White Paper: Installing Cisco Unity Voice Messaging in Anticipation of Migrating to Cisco Unity Unified Messaging

Published November 8, 2002

This white paper outlines the best practices for installing Cisco Unity Voice Messaging in preparation for future migration to Cisco Unity Unified Messaging, version 3.1(x). It discusses planning, design, and implementation.

Contents

Audience

This white paper is intended for use by certified Cisco Unity Systems Engineers who plan, design, and/or implement a Cisco Unity system that will be migrated from a voice messaging configuration to a unified messaging configuration.

Strategy Overview

Cisco Unity can be deployed in either a voice messaging or unified messaging configuration. Voice messaging configurations can be easily migrated to unified messaging configurations when the groundwork is appropriately set at the time of installation.

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This white paper addresses planning, design, and implementation (PDI) aspects of a voice messaging installation that will eventually be migrated to unified messaging, as well as discussing the steps of the migration. Several of the PDI steps for setting the groundwork for migration from voice messaging to unified messaging are detailed in existing Cisco Unity documentation. Therefore, in an effort to remain concise, cross-references to those documents are included in this white paper where applicable.

There are several voice messaging configurations that can be migrated to unified messaging and several different strategies for migration. This document focuses on two supported strategies. Strategies other than those addressed in this document require a reinstallation.

Supported Strategy 1

Install and integrate Cisco Unity voice messaging according to the *Cisco Unity Installation Guide*. Cisco Unity is installed in a stand-alone configuration as a Microsoft Windows 2000 domain controller.

When migrating to unified messaging, the required Cisco Unity account information and configuration data is migrated to a separate Cisco Unity unified messaging server. The existing voice messages are also migrated to the Microsoft Exchange message store(s).

Supported Strategy 2

Install and configure Cisco Unity as a voice messaging server within an existing Active Directory structure. Cisco Unity voice messages are stored on an existing Microsoft Exchange server in uniquely configured mailboxes that are hidden from the address list. The mailboxes are configured exclusively for voice messaging storage.

When migrating to unified messaging, the hidden mailboxes are merged with the e-mail mailboxes associated with each subscriber. Existing voice messages are migrated to the Exchange mailboxes manually. The migration process is achieved by using the Migrate Subscriber Data tool. Following the subscriber data migration, the hidden voice messaging accounts are manually deleted from Exchange, and all future voice messages are delivered to users' primary mailboxes.

Implementing Strategy 1

Presales and Procurement

Follow the presales and procurement models detailed on the IPT Steps to Success page at http://www.cisco.com/partner/WWChannels/technologies/IPT/index.html.

Planning

Voice Messaging Server Configuration Overview

- The Cisco Unity server handles only voice messages.
- When the Cisco Unity server is connected to the network:
  - Cisco Unity can be integrated with Cisco CallManager and/or a legacy PBX.

  - Cisco Unity administration can be performed over the network.
  - Subscribers have access to the Cisco Unity ActiveAssistant.
  - Exchange can be installed either on the Cisco Unity server or on a separate server.
  - The server has access to network utilities, such as virus checking and backup.
- Subscribers check messages by phone or by using the Cisco Unity Visual Messaging Interface.
- E-mail attributes, if any, and voice-mail attributes on subscriber accounts must be administered separately.

Licensing

Cisco Unity Voice Messaging can be purchased as a component or baseline system with voice messaging licenses. If it is anticipated that Cisco Unity Voice Messaging will be converted to Cisco Unity Unified Messaging in the future, unified messaging licenses may be purchased with the original software. Upgrade licenses can also be purchased from Cisco prior to the migration. Exchange Client Access Licenses (CALs) are required for all unified messaging users.

Note Combining voice messaging and unified messaging licensing on a single Cisco Unity server is NOT supported.

For further details on purchasing and licensing, refer to *Ordering Guidelines for Cisco Unity 3.1*, available at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_quick_reference_guide09186a0080093b5b.html.

Complete the Cisco Unity Pre-Installation Survey

The *Cisco Unity Professional Services Pre-Installation Survey* is available at http://www.cisco.com/partner/WWChannels/technologies/IPT/resources/doc/Pre_Installation_Survey-Unity_30.doc.

Develop a Cisco Unity Implementation Project Plan

A project plan template is available at http://www.cisco.com/partner/WWChannels/technologies/IPT/resources/pdf/Unity_Project_sample.pdf. The plan should be communicated to the project team.

Design

Voice Messaging Server

Confirm that the information gathered in the pre-installation survey is compatible with a supported Cisco Unity voice messaging configuration by using the *Cisco Unity Supported Platforms List*, available at http://www.cisco.com/warp/public/cc/pd/unco/un/prodlit/ucutp_st.htm.

Review the release notes for the version of Cisco Unity 3.1(x) that will be deployed. Release notes are available at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod_release_notes_list.html.

To configure a voice messaging system with more than 2,200 users, you must move the message store (Exchange) to another server. When configuring the message store on another server, you will have to have all user messages stored off of the Cisco Unity server.

For example, if you were deploying a voice messaging solution with 4,400 users, you would have two message store servers along with the Cisco Unity server and have 2,200 users per message store. In this configuration, the Exchange message stores would reside in the same domain as the Cisco Unity server, separate from the existing Exchange message stores used for mail services.

