MITEL

OnePoint Messenger™

Administrator Guide

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About This Guide

This chapter describes how to use the available documentation to manage OnePoint Messenger™, including managing Microsoft Exchange, Telephony Server, and using OnePoint Messenger diagnostic, maintenance, and performance tools. This chapter contains these sections: :

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Required Skills

OnePoint Messenger is designed to be relatively simple to implement and use by administrators with Microsoft Certified Systems Engineer (MCSE) certification in Windows NT and Microsoft Exchange. While this guide and the *OnePoint Messenger Installation Guide* summarize Windows NT and Exchange processes critical for the operation of OnePoint Messenger, they are not substitutes for the necessary comprehensive MCSE training and Microsoft documentation. In addition, if you want to enable your users to access their Exchange mailboxes using a Web browser, you will need training in the use of Microsoft Internet Information Server. Sources of information on these Microsoft components are listed in the section "Microsoft" on page 239 in Appendix B.

How to Use This Guide

This section summarizes each chapter and tells how to find information in the guide, using both the hardcopy and electronic versions.

Book Organization

This guide is organized to get you started quickly, by providing an overview, followed by three management chapters, and finishing with operational information that you should need only occasionally.

- **Chapter 1**—an overview of the components and tasks

- **Chapters 2, 3, and 4**—instructions regarding the use of Exchange, Telephony Server, and Fax services management, including descriptions of the essential tasks for managing the unified messaging system

- **Chapter 5**—operating Telephony Server (start/stop) and an overview of providing reliability, availability, and serviceability (RAS) using OnePoint Messenger utilities and other tools

- **Chapter 6 through 9**—RAS tools details—validation in Chapter 6, tracing in Chapter 7, performance analysis in Chapter 8, and maintenance in Chapter 9

- **Appendixes**—details on OnePoint Messenger subsystems.

    - Appendix A discusses the Directory Access Service and Initialization program, for manually synchronizing (rarely needed) mailbox information (name, greeting, etc.) from Exchange Server to Telephony Server.

    - Appendix B lists information resources for the components that support OnePoint Messenger, such as the website for Microsoft Windows NT service packs.

    - Appendix C discusses the use of the Windows NT Event Viewer and the error messages that Telephony Server applications send to the Event Log.

    - Appendix D explains the call flow diagrams on the CD-ROM.

    - Appendix E discusses the Text-to-Speech service and the use of its dictionary editor.

    - Appendix F discusses the core components and processes of Telephony Server and provides tests and alternative configuration procedures for troubleshooting a failed installation.

    - Appendix G contains Chapter 6 from the *Show N Tel User's Guide*. It also summarizes the procedures listed in the *OnePoint Messenger Installation Guide* to use Show N Tel

Manager to configure a telephony server with a PBX and assign telephony applications to line ports. See also Brooktrout Technology's *Show N Tel Manager User's Guide*, included on the OnePoint Messenger CD-ROM as a PDF.

- **Glossary**—terms relevant to OnePoint Messenger, including components, email terms, networking terms, and telephony terms

- **Index**—In the online PDF document, index items are hyperlinks to the associated contents.

Chapter Organization

Each chapter in this book uses the same organization. Under the chapter title is a brief introduction to the chapter content, followed by a list of the major topic headings, as exemplified above. In the online format, the topics in the list are hyperlinked to their associated topic headings, so you can click a topic in the list to jump to that topic.

Using Electronic and Printed Versions

This guide uses a format that accommodates both on-screen viewing and printing. Use Acrobat Reader version 3.0 or higher to view and print PDF versions of the document. Blue text indicates hyperlinks. The Acrobat bookmark list and thumbnails also provide hyperlinks. See the Acrobat online help for details.

Installation

If you are the installer, use the *OnePoint Messenger Installation Guide* for base installations or the *OnePoint Messenger Getting Started Guide* for turnkey installations. Then use the appropriate integration guide to integrate the Telephony Serveer with your PBX. A list of those guides appears in "OnePoint Messenger Documentation Resources" on page 235 in Appendix B.

This *Administrator* guide is also useful to installers as an overview of the unified messaging system and the configuration tasks, and for details on the operation of several applications that you use during the installation.

The *OnePoint Messenger User Guide* also contains a system overview and contains details on client operation that can give you perspective on the system components.

Client Operation

This guide provides an administrator's perspective on the use of client components, specifically in Chapter 3 for the Telephone User Interface (TUI) and Chapter 4 for fax features. See the *OnePoint Messenger User Guide* for full details on the use of client components.

Conventions Used in This Guide

This section describes the formatting conventions used in this guide to give you extra queues about the action that you are to take.

Keys, Commands, and Buttons

The commands "select", "clear", "click", and "choose" all mean basically the same thing—to make a choice—but the terms are used in specific situations:

- "Select" is used mostly to open and use property pages (tabs) and dialogs, such as to indicate items in a field or group of options. "Clear" is used to deselect a check in a check box or an entry in a field. For example, while you "select the radio button for xxx to enable xxx," you "clear the radio button for xxx to disable xxx."

- "Choose" is used mostly in menus, such as the Windows Start menu and program menus, to indicate menu items.

- "Click" is used for obvious buttons, up and down arrows, in edit boxes, spin controls, and for the Windows Start button.

- "Double-click" is used in any situation where pressing the mouse button twice is the most appropriate action, although other options may be available.

- "Press" is used when indicating a computer keyboard or telephone keypad key. There are brackets around the keyboard key, as in "Press [Tab]."

Typically, instructions in this guide start by telling you how to open an application by choosing it from the Windows Start menu. An instruction that involves making a choice from a menu is structured: "From the **XXX** menu, choose **YYY**." This style is also used for dialog boxes.

There are two other ways to open OnePoint Messenger applications:

- From TS Admin, which is the short name for the Unified Messaging Snap-in to Microsoft Management Console, you can open

OnePoint Messenger and other supporting applications from its Utilities node. You can access TS Admin by double-clicking its icon on the desktop. In OnePoint Messenger 2.0, TS Admin replaces the Telephony Server Administrator application from previous versions of OnePoint Messenger.

- Another way to open OnePoint Messenger applications is from the OnePoint Messenger program group, shown in Figure 1. The program group is installed on your Telephony Server desktop.

Figure 1 OnePoint Messenger Program Group

This guide generally does not include the keyboard shortcuts for menus and commands. To use the keyboard shortcuts, you should:

- Display menus by pressing [Alt] and the underlined character displayed on the screen (for example, press [Alt+F] for the **File** menu).

- Choose commands by typing the underlined character displayed on the screen (for example, type S for the Save command).

Images and Tables

Tables and inline graphics in this guide contain captions with numbers based on the chapter number. References to a figure or table from another page are linked and highlighted in blue to indicate the link. You can also find and access them from the Acrobat bookmark list.

When presenting information about buttons, such as "Click the **XXX** button to open the **YYY** dialog box," this guide may present the

button to the left of the instruction, as shown here. In that case, the graphic is not labelled.

Type in Commands and Screen Output

For statements in command syntax format, `small mono-spaced bold type like this` indicates the characters you should type. Brackets like these < > designate the variables that you are to replace with other information. For example, in the following command, you type the word `INSTALL` but replace "`drive`" and "`directory`" with the names of the drive and directory you are using:

`<drive>\<directory>\INSTALL`

The same font in regular weight (not boldface) presents screen output.

Lists

Numbered lists present the steps of procedures that you must follow in the order given.

Bulleted lists present options for which the order is not important.

Notes and Cautions

A "**NOTE:**" presents information that is of special importance or is relevant only to some users or in some situations.

A "**CAUTION!**" alerts you to choices with potentially problematic results.

"**WARNING!**" is more serious than a caution, alerting you to a choice that could cause a failure of the system.

Other Text Styles

Italic type is used to introduce terms and for the titles of publications.

In this guide, **boldface** type is used to emphasize key words, such as buttons, tab, menu items, and introduction to tasks, to make the key concepts easier for you to spot.

Task

A task is introduced by this guide with bold text, followed by a sequence of numbered steps, such as is shown below to access OnePoint Messenger documentation updates.

Contacting Mitel Technical Publications

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<div align="center">techpubs@mitel.com</div>

To check for the most current documentation:

1   Access the Mitel website at:

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2   Log on to **Mitel Online**.

3   Click **Tech Support** in the top navigation bar.

4   Click **Technical Practices**.

5   Click **Mitel OnePoint Messenger**.

1. OnePoint Messenger Overview

This chapter introduces OnePoint Messenger™, a software suite that helps to create a unified messaging environment. This chapter contains the following sections: :

What's New in OnePoint Messenger 2.0

New features in this release include:

- Support for 24 line card ports

- Support for the ".wav" sound file format for voice messages

- Calling Line Information (CLI) in message Subject fields

- Enhanced Data Link Integration (EDLI)—provides integration to Centrex switches and Fujitsu, Lucent, NEC, and Nortel PBXs.

- *Fax Gateway*, which enables users to send fax or text messages directly to a fax machine from Outlook. FAXConfigLog.doc is a fax gateway configuration log.

