Using IMAP4 to Access Voice Messages in Cisco Unity System

This document is intended for Cisco® and partner systems engineers with customers who want desktop messaging but do not want to have the Cisco Unity® system connected to their Microsoft Active Directory and Exchange environment. This document details the steps for configuring Internet Mail Access Protocol (IMAP) on the Cisco Unity Message Store and the Microsoft Outlook Client. It also details how users can play, reply, and send voicemail messages from their Outlook Client when the Cisco View Mail for Outlook (VMO) plug-in is installed.

Introduction

This document explains how Cisco Unity system users can access voice messages using IMAP4 when the Cisco Unity system is installed in a multiserver voicemail-only configuration. The information and steps apply to Cisco Unity Versions 4.0(0) and higher.

The Cisco Unity system can be installed in a voicemail-only configuration or a unified messaging configuration. In a unified messaging configuration, the Cisco Unity system can support subscribers who use Microsoft Exchange 5.5, 2000, or 2003 or Lotus Domino Versions 5.0 and higher. In a voice messaging-only configuration, the Cisco Unity system uses Microsoft Exchange 2000 as its message store.

When the Cisco Unity system is installed in a unified messaging configuration, subscribers can access their voice messages, fax messages, and e-mail using the telephone through the Cisco Unity telephone user interface (TUI); or using Microsoft Outlook if they are using MS Exchange. If the subscribers are using Lotus Domino as a message store, they can access their messages using Lotus Notes with the Domino Unified Communications services.

In a voice messaging-only configuration, Cisco Unity subscribers can access their messages using the TUI or the Cisco Unity Inbox, which is a Web interface accessible through the Cisco Personal Communications Assistant (CiscoPCA) Web service. The Cisco Unity Inbox is a licensed feature in the Cisco Unity system.

This document explains how these voice messaging-only subscribers can use their e-mail clients to access their Cisco Unity voice messages by configuring their e-mail clients to use IMAP4.

Figure 1 shows this configuration.
Cisco Unity Configurations

The correct Cisco Unity configuration must be used to access voicemail messages using e-mail clients. Because the Cisco Unity system can be installed in both single- and multiserver configurations, it is important to understand both configurations.

Single-Server Configuration
- Cisco Unity Server (includes the following):
  - Cisco Unity software
  - Microsoft Active Directory
  - Microsoft Exchange

Multiserver Configuration
- Cisco Unity server
  - Cisco Unity software
  - Microsoft Active Directory
- Microsoft Exchange server(s)

Support Statement
Cisco supports the server-side portion of the IMAP solution only; Cisco neither provides nor supports IMAP client software. Cisco provides all testing, qualification, and configuration documentation of IMAP client software as a courtesy. For IMAP client support, contact the software vendor or whoever supports the IMAP client software for your organization.

Server Sizing
The Cisco Unity system can be deployed as a single-server configuration or in a multiserver configuration where the message stores are located on a separate server from the Cisco Unity server application. The servers listed in Table 1 depict the number of supported IMAP clients for each platform overlay.
Table 1. Current Shipping Servers

<table>
<thead>
<tr>
<th>Description</th>
<th>Platform Overlay 1</th>
<th>Platform Overlay 2</th>
<th>Platform Overlay 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Single processor</td>
<td>Single processor</td>
<td>Dual processors</td>
</tr>
<tr>
<td></td>
<td>1-GB RAM</td>
<td>2-GB RAM</td>
<td>4-GB RAM</td>
</tr>
<tr>
<td></td>
<td>One 80-GB Serial Advanced Technology Attachment (SATA) hard drive or two 80-GB SATA hard drives</td>
<td>Two 72-GB SCSI hard drives</td>
<td>HP DL380-G4 dual processor</td>
</tr>
<tr>
<td></td>
<td>Redundant Array of Independent Disks (RAID) 1</td>
<td>RAID 1</td>
<td>IBM x346 dual processor</td>
</tr>
<tr>
<td></td>
<td>HP DL320-G3</td>
<td>HP DL380-G4 single processor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IBM x206</td>
<td>IBM x346 single processor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IBM x306</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cisco part number</td>
<td>MCS-7815-I1-ECS1</td>
<td>MCS-7835-H1-ECS1</td>
<td>MCS-7845-H1-ECS1</td>
</tr>
<tr>
<td></td>
<td>MCS-7825-H1-ECS1</td>
<td>MCS-7835-I1-ECS1</td>
<td>MCS-7845-I1-ECS1</td>
</tr>
<tr>
<td></td>
<td>MCS-7825-I1-ECS1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voicemail users</td>
<td>1000</td>
<td>2000</td>
<td>4000</td>
</tr>
<tr>
<td>IMAP clients off-box</td>
<td>500</td>
<td>1200</td>
<td>2500 (3 x RAID 1 configuration only)</td>
</tr>
<tr>
<td>Ports</td>
<td>24</td>
<td>48</td>
<td>72</td>
</tr>
<tr>
<td>Message-store users</td>
<td>1000</td>
<td>2000</td>
<td>4000 (3 x RAID 1 configuration only)</td>
</tr>
</tbody>
</table>

