (Click **Start > Programs > Microsoft Exchange > System Manager**.)

Step 2 Expand **Connections**.

Step 3 Right-click the Voice Gateway to be removed, and then click **Stop**.

Step 4 After the service stops, right-click the Voice Gateway to be removed, and click **Delete**.

Step 5 Expand **Servers** to locate the Mailbox Store that contains the Voice Gateway mailbox.

Step 6 Right-click **Mailboxes** and click **Run Cleanup Agent**.

Step 7 Right-click the Voice Gateway mailbox to be deleted and click **Purge**.

Step 8 Close and restart Exchange System Manager to see the changes.

Limitations

This section provides information about limitations associated with Digital Networking.

Setting Up Automated Attendant Transfers to Networked Cisco Unity Servers

The default registry settings for the automated attendant allow transfers 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 multiple Cisco Unity servers in the same dialing domain, perform the following procedure.

Caution Changing the wrong registry key or entering an incorrect value can cause the server to malfunction. Before you edit the registry, verify that you know how to restore it if a problem occurs. Note that a typical backup of the Cisco Unity server does not back up the registry. Refer to the "Restoring the Registry" Help topic in Regedit.exe or the "Restoring a Registry Key" Help topic in Regedt32.exe for additional information. If you have any questions about changing this registry key setting, contact Cisco TAC.

To set the PhoneTransfer registry key

Step 1 Start Regedit.

Step 2 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 3 Expand the following key:

```
HKEY_LOCAL_MACHINE\Software\ActiveVoice\Conversations\1.0\
```

```
PhoneTransfer
```

Step 4 Double-click **Auto Attendant AddressScope**.

Step 5 Enter **1** in the Edit DWORD Value box.

Step 6 Click **OK** and then close Regedit.

Note that to allow callers who use directory assistance to be able to locate and transfer to callers associated with other Cisco Unity servers in a dialing domain, you use a search options setting on the Directory Handler page in the Cisco Unity Administrator. For more information, see the "Directory Handler Search Options Settings" section on page 19-3.

Call Transfer Settings Unavailable

When calls are transferred from the automated attendant or directory assistance to subscribers not associated with the local server, the transfers are automatically handled by the phone system (release to switch)—rather than by Cisco Unity (supervised transfer)—even if these subscribers are set up for supervised transfers. In this case, the call screening, call holding, and announce features will not be available on these calls. For related information, see the "With a Single Directory" section on page 10-5 and the "Directory Handler Search Options Settings" section on page 19-3.

Subscriber ID Unavailable

When a subscriber calls another subscriber who is associated with a different Cisco Unity server, and if the call is forwarded to voice mail, Cisco Unity cannot identify who left the message. Instead, the message is handled as though it came from an unidentified caller.