- Latin American Spanish telephone user interface (TUI) prompts in both the system and mailbox levels of the TUI

- Multiple conditional user greetings that users can record and set from either a telephone or Outlook

- Outlook 2000 support (Outlook 97 support removed)

- Passcode editing—Users can change their telephone passcodes from Outlook, in addition to using the TUI.

- PBX integration—In addition to the EDLI integrations listed above, integration to the Mitel SX-200 is now supported through the TalkTo card.

- *QuickFax*—provides an interface for desktop users to create and send faxes directly to a fax machine from any application along with the option to create a personal cover page or use a system fax cover page

- *QuickPlay*—adds enhanced voice message playing options to the Outlook Inbox

- Show N Tel 4.4 support

- *Single Digit Routing*—Automated Attendant can be set up with a customizable menu whose menu options allow the caller to press a single key to access a variety of functions, including other menus, applications, fax documents, announcements, and mailboxes. See "Single Digit Call Routing", on page 136 in Chapter 3 for details.

- *Voice Profile for Internet Mail (VPIM)* support—Communication between OnePoint Messenger and other VPIM-compliant voice mail systems. See "Reviewing License Status", on page 221 in Chapter 9 for a license for sending VPIM messages. The Statistics Reporting Program (see page 203) provides VPIM messaging statistics. VPIMConfigLog.doc provides a VPIM gateway configuration log.

- *Unified Messaging Snap-in* to Microsoft Management Console—Commonly known as *TS Admin*, this interface replaces Telephony Server Administrator as the TUI configuration interface and provides many other configuration elements and a launch point for other utilities.

For details on user features, see "OnePoint Messenger User Feature Highlights", on page 30. See also "What's New in OnePoint Messenger 2.0" in Chapter 1 of the *OnePoint Messenger User Guide*.

What Is OnePoint Messenger and Unified Messaging?

OnePoint Messenger is a software suite that, when combined with other hardware and software products, provides a unified OnePoint Messenger messaging environment. "Unified messaging" is the storage of telephone voice messages, faxes, and e-mail in one central repository and the delivery of those messages to users through a common interface. OnePoint Messenger enables users to receive and create voice, fax, and e-mail messages through a telephone or on a PC—through Outlook or a Web browser. Also, OnePoint Messenger provides True Unified Messaging^{sm}, in that it provides a single point of user administration for both voice mail and e-mail.

The following diagrams describe the components of a OnePoint Messenger unified messaging environment:

- Network diagram in Figure 1-1 on page 28
- Detailed component diagram in Figure 1-2 on page 34
- Support software diagram in Figure 1-3 on page 42.

The components represented in the diagrams are associated with text descriptions below the figures.

The network diagram in Figure 1-1 shows the major hardware components that provide the unified messaging service, including examples of client hardware, and the relationship between all components.

Figure 1-1 Network Diagram
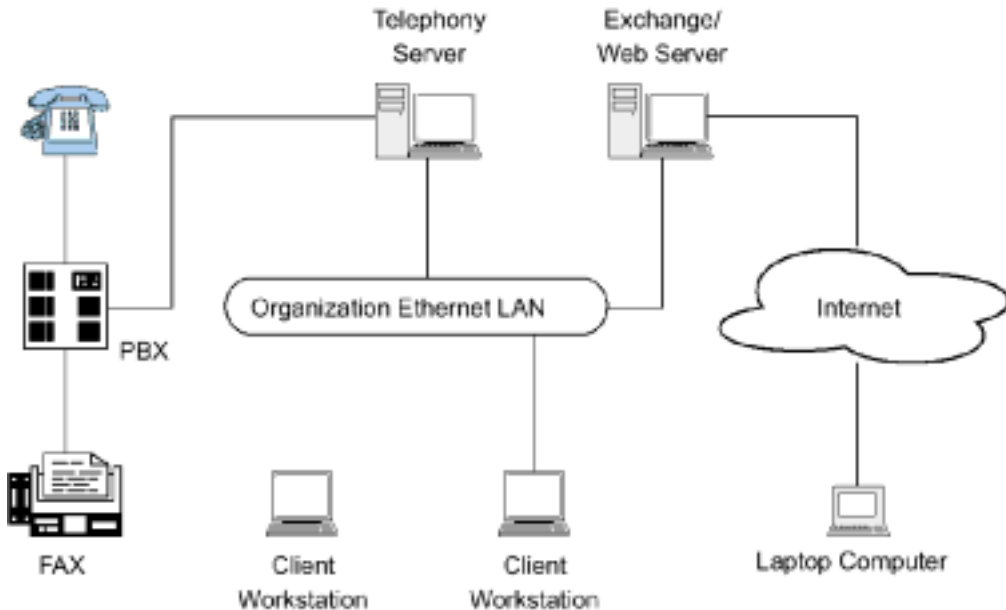
Telephony Server

In these guides, "Telephony Server" is used to refer to the collection of OnePoint Messenger telephony applications and support programs that reside on "the Telephony Server" (the computer). The Telephony Server computer must have Windows NT Server 4.0 with Service Pack 5 (and other software, all listed in the *OnePoint Messenger Installation Guide*), line and fax cards with their configuration programs connected to the PBX by phone (or possibly other data) lines, and a TCP/IP network connection to the Exchange Server. See the network diagram on page 28.

The OnePoint Messenger applications dedicated to call processing provide the link between the telephone switch and Microsoft Exchange. In addition to providing traditional telephone call routing and messaging services, such as controlling what happens to calls that are not answered and providing the caller the ability to leave and retrieve voice messages, Telephony Server enables OnePoint Messenger callers to retrieve and reply to e-mail messages that are read to them using text-to-speech (TTS). Telephony Server also has advanced fax handling features, such as advanced fax routing, including routing e-mail to fax machines.

See Chapter 3 (page 89), for a discussion of Telephony Server administration and Appendix F (page 297) for details on telephony processes. See Chapter 4 (page 147), for a discussion of OnePoint Messenger fax features.

Microsoft Exchange Extension

OnePoint Messenger 2.0 uses Microsoft Exchange 5.5 as the post office, including e-mail and telephone messages. OnePoint Messenger adds an Exchange Extension to enable unified messaging. OnePoint Messenger supports the use of multiple Exchange Servers for access to distributed user mailboxes, providing access to any of those mailboxes from any telephone, Outlook client, or Web Client.

See Chapter 2 (page 53) for Exchange Server tasks.

Diagnostic and Performance Tools

OnePoint Messenger includes a rich set of diagnostic, maintenance, and performance tools that integrate with native Windows NT tools to provide you a range of alternatives for troubleshooting and optimizing performance. These applications are described in "Diagnostic, Maintenance, and Performance Tools", on page 41 in this chapter and in a more extended overview in Chapter 5 (page 165).

Standards

OnePoint Messenger supports the following standards:

- **SMDI, TAPI2,** and **TSAPI** for specific PBXs

- **LDAP** and **MAPI**; MAPI, IMAP4, and HTML can be used as the client/server access method between OnePoint Messenger/ Exchange mail servers and various clients.

- **Voice Profile for Internet Mail (VPIM)** IETF RFC 2421, which allows voice mail systems to exchange messages over the Internet with mail systems that support the VPIM protocol.

  The VPIM protocol allows voice mail systems that support the protocol to use the Internet to exchange messages with other mail systems that support that protocol. OnePoint Messenger users can now receive VPIM messages in their Exchange Inboxes and access them through any of their three OnePoint Messenger client applications. With the VPIM Send license installed (see Chapter 9 here or Chapter 5 in the *OnePoint Messenger Installation Guide*), OnePoint Messenger users can use any of their three

client applications to send messages to recipients on other VPIM-enabled voice mail systems.

OnePoint Messenger User Feature Highlights

For user access to messaging, OnePoint Messenger supports Microsoft Outlook 98 and Outlook 2000 on Windows 95/98/NT, Internet Explorer 4 (or higher) and Netscape 4 (or higher) Web browsers, and any standard touchtone telephone. OnePoint Messenger also provides the Unified Fax Printer for producing faxes from any PC application that has a print menu.

The OnePoint Messenger desktop client components include an Outlook extension, a sound recorder and player, and fax components that include the fax print driver, a fax cover page generator, and a fax viewer. These separate pieces of software combine seamlessly with Outlook to handle voice, fax, and compound messages. The sections below provide more details on user features. For more, see the *OnePoint Messenger User Guide*.

Voice, Fax, or E-mail Messaging over the Telephone

OnePoint Messenger provides the following telephone features:

- OnePoint Messenger users can listen to voice or e-mail messages from any phone, or route text e-mail or faxes to a fax machine.

- Callers can leave a voice message and/or a fax message for any OnePoint Messenger user.

- Using a telephone, OnePoint Messenger users can answer e-mail messages with a voice message, a fax, or a compound message.

- Communication with VPIM-compliant voice mail systems is supported.

Multiple Desktop Clients

OnePoint Messenger makes use of the following Windows desktop components to provide desktop unified messaging in these ways:

- OnePoint Messenger extends Microsoft Outlook for voice and fax messaging with a mail form that includes a player/recorder.