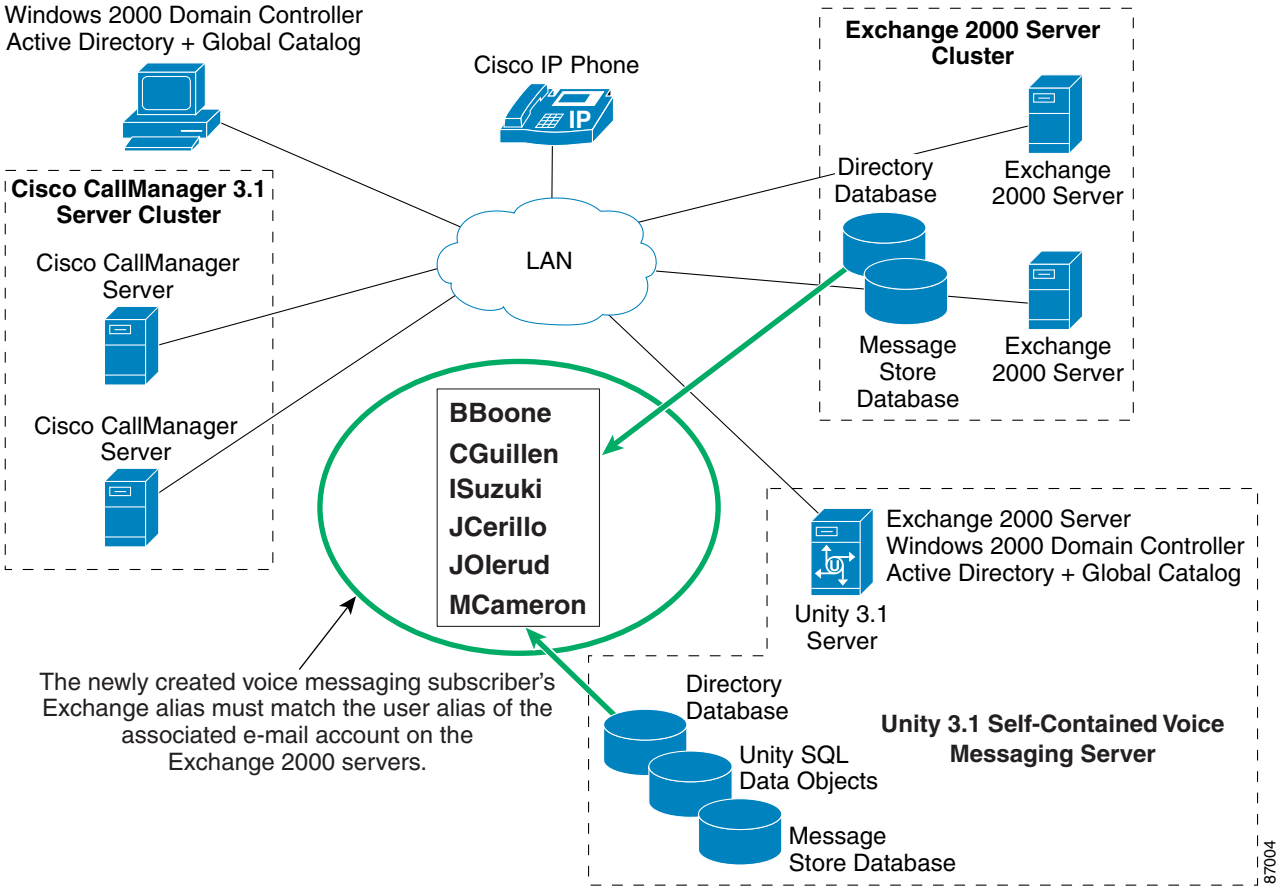
When deploying Cisco Unity with fewer than 2,200 users, Cisco Unity can serve as its own message store.

Installation

Install the Cisco Unity system on the LAN according to the *Cisco Unity Installation Guide*, which is available at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod_installation_guides_list.html. See also Figure 1.

Figure 1 Install Cisco Unity 3.1 as a Stand-alone Voice Messaging Server with Common Mail Aliases

Install Unity 3.1 as a stand-alone voice messaging server. Unity is its own domain controller and Exchange 2000 server. However, to prepare for future migration to unified messaging, the newly created voice messaging subscriber's Exchange alias must match the user alias of the associated e-mail account on the Exchange 2000 servers.



Creating Voice Messaging User Accounts

In anticipation of migration from Cisco Unity Voice Messaging to Cisco Unity Unified Messaging, it is imperative that the mail aliases of the voice messaging subscribers on the Cisco Unity voice messaging server are identical to the mail aliases of corresponding users already existing in Exchange.

During the migration process, voice messaging account information and voice messages will be mapped to existing Exchange mail accounts by using the Cisco Unity Disaster Recovery Tools. The simplest way to ensure that the mail aliases of Cisco Unity accounts will match existing Exchange accounts is to export the mail aliases from the Exchange server(s). Use the exported list to create new Cisco Unity voice messaging subscriber aliases via the Cisco Unity import utility using a CSV file.