Requirements

The following requirements must be met for the Cisco Unity system to support IMAP4 access to the Cisco Unity Message Store for the retrieval of voice messaging:

**Microsoft Outlook**

**Server Requirements**

- Cisco Unity Version 4.0 or later
- Microsoft Exchange 2000 only
  - Off-box message store
- IMAP configured on the message-store server
- Rich-text format enabled on the message-store server
- One UNITY-VM-USR per subscriber
- One UNITY-CLO-USR per IMAP subscriber

**Client Requirements**

- Valid Cisco Unity voicemail-only account
- Microsoft Outlook 2000 or later
- Cisco VMO 4.0.2 or later
- Address book configured for voicemail directory access

**Generic Access**

**Server Requirements**

- Cisco Unity Version 4.0 or later
- Microsoft Exchange 2000 only
  - Off-box message store
- IMAP configured on the message-store server
- One UNITY-VM-USR per subscriber
- One UNITY-CL-USR per IMAP subscriber

Client Requirements
- Valid Cisco Unity voicemail-only account
- IMAP4-compatible client

Note: When using generic IMAP4 client, users can only view, play, and delete voicemail messages. If a user replies to a voicemail message with text, that message will not be delivered to the recipient. If the user forwards the voicemail to an e-mail account, the message will arrive as an e-mail with a .wav file attachment.

Cisco Unity System Installed in a Multiserver Voice Messaging-Only Configuration
In a multiserver configuration, Microsoft Exchange servers are dedicated as Cisco Unity Message Store servers to provide the voicemail storage for Cisco Unity subscribers. A multiserver voice messaging-only configuration for the Cisco Unity system can be configured in many ways.

It is important to note that regardless of how the Cisco Unity mail-store servers (Microsoft Exchange 2000) are configured, IMAP4 must be enabled and configured on each of these servers. For more information about configuring dedicated Cisco Unity mail-store servers, consult the Cisco Unity Design Guide at: http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_implementation_design_guide_book09186a008022f63b.html.

Configuring IMAP4 for Cisco Vmo
Server Configuration
IMAP Configured on the Cisco Unity Message Store (Microsoft Exchange 2000 Runtime Edition)

To use IMAP4 to access Cisco Unity voicemail messages, some configuration changes are required. This section details the required configuration changes and gives some additional Cisco "recommended" configuration changes.

The first required configuration change is to enable the "Use Exchange Rich Text Format" option. To enable this option, access the Microsoft Exchange System Manager tool and perform the following steps:

Step 1. Open the Microsoft Exchange System Manager, and choose Start> Programs> Microsoft Exchange> System Manager.

Step 2. In the left pane of the System Manager, choose Servers, and then expand the server that is configured for IMAP4; then choose Protocols> IMAP4> Default IMAP4 Virtual Server.

Step 3. Right click and choose Properties> Message Format, as shown in Figure 2.
Step 4. Check Use Exchange rich-text format, as shown in Figure 3.

Step 5. Click OK.

When the Use Exchange rich-text format option is checked, the IMAP protocol preserves the Messaging Application Programming Interface (MAPI) message class properties that uniquely identify the Cisco Unity voice message from a standard e-mail with a .wav attachment. The message class for an e-mail message is IPM.Note, and the message class for a Cisco Unity voice message is IPM.Note.Voice.Unity.
By preserving the message class this way, the Cisco VMO plug-in for Microsoft Outlook can identify the message as voicemail. Users can identify a voice message by the voicemail icon when the Cisco VMO plug-in is installed:

**Recommended Changes**
Cisco recommends a few additional configuration changes to improve the IMAP solution. You should enable Fast Message Retrieval. By default Microsoft Exchange calculates the exact message size for every message. When the Fast Message Retrieval option is enabled, Exchange only approximates the message size, allowing faster message retrieval. To enable this selection, do the following:

**Step 1.** Choose Start> Programs> Microsoft Exchange> System Manager.

**Step 2.** In the left pane of the System Manager, choose Servers, and then expand the server that is configured for IMAP4; choose Protocols> IMAP4> Default IMAP4 Virtual Server.