- OnePoint Messenger's Web Client combines with the Microsoft Outlook Web Access interface to Exchange. Web Client replicates Outlook functionality through Internet Explorer 4.0+ or

Netscape 4.0+. OnePoint Messenger automatically downloads the Web Client plug-in for voice playback and recording.

- Unified Fax Printer can create multi-page faxes from any Windows 95/98/NT application that has a print menu. Unified Fax Printer can save the fax to disk, attach a fax cover page and send the fax directly to a fax machine with a cover page, or spawn an Outlook mail form to which it attaches the image.

- Image Maker Viewer is installed by OnePoint Messenger for viewing and annotating faxes. Imaging for Windows©, an application included with Microsoft Windows 95/98/NT, can also display and annotate faxes created by OnePoint Messenger.

- Standard phone message waiting indicators and pagers notify subscribers that they have received messages.

- Standard Windows sound capabilities and multimedia hardware (soundcard, speakers, microphone) play and record OnePoint Messenger .wav-format voice messages. Also see the next section on Call-Me/Meet-Me.

Call-Me/Meet-Me

Call-Me and Meet-Me are two OnePoint Messenger client features that provide ways to establish a combined computer-telephone mailbox session. The user controls message playing and creation through Outlook while using the telephone in place of desktop multimedia (speakers and microphone).

By choosing Call-Me, the user has the computer initiate a request for the Telephony Server to call the user's telephone in order to establish the session. By choosing Meet-Me, the user has the computer initiate a request for the Telephony Server to wait for a call from the user's telephone into his or her mailbox in order to establish the session. Once the session is established using either method, the user interface is the same.

The user has several ways to initiate Call-Me or Meet-Me sessions, including setting a default audio preference. For details on usage, see Chapter 3 of the *OnePoint Messenger User Guide*.

To provide Call-Me, you must assign either Notifications (Full) or Notifications (CM) to at least one line port in Show N Tel Manager. Notifications (Full) also supports MWI and paging, while Notifications (CM) is dedicated to Call-Me. For details, see Chapter 4 of the *OnePoint Messenger Installation Guide*.

Call-Me/Meet-Me support is limited to users with the Full Unified Messaging option in Exchange. Further limits on the use of Call-Me and Meet-Me can be set in the System Limits node of Microsoft Management Console. For configuring user options in Exchange, see "Managing OnePoint Messenger Users", on page 63 of Chapter 2.

True Compound Messaging

From the desktop, the OnePoint Messenger user can create true compound messages with multiple message parts, including one or more voice, fax, text, or document attachments or embedded images on the message body. The user can create a message, or reply to a message with any media type. For example, the user can reply to a fax or a text e-mail with a reply that annotates the text with multiple voice messages. OnePoint Messenger adds special "Unified Message" message forms to Outlook and the Web Client that enable the user to easily include any and all embedded and attached media types on the same form. Unified messages contain, by default, all content from any previous correspondence chain.

OnePoint Messenger Message Features

The term "unified message" is used here to mean a message that has been either delivered by Telephony Server as a result of a telephone call or created with the OnePoint Messenger Unified Message form. This includes compound messages that contain OnePoint Messenger voice or fax components. Fax messages are identified as unified messages if from one of two sources:

- A user generates and sends a fax using the Unified Fax Printer.

- A fax arrives from a fax machine to a OnePoint Messenger user's mailbox. These types of messages are designated as unified messages because Telephony Server converts them to TIFF format and puts unified message indicators on them.

Unified messages behave like standard e-mail messages in most respects, arriving in the Inbox like standard e-mail messages. All of the standard Outlook e-mail sorting and selection techniques work for unified messages. Messages coming from a telephone place "Unified Message" in the subject field of the Outlook message summary list.

Message Type Indicators

The major difference visible in the Inbox are the unique icons for voice and fax unified messages. Icons in the message summary of Outlook or Web Client indicate unified messages with a phone icon

for a voice message and a fax machine icon for a unified message that was generated first as a fax.

Within an open message Outlook form, icons indicating a OnePoint Messenger voice attachment or fax attachment are labelled as such. The Web Client displays an icon under which its file name appears with a .wav or .cvv extension, depending on the original format of the recording.

A unified message may include any combination of message parts, including one or more blocks of text, graphics, and voice, fax, and other attachments. A unified message reply to either a standard e-mail or unified message encapsulates as an attachment, by default, the original message and its attachments.

For more on client features, see the *OnePoint Messenger User Guide*. In this guide, see "Client Fax Features", on page 160 in Chapter 4. For more on telephony messaging processes, see Appendix F (page 297).

Unified Messaging Software and Hardware Components

The OnePoint Messenger unified messaging environment is comprised of many applications and hardware components, including components supplied by both Baypoint Innovations and other vendors, as shown in the component diagram in Figure 1-2:

- **Messaging interfaces** appear in the top group

- **PBX and Exchange mail server** appear in the middle group

- **Telephony Server messaging, diagnostic, and performance tools** appear in the bottom group

- **Network components** are represented by lines and arrows between groups. Network cards, other than the telephone line and fax cards on the Telephony Server, are not shown.

Figure 1-2 OnePoint Messenger Unified Messaging Environment
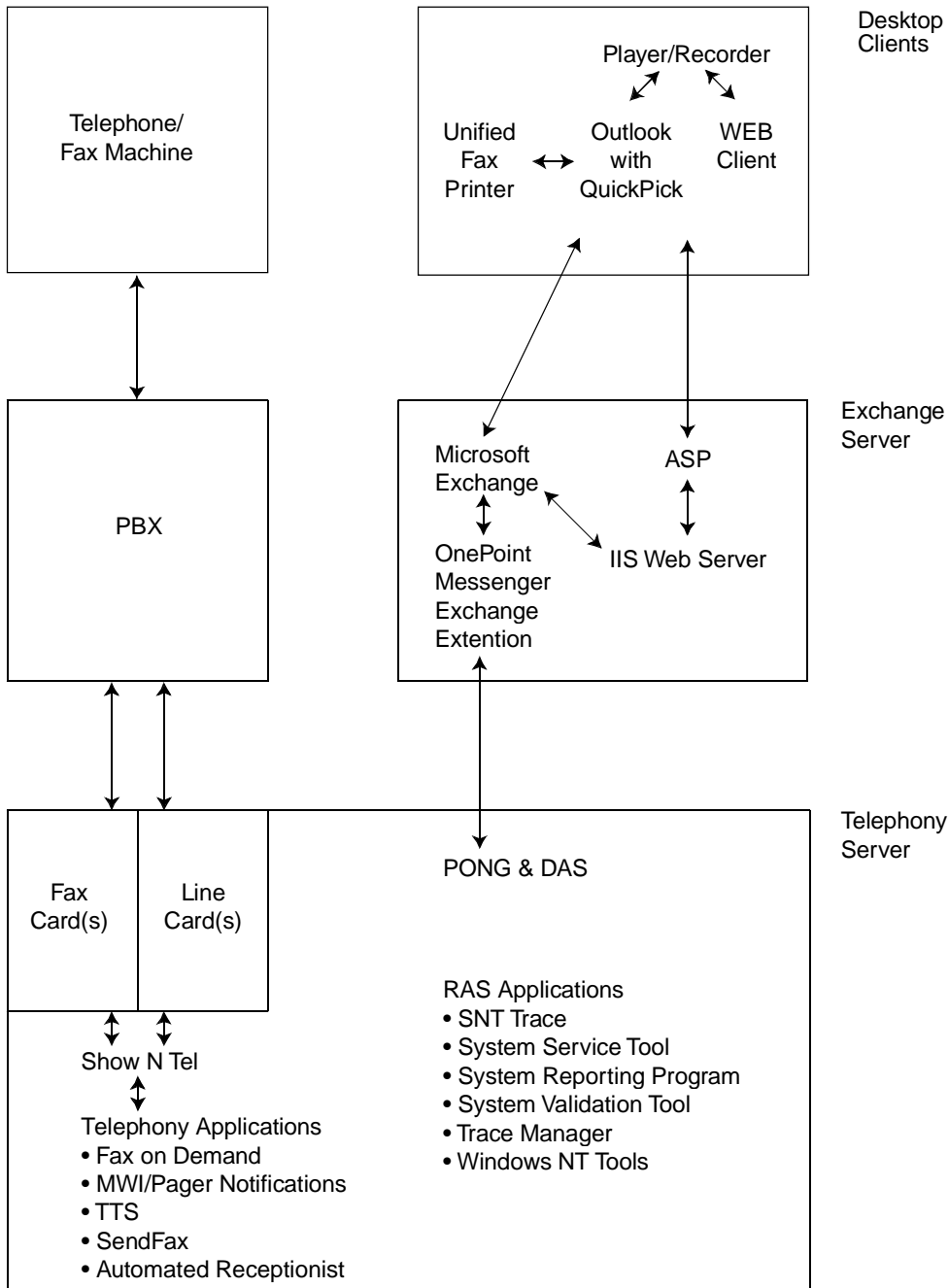
There are four component categories in the following discussion of the unified messaging environment, which also includes the compo-

nents provided by other vendors. For a more general unified messaging network overview, see the diagram in Figure 1-1 (page 28).