Migration

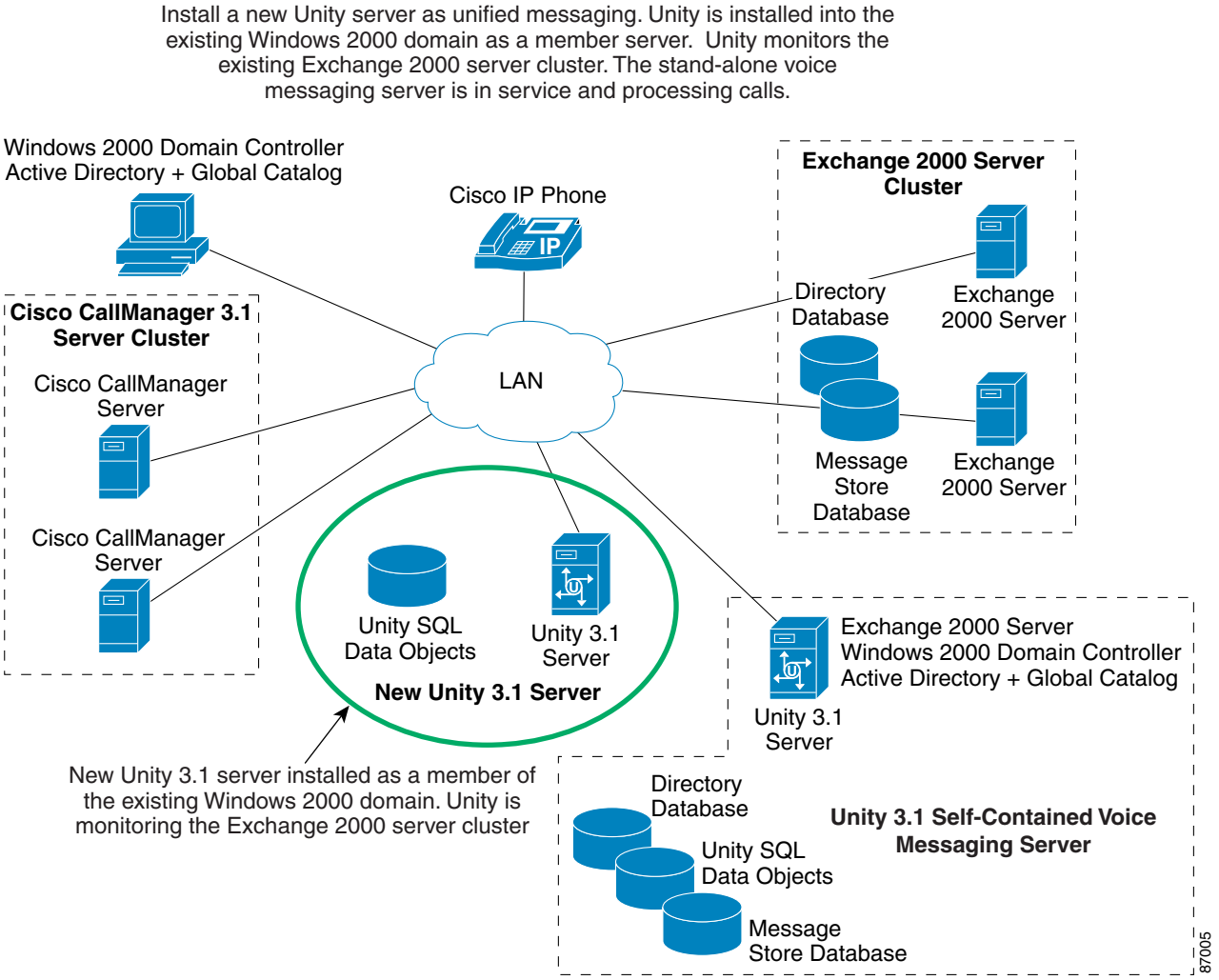
Unified Messaging Server Installation

- Remove the system key from the voice messaging server. Cisco Unity checks for the key on a regular 24-hour interval. Removing the key from the voice messaging server will not have an adverse effect on the performance of the voice messaging server. The key should be placed on the new unified messaging server for the installation. If required, unified messaging upgrade licenses may be applied to the system key during the unified messaging installation.
- Install and integrate the Cisco Unity unified messaging server according to the instructions for installing a unified messaging server in an existing Exchange environment in the *Cisco Unity Installation Guide*—up to the point of importing users. The Exchange version and configuration do not have to match the configuration from the voice messaging server. See also Figure 2.

Note You MUST install the EXACT same Cisco Unity version on the unified messaging server as was installed on the voice messaging server.

- Test the system. Tests should include: integration to the phone system, proper system administration functionality, call processing, message delivery, and message notification.

Figure 2 Install New Cisco Unity 3.1 Server as Member of Existing Windows 2000 Domain



Validate the Voice Messaging Installation

Run the DbWalker utility on the Cisco Unity voice messaging server to validate the integrity of the voice messaging installation. DbWalker analyzes the structural and linked integrity of the directory objects. The utility will fix some of the problems detected in the installation, while some problems will need to be resolved manually.

The utility is located in the Tools Depot (the icon is available on the Cisco Unity server desktop). For more information on DbWalker, refer to the utility Help. Download the latest version of DbWalker from the Cisco Unity Utilities page on the Cisco Software Center website at http://www.cisco.com/cgi-bin/tablebuild.pl/unity-util.

Exporting and Restoring Cisco Unity-Specific Data

Use the Disaster Recovery Tool (DiRT) Backup and DiRT Restore to back up Cisco Unity-specific data—including SQL databases, registry settings, greetings, recorded names, switch file configuration, routing rules, and subscriber passwords—and then to restore the information onto the Cisco Unity unified messaging server.

DiRT Backup includes an option to back up subscriber messages as well. The backup is integrated with the Windows scheduler and will write information, warning, and error messages to the Event log.

Restores can be performed onto a server of a different name also supporting different installation paths, partition configurations, domains, and Exchange versions.

The utilities are located in the Tools Depot (the icon is available on the Cisco Unity server desktop). Read the utility Help carefully and completely before using DiRT Backup and Restore.

Download the latest versions of DiRT Backup and DiRT Restore from the Cisco Unity Utilities page on the Cisco Software Center website at http://www.cisco.com/cgi-bin/tablebuild.pl/unity-util.

Caution You MUST restore to the EXACT same Cisco Unity version you backed up from.

See also Figure 3.

DiRT Backup Procedure

Step 1 Disable the voice messaging server from taking incoming calls.

Step 2 Determine a location for placement of backup files. Typically, these files are placed on a shared network drive location.

Step 3 Ensure that enough space has been allocated for the backup files. To estimate the size of the backup or make a best guess, consider the following:

- The backup includes all greeting and recorded name files, which can be large.
- Verify the size of the CommServer\StreamFiles directory to estimate the network drive space requirement.
- For estimating purposes, measure the size of the CommServer\UnityDB.BAK file as it directly corresponds to the SQL table backup generated by the DiRT utility.
- The shared network drive location must be large enough to accommodate the SQL table backup and other files generated by the DiRT utility.

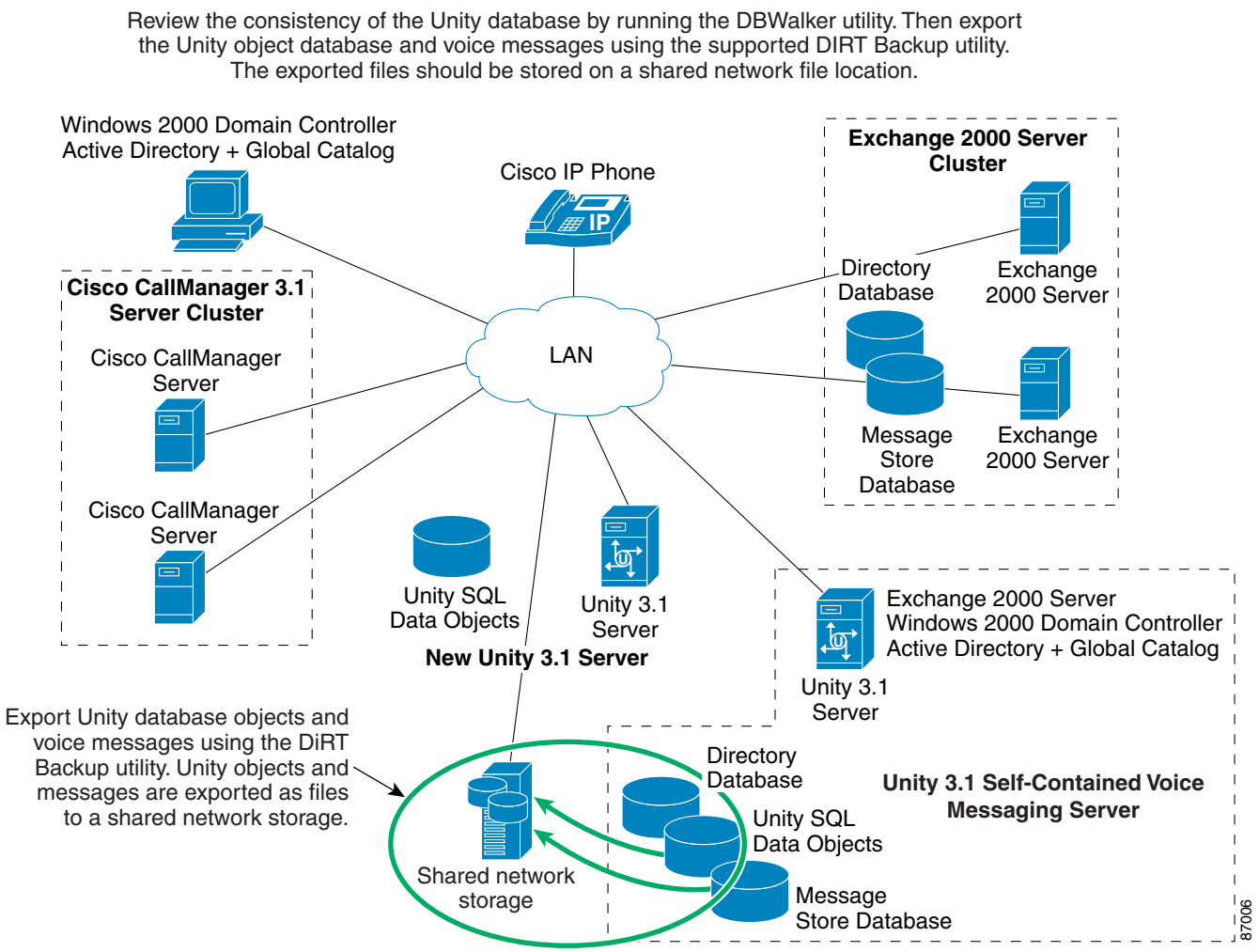
Note If you have selected to back up subscriber messages, a large storage space is required and it is difficult to estimate how much you will need. For more information, refer to the "A Word About Subscriber Messages" section in the utility Help.