**Step 3.** Right click and choose Properties, and check Enable fast message retrieval.

**Step 4.** Check Limited number of connections to: (licensed number of UNITY-CLO-USR), as shown in Figure 4.

**Step 5.** Click OK.

*Figure 4.* Selecting the Limited Number of Connections

In order to provide a higher level of security, Cisco recommends that you change the default authentication from Basic Authentication to Integrated Windows Authentication by doing the following:

**Step 1.** Choose Start> Programs> Microsoft Exchange> System Manager.

**Step 2.** In the left pane of the System Manager, choose Servers, and then expand the server that is configured for IMAP4; choose Protocols> IMAP4> Default IMAP4 Virtual Server.
Step 3. Right click and choose Properties>Access; uncheck Basic authentication, and check Integrated Windows Authentication, as shown in Figure 5.

Step 4. Click OK.

**Figure 5.** Deselecting Basic Authentication and Selecting Integrated Windows Authentication

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Cisco Unity Voicemail Client Access Compatibility Matrix

Table 2 lists the supported combinations of desktop clients, desktop operating systems, and the Cisco Unity system.

**Table 2.** Combinations of Desktop Clients, Desktop Operating Systems, and Cisco Unity System

<table>
<thead>
<tr>
<th>Cisco Unity Unified Messaging with Microsoft Exchange</th>
<th>Cisco Unity IMAP ViewMail for Microsoft Outlook Workstation</th>
<th>Operating System on Workstation</th>
<th>Messaging Client on Workstation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0(0) or later</td>
<td>4.0(2) or later</td>
<td>• Windows 2003</td>
<td>• Outlook 2003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Windows XP</td>
<td>• Outlook 2002 (XP)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Windows 2000</td>
<td>• Outlook 2000</td>
</tr>
</tbody>
</table>

**Client Configuration**

This section discusses the configurations of different clients, beginning with Microsoft Outlook. The other clients are grouped under the "generic client", which is a client that has common IMAP4 support but more limited functions.

**Microsoft Outlook**

On the Microsoft Outlook desktop client, you need to configure an IMAP4 connection to the Cisco Unity Message Store server where the user's message-store account resides. For each Outlook client, perform the steps as follows:

Step 1. Open Outlook and choose Tools>E-mail Accounts, as shown in Figure 6.
Figure 6. Selecting E-mail Accounts from Microsoft Outlook

Step 2. Select Add new e-mail account; then click Next, as shown in Figure 7.

Figure 7. Selecting Add a New E-Mail Account

Step 3. Select IMAP and then click Next, as displayed in Figure 8.
Step 4. The Settings window will appear, and you need to fill out the requested information. This information includes the User, Server, and Logon Information, as shown in Figure 9.

Step 5. To change the display name for the mail account, select More Settings. Under Mail Account, type the name by which you want to refer to this account, as displayed in Figure 10; click OK.
Step 6. You will then be returned to the E-mail Accounts selection window. From there click the Finish button, as shown in Figure 11.

Figure 11. Selecting Finish when All Information Is Added in the Wizard

Configuring the Voicemail IMAP Directory

Another option available to Cisco Unity subscribers who use their e-mail client to access voice messages is to configure the directory for the IMAP connection, which is basically the global address list or address book provided by the Active Directory implementation that is a part of the Cisco Unity voice messaging-only configuration. In order to add the address book for the IMAP connection, do the following:
Step 1. Open Outlook and choose Tools > E-mail Accounts; select Add a new directory or address book, and click Next, as shown in Figure 12. The Cisco Unity system can be deployed as a single-server configuration, in which case the Cisco Unity server will have domain controller and global catalog server roles on the server. In a multiserver configuration the domain controller and global catalog server roles may be on another server in the network. In those cases you will need to identify the global catalog server used for the voicemail network in steps 3 and 4 that follow for Lightweight Directory Access Protocol (LDAP) directory service.