For a more detailed discussion of the utilities that support OnePoint Messenger, see the Diagnostic and Performance Tools diagram in Figure 1-3 on page 42 and the discussion that follows it. See also the extended RAS discussion in Chapter 5 (page 165).

Messaging Interfaces

Messaging interfaces are the interfaces that people use to communicate with each other, including the telephone, fax machine, and e-mail clients. Some components come bundled in OnePoint Messenger, as noted, and some, such as Outlook, must be purchased separately:

Standard Windows sound capabilities and multimedia hardware (soundcard, speakers, microphone) are used to play and record OnePoint Messenger voice messages. The *OnePoint Messenger User Guide* explains how to use the Volume Control utility that comes with Windows to check and set speaker and microphone levels.

OnePoint Messenger includes server applications that you can configure and invoke on a per-user basis or a Class of Service basis to send message waiting notifications to telephones and pagers.

Image Maker/Image Maker Viewer—TIF image creation, viewing, and annotation software from Metasoft, installed with OnePoint Messenger to support Unified Fax Printer to generate faxes and fax cover pages. Image Maker Viewer is for fax viewing and annotation.

Microsoft Internet Explorer (IE)—Microsoft's Internet Explorer™ (v. 4.0 or higher) is one of the two Web browsers supported for providing Web access to messages.

Microsoft Outlook—Outlook (v. 98 or higher) is a personal information manager that provides users access to and creation of messages.

Netscape Navigator 4+—Netscape Navigator™ (v. 4.0 or higher) is one of the two Web browsers supported for providing Web access to messages.

Outlook Extensions—OnePoint Messenger adds voice and fax messaging features to Microsoft Outlook through an add-on component called an Outlook extension. Its elements include:

- Inbox message icons to show message classes
- Message playing and creation buttons on the standard toolbar to play voice messages from the Inbox summary table

(*QuickPlay*), to open the New Unified Message Form to create messages, and to initiate and close Call-Me/Meet-Me connections

- Message commands on the **Tools** menu equivalent to the toolbar buttons

- *QuickPick* for viewing a list of message components and proividing quick access to any component.

- The **Unified Messaging** tab to record a user's TUI name and greetings, and set a TUI passcode and user preferences

- The *New Unified Message Form* for recording voice messages and for creating all other kinds of e-mail messages

- A recorder on the New Unified Message form with which the user can record voice messages

- The *Unified Read Message Form*, which includes the Unified Message Player toolbar, and the message body

- The *Unified Message Player*, or simply "the player," which plays voice messages, and presents a toolbar to use to control the message playback. This appears on the Unified Read Message form, and also appears as a stand-alone toolbar in several situations, including when the user plays a message directly from the main Inbox list.

Web Client—OnePoint Messenger's Web Client combines with the Microsoft Outlook Web Access interface to Exchange to replicate Outlook functionality through a browser that supports Active Server Pages (Internet Explorer 4.0+ and Netscape 4.0+ are the supported browsers.) Web Client lets the user access e-mail and unified messages as HTML pages from the Exchange Server via the Internet or LAN. It automatically downloads a player and recorder for voice playback and recording.

Unified Fax Printer—Unified Fax Printer uses the print menu of any Windows application to create a multi-page TIF fax image of the active document. Unified Fax Printer can spawn a New Unified Message form in Outlook to which it attaches the fax image or send the fax directly to a fax machine. It can be installed on each OnePoint Messenger client PC. *QuickFax* is a new option in the Unified Fax Printer dialog that enables the user to send a document as a fax directly to a fax machine. The user can use the system fax cover page or create one through an included cover page creation dialog.

Telephone User Interface (TUI)—The TUI provides telephone keypad access to Exchange mailboxes and OnePoint Messenger greetings, fax, and other features. Any touchtone telephone, inside or outside the OnePoint Messenger domain, is able to use the OnePoint Messenger TUI when it dials the OnePoint Messenger access number. The caller interfaces through the keypad with a series of TUI menus and prompts presented from Telephony Server by a recorded voice.

Telephony/Mail Processing and Administration

Telephone voice mail and e-mail processing and administration functions are handled by a combination of many software components, which are installed on two Windows NT Server 4.0 computers, as described in "What's New in OnePoint Messenger 2.0", on page 25.

Telephony Server—As described in "Telephony Server", on page 28, the Telephony Server is the hardware platform that provides the host for Telephony Server, the set of applications that provide the interface between the Microsoft Exchange mail server and the telephone switch (PBX), enabling callers to leave voice messages on Exchange for OnePoint Messenger users, and for OnePoint Messenger users to use a telephone to manage their unified message mailboxes on Exchange. In addition to call answering, routing, and messaging functions, Telephony Server also includes a Fax on Demand (faxback) service.

Telephony Server software installed by the OnePoint Messenger Installation Program includes several third-party applications, including Microsoft Message Queue (MSMQ), which provides more continuous access to messaging through the Telephony Server when Exchange is down, the Vintra Message Transfer Agent (MTA) for managing VPIM messaging, Microsoft Management Console (MMC) for hosting the Unified Messaging Snap-in, Show N Tel Runtime, line card software, and WinFT, for restarting services automatically.

Telephony Applications—These applications, including Active Call Handler, AutoRecep, Message Delivery, Telephony Server, Faxon-Demand, SendFax, and Notifications can be assigned to individual line card ports to provide particular telephony services, including the Message Center, Text-to-Speech, fax sending, Call-Me, and message notification. See Chapter 4 of the *OnePoint Messenger Installation Guide* for details.

OnePoint Messenger Exchange Extension—The OnePoint Messenger Exchange Extension adds unified messaging access to individual Exchange mailboxes. It is represented on the Exchange Administra-

tion interface by OnePoint Messenger's **Unified Messaging** tab in the Recipient property pages. See "Managing OnePoint Messenger Users", on page 63 in Chapter 2.

Active Server Pages—Active Server Pages (ASP), part of Microsoft Internet Information Server, provide HTML conversion of Exchange data. OnePoint Messenger augments the ASP code to handle unified messages.

Directory Access Service (DAS)—Directory Access Service (DAS) is a directory caching program that runs transparently on Telephony Server. It allows Telephony Server to look up mailboxes and greetings quickly by automatically replicating Exchange data into a database on Telephony Server. The installer must run Directory Initialization manually once during OnePoint Messenger installation to provide DAS replication. You can run it manually at other times to expedite DAS replication. See Appendix A (page 229) for details.

Fax card(s)—A fax card plugs into the PC bus to convert digital ASCII text into an analog fax image. Fax cards are optional in OnePoint Messenger, but they are necessary when, for example, a subscriber dials his or her Exchange mailbox from a telephone and keys in a request to have an e-mail message or attachment sent to a fax machine.

Brooktrout Technology fax cards are the only fax cards supported by OnePoint Messenger. See Appendix A of the OnePoint Messenger Installation Guide for details.

Fax on Demand (Faxback)—Fax on Demand is a Telephony Server service that provides fax documents to callers. See "Fax on Demand", on page 124 in Chapter 3 and page 147 in Chapter 4.

Line card(s)—Line cards on the Telephony Server and PBX provide telephone connectivity to messaging. Typically, each port on the line card has an unpublished extension to which the PBX routes calls through the Message Center pilot number.

Logs—Among the logs that administrators can use to monitor processes are agerror.log, ag.rpt, loader.log, mitaisrv.log, mvip.log, and afcserv.log. agerror.log and ag.rpt are included with OnePoint Messenger for monitoring the status of Natural MicroSystems cards. Mitaisrv.log, loader.log, and afcserv.log monitor Mitel software and card status. Mvip.log monitors the status of the MVIP connection.

Microsoft Exchange Server 5.5—Exchange provides the post office, putting users' messages in their personal folders. OnePoint Messen-

ger is integrated with Microsoft Exchange through an Exchange Extension, or Exchange "Add-on," provided with OnePoint Messenger, which enables Exchange to receive and store voice and fax messages sent from a telephone or from a PC. The Extension also allows the Exchange administrator to assign configurable levels of unified messaging services to each user. Exchange delivers the voice and fax messages to the PCs of OnePoint Messenger users, and OnePoint Messenger users can retrieve their mail from Exchange by using a telephone to call Telephony Server.

Exchange includes multi-protocol delivery and replication services that provide scalability and fault tolerance to OnePoint Messenger's unified messaging. Microsoft Exchange site connectors support multiple mail servers within a location and multiple locations. Through Exchange site connectors, OnePoint Messenger interconnects the telephone network and digital data network and can interoperate with most other e-mail systems via the Internet or private networks. OnePoint Messenger uses Microsoft MAPI to communicate between Telephony Server and Exchange.

OnePoint Messenger 2.0 supports only Exchange Server 5.5. For details on versions and service packs, see Appendix A of the *OnePoint Messenger Installation Guide.*

Microsoft Internet Information Server (IIS)—Internet Information Server is the Microsoft Web server that provides conversion of Exchange messages into HTML for delivery to Web browsers.