Step 4 Start the DiRT Backup utility. For more information on the DiRT Backup procedure, see the utility Help.

Step 5 In the Disaster Recovery Backup dialog box, click **Browse** to point to the directory where you want the backup files written.

Step 6 Click **Backup**.

Figure 3 Export Cisco Unity Database Objects and Voice Messages with DiRT Backup



DiRT Restore Procedure

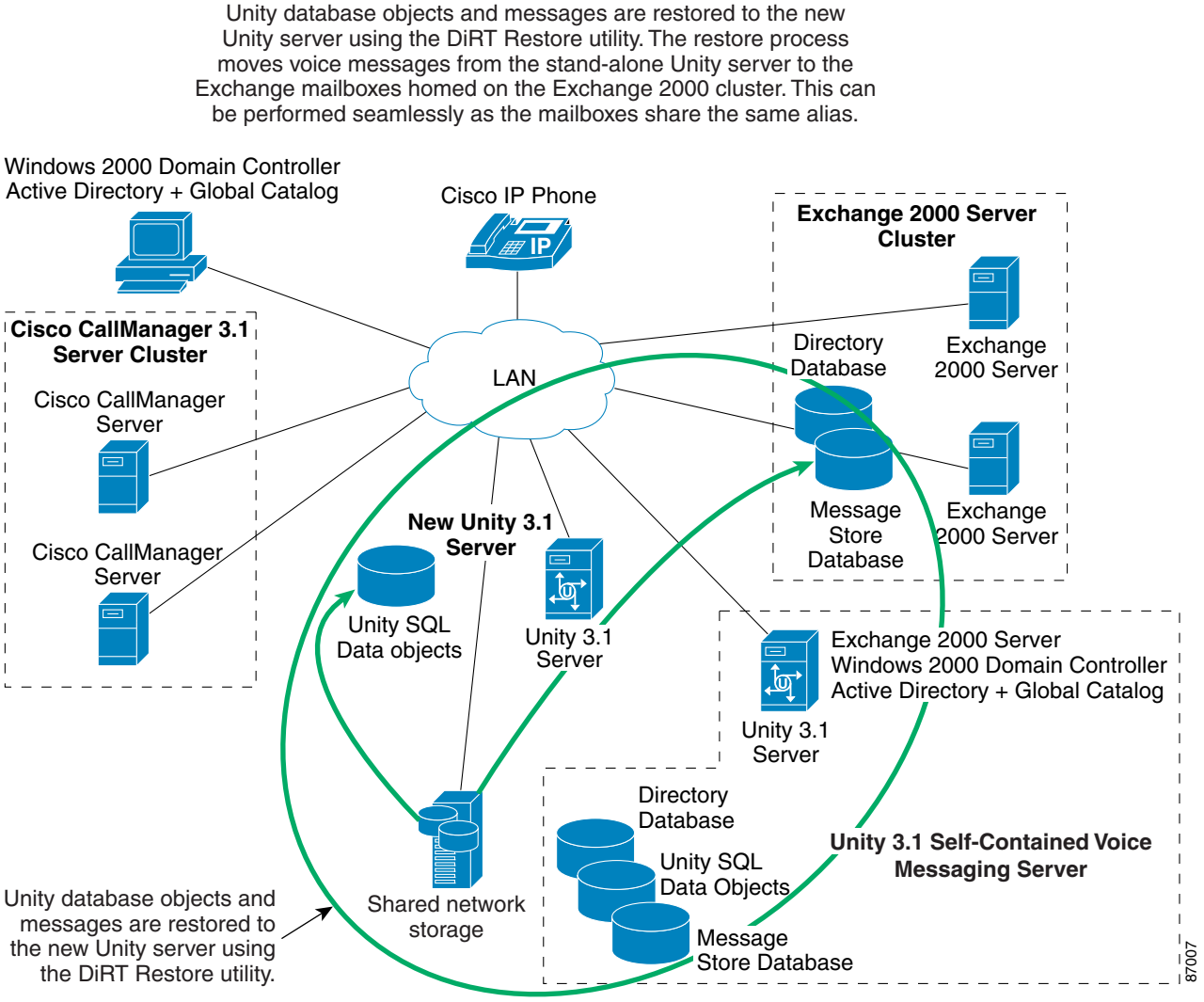
Step 1 Start the DiRT Restore utility. For information on the DiRT Restore procedure, see the utility Help. (Before launching, the utility will ensure that the local Cisco Unity server is a "clean" installation. This means that no new users, call handlers, interview handlers, etc. have been created or modified. If the system is not clean, the restore utility will display an error dialog and exit.)

Step 2 In the Disaster Recovery Restore dialog box, click **Browse** to point to the directory where you stored backup files with the DiRT Backup utility.