Figure 12. Adding a New Directory or Address Book

Step 2. Select Internet Directory Service (LDAP); then click Next, as shown in Figure 13.

Figure 13. Selecting Internet Directory Service

Step 3. Fill in the server and logon information displayed in Figure 14.

Figure 14.  Filling In Directory Service Information

Step 5.  Select More Settings to modify the directory display name for visual reference, as shown in Figure 15.

Figure 15.  Modifying the Display Name

Step 6.  Select the Search tab; Cisco recommends that you change the search timeout default settings from 60 seconds to 30 seconds and change the maximum number of entries to return after a successful search to 20.

Cisco also recommends that you define the search base for quicker response from the LDAP directory.
To verify the available address lists to search or the order of search when sending new e-mail or voicemail messages from Outlook, do the following:

**Step 1.** Open Outlook and choose Tools>Address Book>.

**Step 2.** From the address book, choose Tools>Options, as shown in Figure 17.

**Figure 17.** Selecting Options from the Tools Drop-Down Menu in the Address Book

**Step 3.** Then adjust the order to check addresses, as shown in Figure 18.
Testing Your IMAP Configuration

You can test the IMAP inbox now by leaving yourself a voicemail message through the TUI. The message should appear in the newly created inbox in the Microsoft Outlook client. The voicemail message will appear as an e-mail with a .wav attachment.

Note: The Cisco Unity system can use different audio codecs in which to record and play back voicemail messages. The default codec used by the Cisco Unity system is the G.711 codec, which is available on most of the more popular media players. However, the Cisco Unity system also can be configured to use the G.729a codec to record and play back voicemail messages. This codec is not typically available in the more popular media players. It is available through the Cisco VMO plug-in but otherwise must be licensed in order to use it.

Cisco View Mail for Outlook

Now that the message-store server is configured and the desktop client is set up and working, you can install the Cisco VMO plug-in, which allows you to manage your voicemail messages from your Outlook client. Functions include:

- VCR-style controls for playback and record
- Ability to create a voicemail message
- Ability to forward a voicemail message
- Ability to reply to a voicemail message
- Ability to control the playback device to use (sound card or phone)
- Use of folders to archive and manage voicemail messages


To install the Cisco VMO on the Microsoft Outlook client, do the following:

Step 1. On Cisco Unity DVD 1 or CD 2, or from the network folder to which you copied the View Mail files, browse to the View Mail directory.
Step 2. In the View Mail directory, browse to the applicable folder (the directory has a different folder for each supported language).

Step 3. Double-click the ViewMail.msi file.

Step 4. Follow the on-screen prompts to complete the installation.

**Using Cisco VMO**

To create a voicemail message using Cisco VMO, do the following:

Step 1. From Outlook click the View Mail icon on the toolbar. You also can select Action-New Voice Message, as shown in Figure 19.

**Figure 19. Selecting New Voice Message**

![Image of selecting new voice message](image)

When using Cisco VMO for IMAP, it is critical that you select the correct address for the recipient. Failure to do so will cause voicemail messages to be stored in your e-mail inbox.

Step 2. Choose To...; under Show Names from the:, and select the voicemail-defined address book, as shown in Figure 20.
After you select the correct address list for the Cisco Unity voicemail server and finish recording your message, you must then select the voicemail account from which you will send your voicemail message. Failure to do so will place a copy of the voice message in your Exchange Sent Items folder and any replies to your message will show up in your e-mail inbox and not your voicemail folder.

Step 3. To select the appropriate account, choose Accounts>Cisco VoiceMail, as shown in Figure 21.

Voicemail messages sent from the IMAP account will show up in the Sent Items folder on the Outlook client. The Viewmail default settings will include the message .wav file when sending a voicemail message. To change Viewmail options to save only the message header open Outlook,
choose Tools>Viewmail Options, and then check Save only the message header in the Sent Items folder, as shown in figure 22.

**Figure 22.** Selecting Save Only the Message Header in the Sent Items Folder

![ViewMail Options](image)

**Known Caveats**

Table 3 lists the known caveats when using Cisco VMO as a part of this solution.