PBX—"PBX" is short for Private Branch Exchange. The term is used in this document as shorthand for the telephone switches to which Telephony Server connects to provide the telephone component of unified messaging. For supported PBXs, see Appendix A of the *OnePoint Messenger Installation Guide.*

Show N Tel Runtime (SNT)—SNT is telephony programming middleware from Brooktrout Technology and installed with OnePoint Messenger. SNT has several interfaces:

- SNT Trace can monitor call progress on one or more lines. See Chapter 7, "Using Trace Facilities", on page 191.

- Show N Tel Manager is used to configure the interface between Telephony Server and the telephone switch, including assigning telephony applications to individual ports. For details, see "Show N Tel", on page 329 in Appendix G. See also Brooktrout's *Getting Started with Show N Tel* and *Show N Tel System Administra-*

tor Guide, stored on the OnePoint Messenger CD-ROM as sntgetstart.pdf and sntmgrguide.pdf, respectively.

- Show N Tel's Operate and Monitor interface is used to activate and deactivate individual ports and to monitor the operation of applications running on each port. See "Monitoring Port Activity in Show N Tel Manager", on page 174 in Chapter 5 and the *Show N Tel Manager System Administrator Guide*, as mentioned above.

  CAUTION! Do not use Operate and Monitor to start and stop the whole system. Instead, use Telephony Server Monitor (TSMon), as described in "Operating the Telephony Server", on page 166 of Chapter 5.

Text-to-Speech (TTS)—OnePoint Messenger uses TruVoice© Text-To-Speech (TTS) to convert ANSI text into speech so that users can listen to text e-mail (also header information) via a telephone. Users can jump backward and forward in the message, just as they do a standard voice message. TTS also allows you to edit its dictionary. For details, see Appendix E, "Text-to-Speech (TTS)", on page 285.

Unified Messaging Snap-in—Also referred to as the **Unified Messaging Tree** and **TS Admin**, this is a OnePoint Messenger add-on to **Microsoft Management Console** for configuring the Telephony Server to provide its telephony services, including some aspects of the PBX integration, the behavior of the Telephony User Interface, and mailbox default features. This interface replaces the **Telephony Server Administrator** of OnePoint Messenger 1.1. The interface and related tasks are detailed in Chapter 3 (page 89).

Windows NT Server (NT) 4.0—"NT" is an operating system that provides stability for running concurrent applications with multiple threads. OnePoint Messenger requires NT for all of its server functions. Windows NT Server 4.0 Service Pack 4 from Microsoft is also required. For supported versions, see Appendix A of the *OnePoint Messenger Installation Guide.*

Network Components

OnePoint Messenger marries LAN and telephone networks through the Telephony Server computer. The components that are necessary to provide network communication include:

Network topology—OnePoint Messenger only requires that, for Windows Outlook clients, you use components from the physical layer and data link layer of the OSI Reference Model (network topol-

ogy) that supports TCP/IP. Ethernet is the most common data link and physical layer protocol, entailing the installation of Ethernet network interface cards (NICs) in each computer.

The one other requirement is that the Telephony and Exchange servers be in the same Windows NT domain. Client computers, to have Call-Me/Meet-Me functionality (see "Call-Me/Meet-Me", on page 31), must be in a Windows NT domain that has a two-way trust relationship with that of the servers.

PBX integration—OnePoint Messenger Telephony Server supports the major PBX protocols. The integration process includes attaching the Telephony Server to the PBX through a line card installed on the PC (sometimes a second data line, such as RS-232, depending on the PBX) and configuring the PBX interface in Show N Tel Manager. See Chapter 4 of the *OnePoint Messenger Installation Guide*.

Post Office Network Gateway (PONG)—Post Office Network Gateway (PONG) provides the post office routing function, linking Telephony Server to Exchange. PONG is a middleware application that resides on Telephony Server. It has no user interface and starts with Telephony Server. For details, see Appendix F.

TCP/IP—TCP/IP is the network protocol required for communication between OnePoint Messenger servers and user PCs (including Web access). TCP/IP is bundled with Windows and must be configured for each computer.

Diagnostic, Maintenance, and Performance Tools

OnePoint Messenger includes a set of RAS (Reliability, Availability, Serviceability) tools that work with native Windows NT tools, shown in Figure 1-3 by category. Descriptions of the tools follow the figure.

Figure 1-3   Diagnostic and Performance Tools
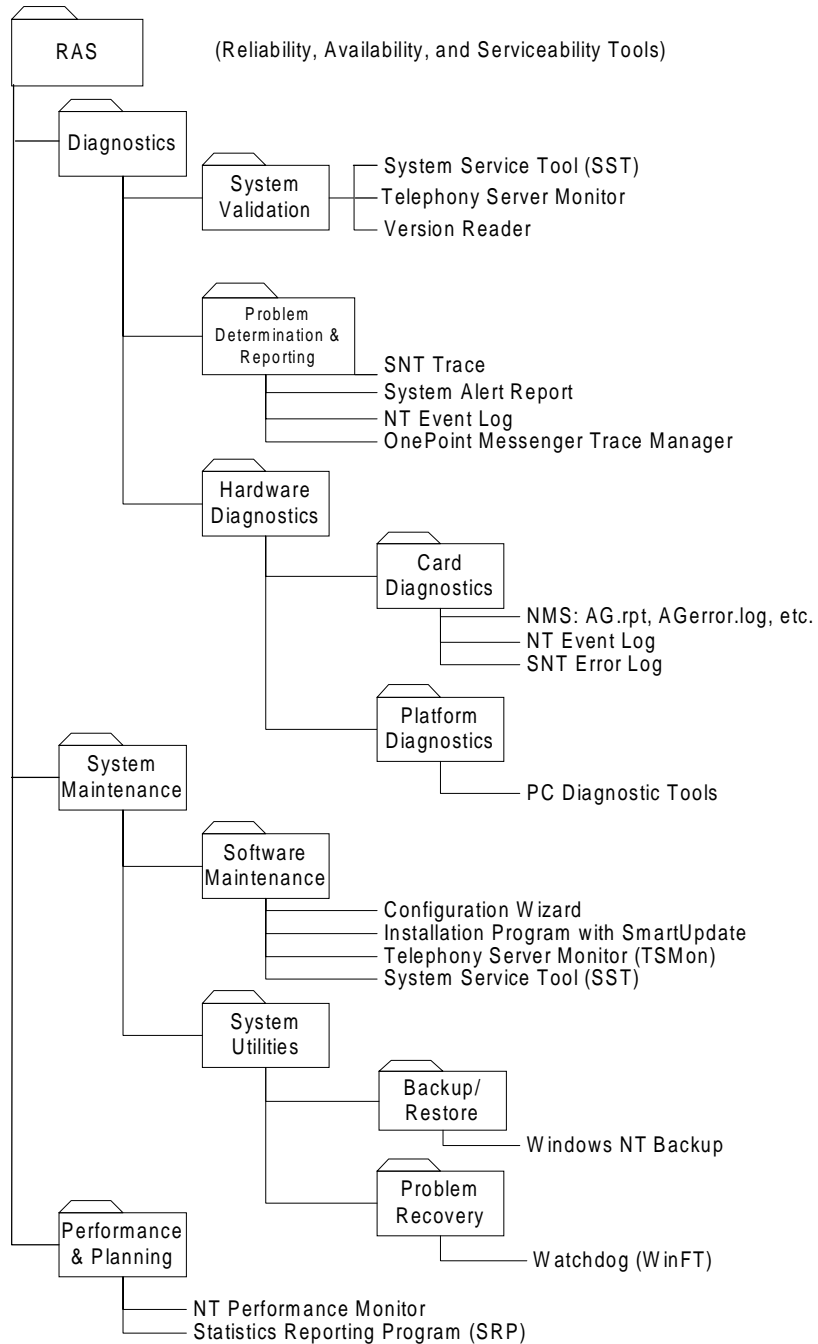
cvNotify—cvNotify is a OnePoint Messenger utility installed on the Telephony Server that you can use to test whether the Message Waiting indicator (MWI) and pager notification functions of Notification

Server are operating correctly. Access it by double-clicking cvNotify.exe in the \OnePoint Messenger\bin directory. For details, see "Using cvNotify to Test MWI and Notification Server", on page 188 in Chapter 6.

Configuration Wizard—This OnePoint Messenger program is installed on the Telephony Server in the OnePoint Messenger program group. Use it to change the integration of the Telephony Server with its primary Exchange Server and to install OnePoint Messenger software on the Exchange Server. See "Revising the Telephony Server/Exchange Integration", on page 59 in Chapter 2.

Natural Microsystems linecard utilities—**Agerror.log** and **ag.rpt** monitor the status of Natural MicroSystems cards. **AGConfigurator** is a Natural MicroSystems (NMS) utility that provides a convenient GUI configuration interface for NMS line cards.