When a directory is selected, the Restore utility ensures that the files it needs are available and that the version backed up matches exactly the version installed on the local server. If an essential file is missing or the versions do not match, an error dialog will appear and the Restore from Backup button will remain disabled.

Step 3 Click **Restore from Backup**. The amount of time required to restore depends on the size of the files that were backed up. Please be patient during the restore procedure. See also Figure 4.

Figure 4 Database Objects and Messages Are Restored to the Cisco Unity Server with DiRT Restore



Note If the DiRT Backup and Restore utilities were executed without previously matching the voice mail aliases to the e-mail aliases, run the Migrate Subscriber Data tool following the DiRT Restore procedure. The Migrate Subscriber Data tool allows system administrators to merge voice mail accounts with e-mail accounts with mismatching aliases. The tool is located in the Tools Depot (the icon is available on the Cisco Unity server desktop). For information on the Migrate Subscriber Data tool, refer to the tool Help.

Validate the Unified Messaging Installation

Run the DBWalker utility on the new Cisco Unity unified messaging server to validate the integrity of the unified messaging installation. The utility analyzes the structural and linked integrity of the directory objects. DbWalker will fix some of the problems detected in the installation, while some problems will need to be resolved manually.

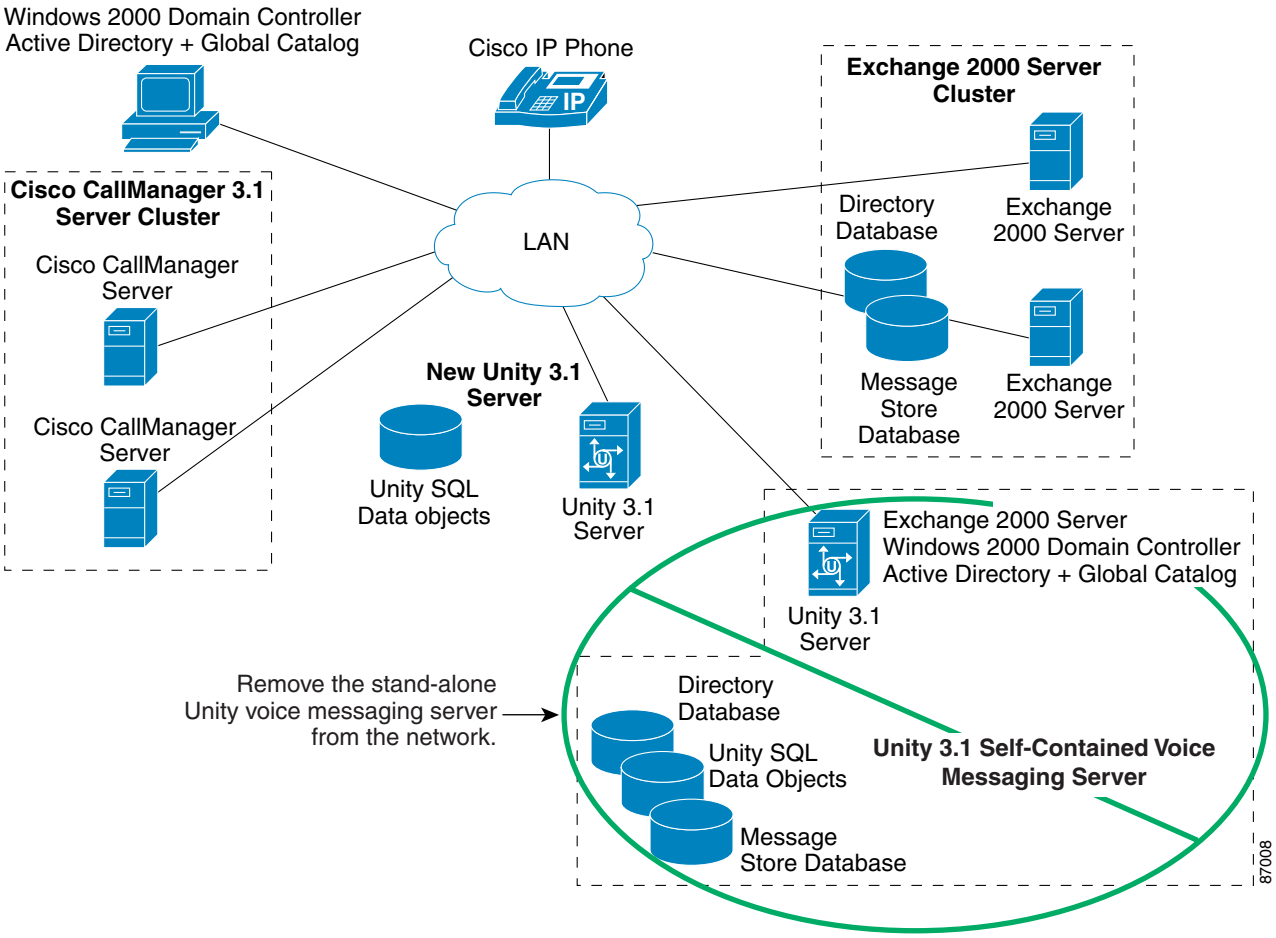
The utility is located in the Tools Depot (the icon is available on the Cisco Unity server desktop). For more information on DbWalker, refer to the utility Help. Download the latest version of DbWalker from the Cisco Unity Utilities page on the Cisco Software Center website at http://www.cisco.com/cgi-bin/tablebuild.pl/unity-util.

Disconnect the Cisco Unity Voice Messaging Server from the LAN

Physically disconnect the voice messaging server from the local area network. See Figure 5.

Figure 5 Stand-alone Cisco Unity Voice Messaging Server Is Taken Out of Service

The stand-alone voice messaging server is removed from the network and taken out of service.



Implementing Strategy 2

Presales and Procurement

Follow the presales and procurement models detailed on the IPT Steps to Success page at http://www.cisco.com/partner/WWChannels/technologies/IPT/index.html.

Planning

Voice Messaging Server in an Existing Exchange Site Overview

Although this a voice messaging configuration, it is technically similar to a unified messaging deployment. Therefore, Cisco requires that anyone installing a Cisco Unity voice messaging server in an existing Exchange site be a Microsoft Certified System Engineer. In this configuration, the Cisco Unity server is connected to Exchange servers in the same site or in multiple sites.