**Table 3.** Caveats when Using Cisco VMO

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Workaround</th>
</tr>
</thead>
<tbody>
<tr>
<td>New message alerts</td>
<td>When a new message arrives in the IMAP inbox, you will not hear the audible alert of “You have Voicemail”.</td>
<td>No workaround is available at this time. Note: You will hear the default beep tone, but it does not distinguish between e-mail and voicemail.</td>
</tr>
<tr>
<td>Telephone Record and Playback (TRaP) with Cisco VMO</td>
<td>When using TRaP for playback or record, you may be challenged for domain credentials from the domain where the Cisco Unity system has been installed.</td>
<td>No workaround is available at this time. If prompted for user name, password, and domain, you will be required to provide this information.</td>
</tr>
<tr>
<td>Cisco VMO icon does not appear</td>
<td>When a new voicemail message appears, the icon does not automatically appear.</td>
<td>No workaround is available at this time. To get this function, the Microsoft Outlook client must be configured to download the complete item, including attachments.</td>
</tr>
<tr>
<td>Forwarded or replied-to messages</td>
<td>Forwarded or replied-to messages lose the Cisco VMO icon when the icon status reflects the message change.</td>
<td>No workaround is available at this time. Note: When the message is opened, the Cisco VMO form is still used, and the VCR controls are still there; just the icon is not there.</td>
</tr>
</tbody>
</table>

**Additional Clients (refer to the Support Statement above on page 2 in this document)**

| Manual configuration | Cisco does not provide automated scripts for Cisco VMO setup when used with IMAP. | No workaround is available at this time. Note: Check with the customer's IT department for script development. |
| Two user accounts | The configuration must have one account for e-mail and one account for voicemail. | No workaround is available at this time. |
| Two inbox mail folders | The configuration must have one e-mail inbox folder and one voicemail inbox folder. | No workaround is available at this time. |
| Two directory address lists | The configuration must have an address list for e-mail and a separate address list for voicemail. | No workaround is available at this time. |
Deleted messages using Microsoft Outlook 2003 and later

<table>
<thead>
<tr>
<th>Deleted messages using Microsoft Outlook 2003 and later</th>
<th>When deleting voicemail message using Microsoft Outlook IMAP client, the message will show a line through the message and will be available in the saved message queue.</th>
<th>No workaround is available at this time. Note: To completely delete the voicemail message from the Microsoft Outlook client IMAP folder, do the following: From the Microsoft Outlook toolbar click Edit, and then select Purge Deleted Messages.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackberry and other handheld devices to access e-mail only</td>
<td>Because there are two separate message stores for e-mail and voicemail, handheld devices can point to only one message store.</td>
<td>No workaround is available at this time.</td>
</tr>
</tbody>
</table>

**Unsupported Configurations**

The following configurations are not supported:

- Use of the Post Office Protocol (POP3) protocol instead of IMAP4 as described in this white paper is not supported.
- Unified messaging and IMAP users in the same environment is not supported.
- Cisco Unity Inbox and IMAP client in the same environment is not supported.
- The Cisco Unity system installed into an existing Active Directory environment is not supported. The supported configuration in this document is one in which the Active Directory and Exchange infrastructures are built out and dedicated to the Cisco Unity system. For installations that use an existing Active Directory environment for either voice messaging or unified messaging, the solutions provided in this white paper do not apply.
- Use of MAPI in order to connect to the Cisco Unity Message Store when the Cisco Unity system is installed into a multiserver voice messaging-only configuration is not supported.

**Troubleshooting**

This section provides a few troubleshooting tips for setting up and configuring IMAP access for clients.

**Problem**
Users cannot access their defined IMAP account from their Outlook client.

**Solution**
Verify the Active Directory account is enabled using the following steps:

Step 1. Using an account that has administrative rights, choose Start>Programs>Administrative Tools>Active Directory Users and Computers (ADUC).

Step 2. Choose the container where the voicemail account(s) reside; if any voicemail accounts have the red circle, select the account(s), and right click>Enable Account.

**Problem**
The ViewMail icon does not appear on the Outlook client toolbar.

**Solution**
Verify that the ViewMail icon was installed but hidden under toolbar options; do the following:

Step 1. Open Outlook, hover the mouse over the right side of the top toolbar until toolbar options appear; then click the down arrow and drag the ViewMail icon to the toolbar.

**Problem**
Voicemail messages are showing up in your Exchange inbox folder.
**Solution**
Verify that the correct user account is selected.

**Problem**
Replies to a voicemail message are showing up in the Exchange Inbox folder.

**Solution**
Verify that users are using their voicemail account when sending a voicemail message.