OnePoint Messenger Installation Program—Use the installation program on the OnePoint Messenger CD-ROM to install and re-install OnePoint Messenger base releases. You can also add prompt languages from the CD-ROM at any time. Languages included with OnePoint Messenger 2.0 are UK English, US English, and Spanish. The installation program includes the **SmartUpdate** utility for backing up and reinstalling OnePoint Messenger configuration and database files after a new installation. See "SmartUpdate Automated Configuration Backup\Restore" in Chapter 5 of the *OnePoint Messenger Installation Guide*.

For installing patches and upgraded licenses, see "Upgrading and Repairing OnePoint Messenger", on page 217 in Chapter 9, or see Chapter 5 in the *OnePoint Messenger Installation Guide*.

OnePoint Messenger Trace Manager—OnePoint Messenger Trace Manager (usually referred to simply as Trace Manager, as it appears in the OnePoint Messenger program group on the Telephony Server) has a standard Windows user interface through which the administrator controls the level of event logging reported by OnePoint Messenger subsystems. See the RAS overview in Chapter 5 (page 165), and tracing details in Chapter 7 (page 191).

Platform Diagnostic Tools—Windows NT comes with a disk analysis utility. Double-click **My Computer**, then right-click a drive in the list, then click **Properties**, then the **Tools** tab, then **Error-checking**. Windows NT Diagnostics lists details about component settings and utilization. For example, you can check whether disk drives are for-

matted as FAT or NTFS and whether there is contention for base memory or interrupts.

SNT Trace—The OnePoint Messenger installation includes Show N Tel Runtime, which has monitoring facilities, including Show N Tel Server. Show N Tel Server is a DOS window real-time presentation of the status of each phone line. You can use it as an operational monitor and as a tool to help test problem scenarios. It is located in the Show N Tel program group. OnePoint Messenger adds a GUI front end called SNT Trace (located in the OnePoint Messenger program group) for setting the level and output destination of tracing performed by Show N Tel Server. See the RAS overview in Chapter 5 (page 165), SNT Trace overview on page 177 in Chapter 5 and details on page 197 in Chapter 7.

Statistics Reporting Program (SRP)—This OnePoint Messenger program logs call activity and system performance. SRP includes an interface to manage the amount of logging detail, the call history database, and several report types, which are presented by a runtime version of Crystal Reports™ from Seagate Technology. If you purchase a retail copy of Crystal Reports, you can create custom report formats, which SRP can populate.

SRP adds the two counters to the set used by Windows NT Performance Monitor, so that you can also use the counters with Performance Monitor. SRP uses the full set to generate an alert, called the System Alert Report, when performance is critically degraded.

For more on SRP, see the RAS overview in Chapter 5 (page 165) and SRP details in Chapter 8 (page 201).

System Service Tool (SST)—This OnePoint Messenger program is in the Telephony Server program group. It has a rich interface that manages the installation of hot fixes and service packs, maintains and displays a service history database, and provides service rollback capability. SST also produces detailed printed reports. See the RAS overview in Chapter 5 (page 165) and SST details in Chapter 9 (page 215).

Telephony Server Monitor (TSMon)—This OnePoint Messenger program is in the Telephony Server program group. Use it to monitor and to shut down and restart Telephony Server services. See (page 168) in Chapter 5.

Version Reader—This OnePoint Messenger program is installed on the Telephony Server in the OnePoint Messenger program group and is also copied to client systems during the OnePoint Messenger client

installation. It has a simple GUI that allows you to select any directory and display the version information for all the programs in that directory. This is useful both in system validation and in preparation for upgrading software, to tell you what you already have. For details, see the section "Using Version Reader for System Validation", on page 187 of Chapter 5.

Watchdog—Formally called Intrinsyc WinFT, this is an application bundled with OnePoint Messenger that automatically restarts server applications that have been interrupted. It provides a measure of fault tolerance to OnePoint Messenger. See the RAS overview in Chapter 5 (page 165) and system maintenance details in Chapter 9 (page 215).

Windows Backup—The Backup program included with Windows NT should suffice for OnePoint Messenger configuration backups. See the RAS overview in Chapter 5 (page 165), and see "Backing Up OnePoint Messenger Files", on page 226 in Chapter 9 for backup recommendations.

Windows NT Event Log/Viewer—The Event Log is a Windows NT utility that compiles operational status messages from running applications. Its Event Viewer enables you to view those events through a choice of filters. OnePoint Messenger subsystems send configurable levels of events to the Event Log. You can use the Event Log to troubleshoot and evaluate OnePoint Messenger system performance. See Appendix C on page 243.

Windows NT Performance Monitor—Performance Monitor is a Windows NT utility that monitors system internals, such as CPU, RAM, and disk utilization. OnePoint Messenger supplies two new counters for use by Performance Monitor—Message Services and Port Statistics. See the RAS overview in Chapter 5 (page 165) and performance management details in Chapter 8 (page 201).

Task List

The task list following this introduction summarizes the major types of OnePoint Messenger tasks and provides links to associated tables below the list containing more task details, information sources, and tools to use to perform the tasks. The tasks are arranged in a general sequential order. Critical dependencies are noted.

Some OnePoint Messenger features are enabled by completing tasks in several server management applications at various points along the

installation/configuration sequence. Some of those features with the most dependencies are:

Call-Me/Meet-Me: To provide Call-Me/Meet-Me services, as described in "Call-Me/Meet-Me", on page 31:

- Assign the appropriate telephony application to one or more ports, as described in Chapter 4 of the *OnePoint Messenger Installation Guide* and summarized in Appendix G here (page 329).

- Set global parameters for session time and inactivity time-outs on the **System Limits** node in Microsoft Management Console. See "Configuring Telephony Server", on page 89 of Chapter 3.

- Set Call-Me/Meet-Me options for individuals. See Chapter 2, "Administering Unified Messaging on Microsoft Exchange", on page 53.

Fax: Procedures for enabling the various fax services are detailed in Chapter 4 (page 147).

Text-to-Speech (TTS): TTS of e-mail text over the telephone requires a TTS license, assignment of resources to ports, assignment of TTS privileges to users, and configuration of the TUI:

- To provide text-to-speech rendering through the telephone of e-mail, first purchase one or more TTS licenses, as described in "Upgrading OnePoint Messenger Feature Licenses", on page 220 of Chapter 9.

- In Show N Tel Runtime, enable TTS on one or more ports, as described in Chapter 4 of the *OnePoint Messenger Installation Guide*.

- In Microsoft Management Console, set global parameters for TTS on the Mailbox Defaults node, and assign TTS to classes of service on the Class of Service node.

- To set options for individuals that include TTS privileges, see Chapter 2, "Administering Unified Messaging on Microsoft Exchange", on page 53.

- To edit the TTS pronunciation of individual words, see Appendix E, "Text-to-Speech (TTS)", on page 285.

List of Task Tables

- Set Up Telephony Server and Exchange Server, Table 1-1

- Perform User Administration, Table 1-3

- Perform Telephony Server Administration, Table 1-4

- Run Diagnostics, Table 1-5

- Set Up Users, Table 1-6

- User Tasks, Table 1-7

- Perform System Maintenance, Table 1-8

- Do Performance Tuning, Table 1-9

Table 1-1 Set Up Telephony Server and Exchange Server

Task	Perform using
Install Windows NT 4.0 components on Telephony and Exchange Servers.	Microsoft Windows NT Server 4.0 CD-ROM, Service Pack 4, Option Pack 4. See list in Appendix A in the *OnePoint Messenger Installation Guide*. Follow procedures in Chapter 3 of that guide.
Install network cards on Telephony and Exchange Servers.	See manufacturers' documentation for various network interface cards.
Install fax board on Telephony Server (optional)	See Brooktrout TR-series *Hardware Installation Guide* (summary in the *OnePoint Messenger Installation Guide* and in appendix of *Show N Tel Manager User's Guide* on OnePoint Messenger CD-ROM.
Install line card(s) on Telephony Server and cabling to PBX	See Mitel AFC, NMS installation guides (summary in *OnePoint Messenger Installation Guide)*
Configure NICs, line cards and fax boards.	See *OnePoint Messenger Installation Guide* and manuals supplied by PBX manufacturers
Create Exchange administrator account.	Windows NT User Manager for Domains. See *OnePoint Messenger Installation Guide* and Microsoft NT administration manuals.
Install Microsoft Exchange 5.5 with its Service Pack 1, 2, or 3.	Exchange Server CD-ROM and installation guide supplied by Microsoft (summarized in the *OnePoint Messenger Installation Guide).*
Install Outlook on Telephony Server	Outlook CD-ROM. See *OnePoint Messenger Installation Guide* and Outlook installation manual.
Install OnePoint Messenger on Telephony Server.	OnePoint Messenger CD-ROM and *OnePoint Messenger Installation Guide.* The CD-ROM installs line card software, SNTRuntime, WinFT Watchdog, and TruVoice TTS, along with OnePoint Messenger.