- The Cisco Unity server handles only voice messages. Messages are stored on other Exchange servers.
- The Cisco Unity server is connected to the network, so it has access to Active Directory and to network utilities, such as virus checking and backup.
- Exchange can be installed either on the Cisco Unity server or on a separate server.
- Subscribers check messages by using the phone or an e-mail client.
- Cisco Unity administration may be performed over the network.
- Subscribers have access to the Cisco Unity ActiveAssistant.
- Voice-mail and e-mail attributes on subscriber accounts may be administered from a single location by using the Cisco Unity Administrator.

Licensing

Cisco Unity Voice Messaging can be purchased as a component or baseline system with voice messaging licenses. Because combining voice messaging and unified messaging licenses on a single Cisco Unity server is not supported, if any users on the Cisco Unity server are going to be immediately using unified messaging, then all the licenses on the Cisco Unity server must be licensed for unified messaging.

A second Cisco Unity server may also be deployed, so there is one Cisco Unity unified messaging server and one Cisco Unity voice messaging server networked together. In most Strategy 2 cases, Cisco Unity voice messaging is deployed with all voice messaging users, and the associated Exchange accounts are created in an existing Exchange environment.

Alternately, if it is anticipated that all voice messaging users on the Cisco Unity server will be converted to unified messaging in the future, unified messaging licenses may be purchased with the original software and you would proceed with a unified messaging deployment.

When migrating from voice messaging to unified messaging, voice messaging-to-unified messaging upgrade licenses must be purchased from Cisco prior to the migration.

For further details on purchasing and licensing, refer to *Ordering Guidelines for Cisco Unity 3.1* at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_quick_reference_guide09186a0080093b5b.html.

Complete the Cisco Unity Pre-Installation Survey

The *Cisco Unity Professional Services Pre-Installation Survey* is available at http://www.cisco.com/partner/WWChannels/technologies/IPT/resources/doc/Pre_Installation_Survey-Unity_30.doc.

Develop and Publish a Cisco Unity Implementation Project Plan

A project plan template is available at http://www.cisco.com/partner/WWChannels/technologies/IPT/resources/pdf/Unity_Project_sample.pdf. The plan should be communicated to the project team.

Design

Voice Messaging Server

Confirm that the information gathered in the pre-installation survey is compatible with a supported Cisco Unity voice messaging configuration by using the *Cisco Unity Supported Platforms List*, available at http://www.cisco.com/warp/public/cc/pd/unco/un/prodlit/ucutp_st.htm.

Review the release notes for the version of Cisco Unity 3.1(x) that will be deployed. Release notes are available at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/prod_release_notes_list.html.

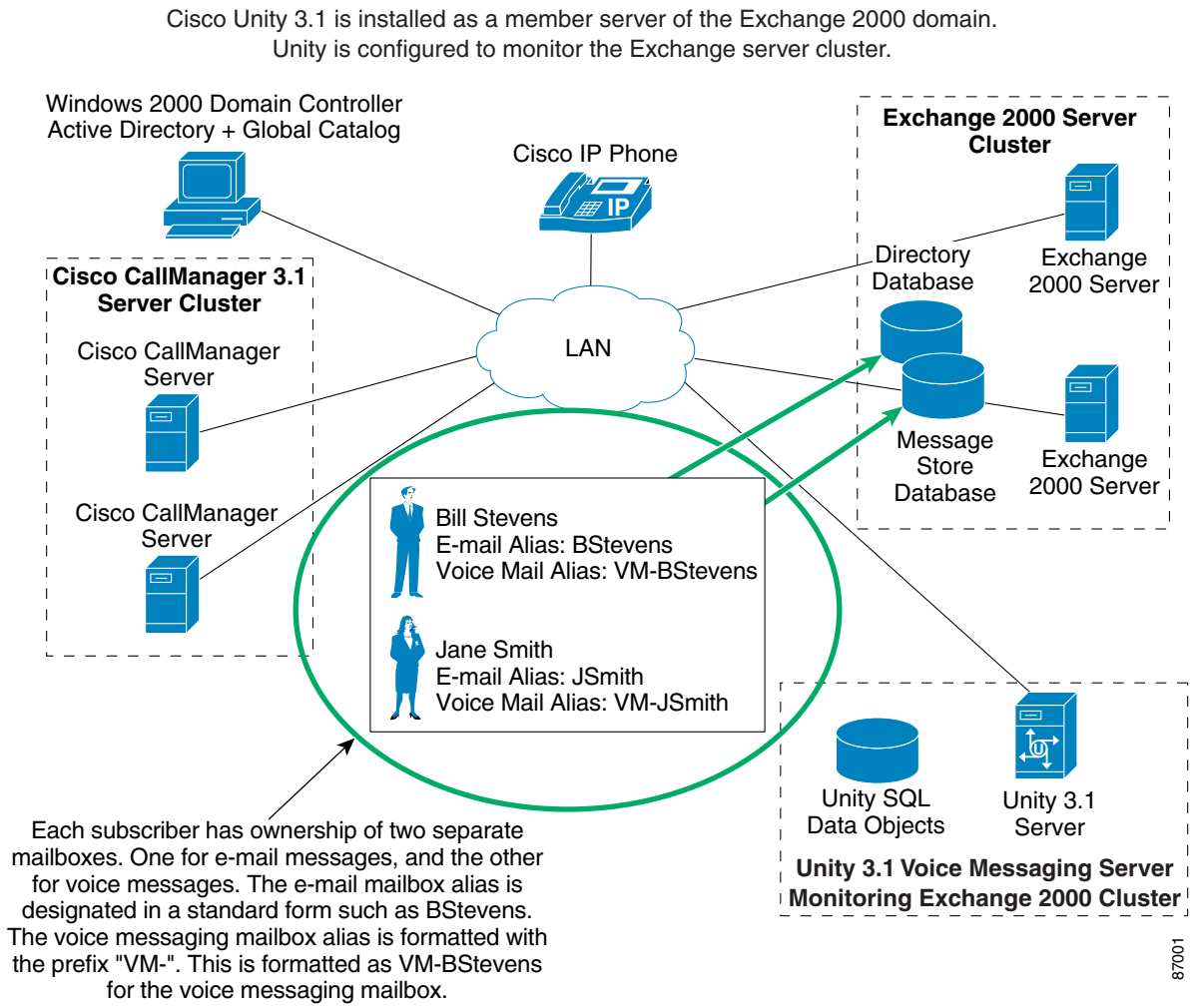
Installation

Install Cisco Unity Voice Messaging into an existing Exchange site where unique Exchange voice messaging user accounts are hidden from the Exchange address book.