Task	Perform using
Create Telephony Server administrator accounts	Windows NT User Manager for Domains. See *OnePoint Messenger Installation Guide* and Microsoft NT administration manuals.
Install OnePoint Messenger Exchange Extension on Exchange Server	Configuration Wizard (installed with OnePoint Messenger) on the Telephony Server. See *OnePoint Messenger Installation Guide* or Chapter 2 of the *OnePoint Messenger Administrator Guide*.
Run Exchange directory synchronization to Telephony Server as part of the installation	Directory Initialization application on the Telephony Server. See Procedure 6 in Chapter 3 in the *OnePoint Messenger Installation Guide*. See also Appendix A here.

NOTE: For a more detailed installation sequence summary, see Appendix C in the *OnePoint Messenger Installation Guide.*

Table 1-2 Perform PBX Integration

Task	Perform using
Set up PBX for voice mail	PBX documentation from PBX manufacturer. See also OnePoint Messenger integration guide for the specific PBX.
Install and configure any software from PBX manufacturer required on Telephony Server	See PBX documentation from PBX manufacturer and OnePoint Messenger integration guide for the specific PBX
Edit Telsrvr.ini on Telephony Server	See OnePoint Messenger integration guide for the specific PBX
Configure telephony applications and interface to PBX in Show N Tel Manager.	Show N Tel Manager*;* see Chapter 4 in Installation Guide in installation guide. Chapter 6 from *Show N Tel User's Guide* reproduced in Appendix G (summarized in the OnePoint Messenger Installation Guide)*;* see also *Show N Tel Manager User's Guide* on the OnePoint Messenger CD-ROM.
Configure Telephony Server	Microsoft Management Console (see Table 1-4 here and "Telephony Server Installation and Configuration Tasks", on page 97 in Chapter 3)

Table 1-3 Perform User Administration

Task	Perform using
Modify configuration, communication settings	Exchange Administrator application; *Microsoft Exchange Getting Started*
Set up user profiles and distribution lists and install desktop clients	Use Exchange Administrator application; See Chapter 5 of *Microsoft Exchange Getting Started* and Chapter 2 here; edit defaults in TS Admin—see Chapter 3
Set up address books	See Chapter 6 of *Microsoft Exchange Getting Started*
Modify or delete existing users	Exchange Administrator application; See Chapter 5 of *Microsoft Exchange Getting Started* and Chapter 2.

Table 1-4 Perform Telephony Server Administration

Task	Perform using
Set Automated Attendant	Telephony Server Administration on Telephony Server. See Chapter 3.
Set Business Hours	same as above
Set Classes of Service	same as above
Set Dial By Name	same as above
Set Dial Plan	same as above
Design Fax Cover Page	same as above
Manage Fax on Demand list	same as above
Manage Fax Settings for the system	same as above
Edit System Greetings	same as above
Set Mailbox Defaults	same as above
Set Mailbox Security	same as above
Set Pager retransmission wait time	same as above
Set System Parameters	same as above
Edit the TTS Dictionary when necessary	TTS Dictionary Editor. See Appendix E.

Task	Perform using
Use optional remote administration	Install Remote Administration link on an NT Server in the LAN. See Chapter 3.
Revise port assignments or add ports with new line card, if necessary	Line card configuration programs and Show N Tel Manager, both installed with OnePoint Messenger and described in the *OnePoint Messenger Installation Guide*. See also the *Show N Tel Manager User's Guide* on the OnePoint Messenger CD-ROM and Appendix G here.

Table 1-5 Run Diagnostics

Task	Perform using
Are the pieces in place?	Version Reader and System Validation Tool. See Chapters 5 and 6.
Are all systems running?	System Validation Tool, OnePoint Messenger Trace Manager with Windows Event Viewer (see Chapters 6 and 7)
Are all systems communicating?	RAS Overview (Chapter 5); System Validation Tool (Chapter 6); OnePoint Messenger Trace Manager, Windows Event Viewer, and SNT Trace (Chapter 7)
Are all systems communicating optimally?	System Reporting Program and Performance Monitor (Chapter 8)

Table 1-6 Set Up Users

Task	Perform using
Install network card on user PCs	See documentation from manufacturers of Ethernet or Token Ring NICs.
Install multimedia hardware (soundcard, speakers, microphone) on user PCs.	Software and guides from manufacturers of soundcard, speakers, microphone.
Install Windows on user PCs.	Windows 95/98/NT CD-ROMs
Set network connection to Exchange from user PCs.	Configure TCP/IP and use Ping to test (included with Windows)

Task	Perform using
Test Web connection to Exchange 5.5 Server from user PCs.	Internet Explorer 4.0+ or Netscape 4.0+; create user account on Exchange first
Install and configure full version of Outlook 98 on user PCs	Outlook or Microsoft Office Pro CDROMs
Install OnePoint Messenger additions (Unified Fax Printer, Outlook additions)	Install OnePoint Messenger additions from Telephony Server; see Part 11 of the *OnePoint Messenger Installation Guide*

Table 1-7 User Tasks

Task	Perform using
Unified messaging using Outlook	Outlook or Web Client on Web browser (Chapters 3 and 4 of the *OnePoint Messenger User Guide)*
Unified messaging using Web access	Internet Explorer or Netscape, accessing Web Client on Exchange (Chapter 4 of the *OnePoint Messenger User Guide)*
Unified messaging using telephone	Telephone User Interface (TUI) (Chapter 7 of the *OnePoint Messenger User Guide)*
Record/change name and greetings using PC	Outlook (Chapter 6 of the *OnePoint Messenger User Guide)*
Record/change name and greetings and TUI password using phone	Telephone User Interface (TUI) (hear TUI tutorial and see Chapter 7 of *OnePoint Messenger User Guide)*
Convert documents to faxes and send	Unified Fax Printer and Outlook (Chapter 5 of the *OnePoint Messenger User Guide)*
View and annotate faxes on PC	Outlook and Imaging for Windows NT/95 (Chapter 5 of the *OnePoint Messenger User Guide)*

Table 1-8 Perform System Maintenance

Task	Perform using
Manage OnePoint Messenger servicing, upgrades	Server Control and System Service Tool (Chapters 5 and 9)

Task	Perform using
Back up Exchange message store and configuration	Backup software included with Windows NT or third party software, such as Backup Exec (Chapters 5 and 9; see also Exchange online help and Back Office help)
Back up Telephony Server data	Backup software included with Windows NT or third party software, such as Backup Exec (Chapters 5 and 9)
Back up Telephony Server configuration	Backup software included with Windows NT or third party software, such as Backup Exec (Chapters 5, 9)

Table 1-9 Do Performance Tuning

Task	Perform using
Monitor computer performance	System Reporting Program and Performance Monitor (Chapters 5 and 9)
Measure Telephony Server use	System Reporting Program and Performance Monitor (Chapters 5 and 9)

2. Administering Unified Messaging on Microsoft Exchange

This chapter tells you how to perform the basic tasks necessary to administer the OnePoint Messenger unified messaging system on a Microsoft Exchange mail server. It contains the following sections::

Administering Unified Messaging on Exchange

OnePoint Messenger 2.0 supports Microsoft Exchange Server 5.5 (see "Microsoft" on page 239 of Appendix B) to provide mail services and manage user profiles. Microsoft Exchange Server Administrator, simplified here to "Exchange Administrator," is the Exchange Server program that you use to manage the privileges and other mailbox profile information of individual users and distribution lists.

OnePoint Messenger provides a *Unified Messaging* tab (property page) in Exchange Administrator for each person and distribution list with an Exchange account. To administer your OnePoint Messenger unified messaging system on Exchange, edit the Unified Messaging tab for each user and distribution list.

Managing Feature Licenses

Before you assign unified messaging permissions in Exchange Administrator, you must:

- Install and configure the necessary hardware and software to support unified messaging (see Appendixes A and B of the *OnePoint Messenger Installation Guide*.)

- Purchase and install enough unified messaging user licenses. For more on OnePoint Messenger feature licenses and on using License Install to install them, see "Upgrading OnePoint Messenger Feature Licenses" on page 220 in Chapter 9 of this guide or see Chapter 5 of the *OnePoint Messenger Installation Guide*.

- After acquiring the licenses, assign the telephony applications that support them to line card ports, then start them. For details, see Chapter 4 of the *OnePoint Messenger Installation Guide.*

After completing those tasks, you can give unified messaging services to users in Exchange Administrator. Create a profile for a user in Exchange Administrator in the standard way, then edit each user's Unified Messaging tab to add profile information and assign unified messaging services.

You only need enough Unified Messaging User licenses for users to whom you assign Full Unified Messaging. Of course, you need an Exchange user license for each user profile, except for *Custom Recipients* (as defined by Exchange) and distribution lists. The second license level is **Voice and Fax Mail**. You can assign Voice and Fax Mail to as many users as you want. Voice and Fax Mail is the default

permission level, because having all Exchange users set up this way enables callers to leave voice messages for all of these users. The constraint is that you might not have enough voice and fax ports and port resources available to handle the traffic.

The lowest unified messaging permission level is **None**, which provides no unified messaging services. The permission level makes these mailboxes unavailable from a telephone.

Reassigning Licenses

In order for you to assign unified messaging to a user, a Full Unified Messaging ("Full UM") license must be available to assign. To provide Full Unified Messaging to a new user in Exchange Administrator when you have already assigned all available unified messaging licenses, you must either purchase more user licenses or reassign a license from another user.