Cisco Unity Voice Messaging is installed into an existing Active Directory structure with user mailboxes stored on existing Exchange server(s). Voice messaging users will have secondary mailboxes on the existing Exchange servers that are reserved for voice messages only. These mailboxes will have the prefix “vm-” (for example, vm-BStevens) that distinguishes them from their primary Exchange mailboxes. (The “vm” represents voice messaging only accounts.) Voice messaging mailboxes will be hidden from the corporate directory to ensure that only voice messages are delivered to those mailboxes.

At the point of migration, the voice messaging mailboxes and their messages will be merged with the primary user mailboxes by using the Migrate Subscriber Data tool. See Figure 6.

Figure 6 Install Cisco Unity 3.1 Server as a Member Server of Windows 2000 Domain with Hidden Mailboxes



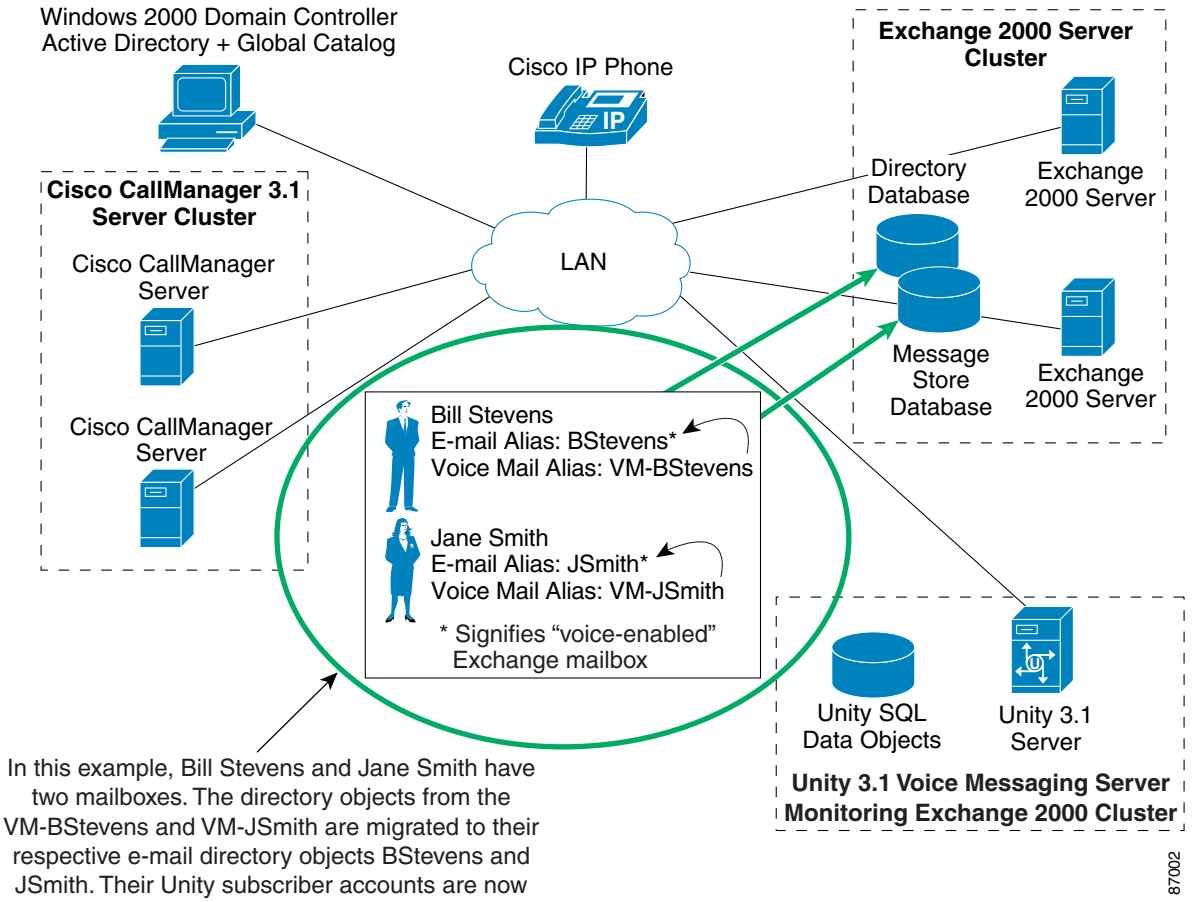
Note Cisco Unity voice messages are stored in Exchange as WAV-file attachments, which significantly impacts the message size. Therefore, mailbox storage limits should be sized to accommodate the increased storage requirements. The WAV file audio codec can be changed to G.729a in order to minimize storage impact.

Migration

Upon upgrading Cisco Unity voice messaging licenses to Cisco Unity unified messaging licenses, migration of voice messaging accounts to unified messaging can be performed at the discretion of the administrator, by using the Migrate Subscriber Data tool. The tool does not move messages. Messages will have to be migrated manually. See Figure 7.

Figure 7 Migrate Subscriber Data Tool Merges Exchange Mailbox Directory Contents

Use the Migrate Subscriber Data tool to merge the Exchange mailbox directory contents. The Cisco Unity subscriber is now associated with the Exchange mailbox that serves e-mail and voice mail. Note: Only directory objects are migrated to the new UM mailbox and not voice messages. Existing voice messages need to be reviewed and deleted before migration begins.



In this example, Bill Stevens and Jane Smith have two mailboxes. The directory objects from the VM-BStevens and VM-JSmith are migrated to their respective e-mail directory objects BStevens and JSmith. Their Unity subscriber accounts are now associated with the single UM-enabled Exchange mailbox. The old "VM-" mailboxes can be manually removed from Exchange/Active Directory.

Example

Two directory accounts have been created for each employee. One account is used for voice messages (vm-BStevens), and the other is used for e-mail messages (BStevens).

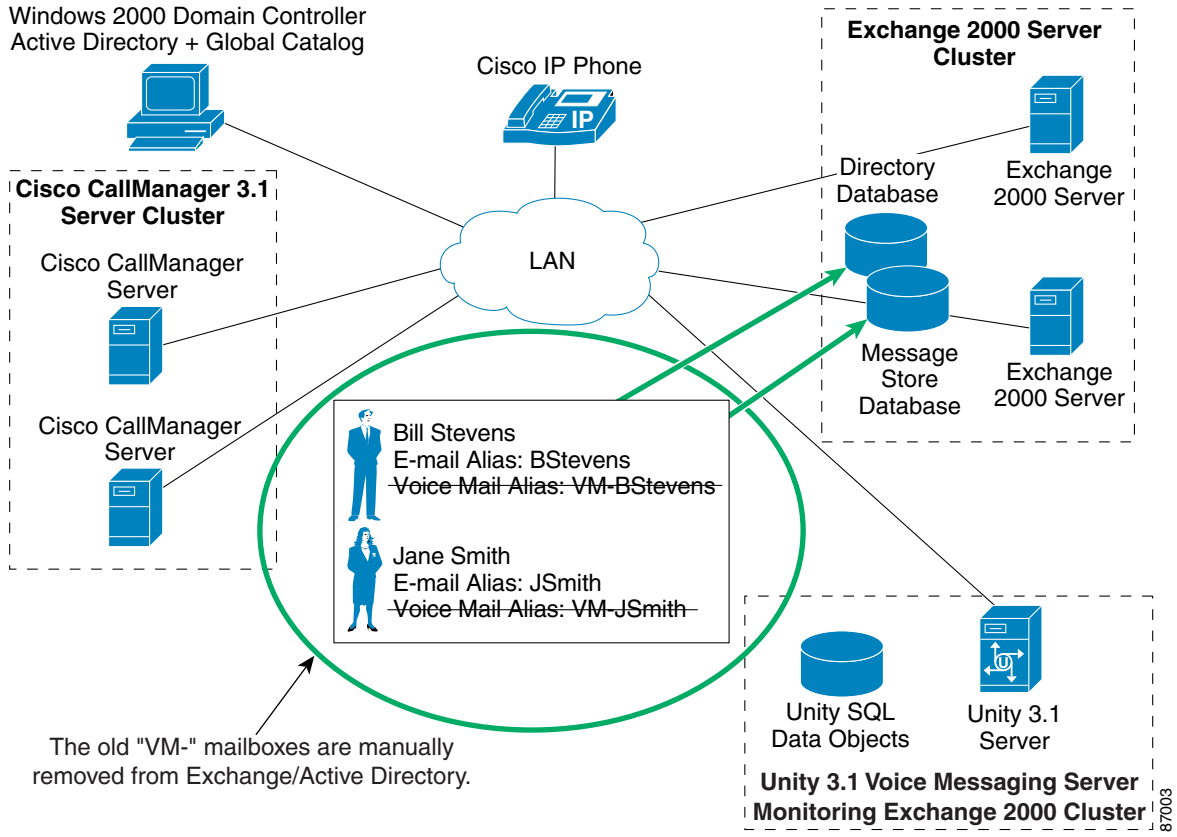
The administrator has determined that Bill should be migrated to unified messaging. The administrator opens the Migrate Subscriber Data tool, and selects Bill's Cisco Unity Subscriber account and his Mail User account, and clicks the Migrate Subscriber Data button. The result is that Bill's subscriber record is modified; his mail user account directory ID is copied over his Cisco Unity subscriber directory ID. His alias, display name, and first and last names are also transferred from his mail user account to his Cisco Unity subscriber record. His primary call handler alias is modified to match his mail user account alias.

These modifications take place within the Cisco Unity database, not the directory. Bill's previous directory account is modified to remove the Cisco Unity-specific settings, but the Cisco Unity subscriber directory account is not deleted.

Upon exiting the Migrate Subscriber Data tool, the Cisco Unity database is synchronized with the directory. When the directory synchronization is complete, any new voice messages Bill receives will be delivered to his mail user account.

After the migration is completed, the administrator manually removes the voice messaging mailbox from Exchange/Active Directory. See Figure 8.

Figure 8 Manually Remove Old "vm-" Mailboxes from Exchange/Active Directory



Requirements/Special Notes About the Migrate Subscriber Data Tool

- The Migrate Subscriber Data tool can be used only with Cisco Unity version 3.1(1) or later.
- The Migrate Subscriber Data tool must be run from a Cisco Unity server.
- The Migrate Subscriber Data tool will delete directory contacts only if the Delete Contacts from Directory option is enabled.
- The Migrate Subscriber Data tool does not move messages between accounts.

Using the Migrate Subscriber Data Tool

The Migrate Subscriber Data tool allows the Cisco Unity administrator to migrate subscriber settings from a Cisco Unity subscriber account to a mail user account. The tool allows all of the subscriber settings—such as recorded name, greetings, and private distribution lists—to be preserved, because these Cisco Unity-specific attributes are added to the mail user account attributes.

The Migrate Subscriber Data tool is located in the Tools Depot (the icon is available on the Cisco Unity server desktop). For more information on the tool, refer to the tool Help. Download the latest version of the Migrate Subscriber Data tool from the Cisco Unity Utilities page on the Cisco Software Center website at http://www.cisco.com/cgi-bin/tablebuild.pl/unity-util.

Migrating Subscriber Data Procedure

Step 1 Launch the Migrate Subscriber Data tool. The tool determines the type of mail store that Cisco Unity uses and presents a list of e-mail servers it finds on the network.

Step 2 Choose the server or domain/server to which you want to migrate subscriber data.

Step 3 For each subscriber, select the corresponding voice messaging and e-mail mailboxes from the two lists:

Cisco Unity Subscribers	Select the subscriber voice messaging account from the list of all Cisco Unity subscribers, on the left.
Mail Users	Select the mail user account from the list of all mail users, on the right.

Step 4 Click **Migrate Subscriber Data**.

The Cisco Unity subscriber data is pointed to the mail user account, and the existing Cisco Unity subscriber account attributes are removed from the subscriber directory account.

Step 5 Repeat Steps 3 and 4 as needed.

Note that the Migrate Subscriber Data tool removes the accounts from both lists as you work, so that you do not accidentally select the same account again.

Step 6 If you are migrating AMIS, Internet, or Bridge subscribers, on the Options menu, click **Delete Contacts from Directory**.

The option deletes the applicable contacts from the directory after you have migrated the subscriber settings to another account. This is usually a safe option because these types of subscribers do not have mail stores.

Step 7 To refresh the lists, on the File menu, click **Synch Directory and Refresh** (or press the **F5** key).

As soon as the database is synchronized with the directory, new messages for the migrated subscribers will be delivered to the mail users' mail stores.

Directory Synchronization

The process of migrating subscriber data from an existing Cisco Unity subscriber to a mail user involves updating the directory. The process can take some time, which is why the Migrate Subscriber Data tool does this synchronization only when the tool is exited.

Until directory synchronization is complete, any migrated subscribers will continue to receive voice messages in their original mail store or e-mail address. The directory synchronization process also must happen before public distribution list memberships are updated. In addition, the directory changes will not be visible in the directory until synchronization is complete.

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