Some latitude is designed into OnePoint Messenger license enforcement. When a user profile is deleted in Exchange Administrator, there is no immediate notification sent to the OnePoint Messenger license management software. To compensate for this, the OnePoint Messenger licensing software allows the number of users who may be assigned Full Unified Messaging to exceed the number of purchased Full Unified Messaging licenses by 5%, rounded up.

For example, if the number of Full Unified Messaging licenses purchased = 10, then the number of Full Unified Messaging users allowed is 10 plus 5% of 10 (= 0.5), which, rounded up = 1 to yield a total of 11 available licenses. The number of Full UM licenses used is synchronized with the user database daily to correct for discrepancies between the counter and the actual number of Full UM users.

Alerts appear if you attempt to assign a Full UM license when all licenses are in use or if you are within 5% of the license allotment.

There is a way to reassign Full Unified Messaging licenses more quickly. Edit a user profile to downgrade the user's OnePoint Messenger permissions from **Full Unified Messaging** to **None**. The user's Full UM license can then be allocated to another user without having to wait for the next Full Unified Messaging license synchronization period. For details, see "Operation of OnePoint Messenger on Exchange" on page 86 and "Deleting Users" on page 78.

Using Virus Checking Software

Only Network Associates Groupshield (McAfee VirusScan) above version 4.03 and above are officially qualified for use with OnePoint Messenger. Use other virus-checking software at your own risk.

It is necessary to exclude virus checkers from scanning the Fax and VPIM Gateways. Messages that use these portals can still be checked in the Exchange store. One result of not excluding these gateways is that CPU utilization can go up to 100%.

To exclude the fax and VPIM gateways from virus scanning:

1   In **Exchange Administrator**, expand **Configuration**, then **Servers**, then [**server name**], then **Network Associates Groupshield**.

2   Open its **Properties** and select the **On-Access (Mail boxes)** tab, as shown in Figure 2-1.

3   Click **Exclusion List**.

4   In the Select List dialog that opens, click **Add Mailbox**.

5   Add the "**FAX Gateway**" and "**Unified Messaging VPIM Gateway**" mailboxes. The result is as shown in Figure 2-2.

Figure 2-1   Network Associates Groupshield Properties

Figure 2-2   Network Associates Groupshield, Exclusion List
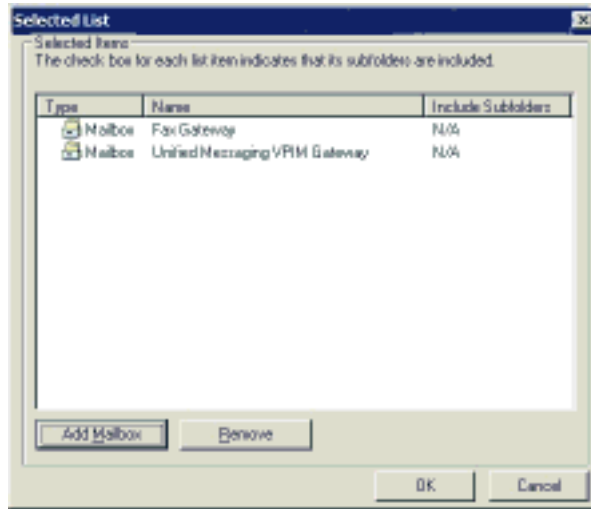
Managing Users on Multiple Exchange Servers

OnePoint Messenger allows you to manage unified messaging privileges for users on multiple Exchange Servers. OnePoint Messenger uses the server replication feature of Exchange to automatically install its Exchange Extension through the primary Exchange Server to secondary Exchange Servers. You can then edit the Unified Messaging tab in user profiles on each server. The *primary Exchange Server* is the one that you designate using the OnePoint Messenger Configuration Wizard as the Exchange Server with which Telephony Server will communicate. Secondary Exchange Servers are those that you designate in Exchange Administrator as part of the same Exchange site with the primary Exchange Server. OnePoint Messenger users whose profiles and mailboxes are on secondary Exchange Servers receive and send telephone messages to and from the Telephony Server through the primary Exchange Server.

Setting Up Remote Exchange Administration

To manage user mailboxes on a remote Exchange Server, install
Exchange Administrator on any Windows NT 4.0 Server or Workstation in the Exchange Server domain, including the Telephony Server.
The remote client does not need to be an Exchange Server. In
Exchange Administrator on the Exchange Server, give administration
rights to the user account managing Exchange administration on the
remote computer.

To grant administrative rights on Exchange to someone:

1   Select the level in the Exchange tree for which you want to grant
    rights.

2   Click the **Properties** button in the toolbar. The Properties dialog
    appears, as shown in Figure 2-3.

Figure 2-3   Exchange Administrator, Site Properties, Permissions Tab
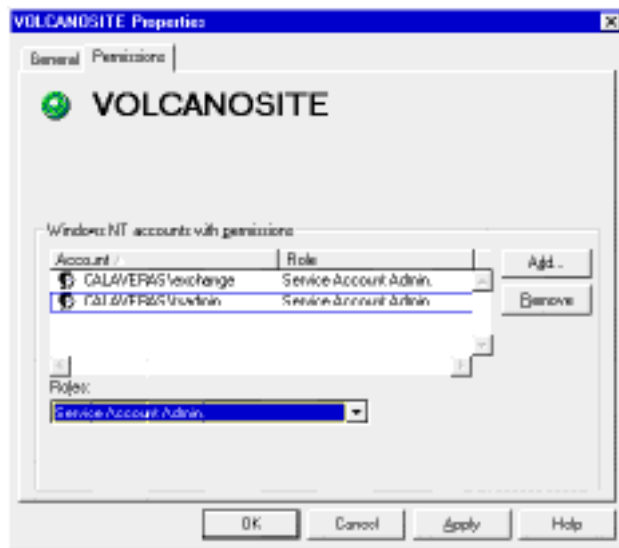
3   Click the **Permissions** tab.

4   Click the **Add** button on the tab.

5   Select the user from the domain list.

6   Select the administrative role for the user in the **Roles** list.

7   Click **OK**.

8   In Exchange Administrator on the remote client, click the drop-
    down arrow below the **File** menu, then select the Exchange
    Server that you want to manage from the list.

Remote Exchange administration is a standard Exchange feature. This guide assumes that you are a trained Exchange Administrator, so this discussion is intended simply to explain that managing OnePoint Messaging users is accomplished by using this standard feature.

NOTE: For details on administering Telephony Server services, see Chapter 3 (page 89). For details on managing Telephony Server from another computer, see "Performing Remote Management" on page 174 in Chapter 5.

Revising the Telephony Server/Exchange Integration

Configuration Wizard (Config Wizard) is a Telephony Server utility that enables you to revise the integration settings between the Telephony Server and the primary Exchange Server and to move OnePoint Messenger components from the Telephony Server to the Exchange Server.. Run Config Wizard when you install or reinstall Telephony Server, when you replace the Telephony Server or change it name. For details, see Chapter 5, "Upgrading, Removing, Moving, and Reinstalling OnePoint Messenger" in the *OnePoint Messenger Installation Guide*.

Config Wizard runs as part of the OnePoint Messenger installation sequence (see Procedure 5 in Chapter 3 of the *OnePoint Messenger Installation Guide*) to allow you to make these changes in addition to other integration options between Telephony and Exchange Servers:

- Identify a new primary Exchange Server (defined as the one with which Telephony Server communicates directly).
- Identify a new Telephony Server account on Exchange.
- Set the organizational folder role on Exchange to publish client forms. (For details, see Chapter 3 in the *OnePoint Messenger Installation Guide*.)
- Assign administrator rights.
- Install or update the Exchange Extension, VPIM and FAX gateway software.

Config Wizard provides a sequence of dialogs to make configuration choices. Each dialog has a context-sensitive Help button. The help topics are part of the combined Administrator Help (TSAdmin.chm).

After installation, you can run Config Wizard again when you need to revise any of the configuration settings and deliver upgraded OnePoint Messenger software to Exchange. If there is more than one Exchange Server within the Exchange site, the Unified Messaging tab

will be replicated to the other servers automatically. There are no administrative steps required for this.

To change the Exchange/Telephony Server integration:

1 Use Telephony Server Monitor (TSMon) to stop Telephony Server services before running Config Wizard. For details on using TSMon, see "Operating the Telephony Server" on page 166 in Chapter 5.

  a. Start TSMon from the OnePoint Messenger program group.

  b. Click either the **Stop** (after calls complete) or **Stop Immediately** (interrupt current calls) buttons.

  c. Set **Start Mode** to manual.

  d. After the "Stopped" status message appears for all listed services, quit TSMon.

  e. Reboot.

  f. Start TSMon and verify that no OnePoint Messenger services have started.

  g. Quit TSMon.

2 Start Config Wizard from the OnePoint Messenger program group.

3 After entering your desired Telephony Server account name, password, mailbox alias, profile and display names, and the name of the primary Exchange, you can choose between a full configuration/install or a custom install, which allows you to choose any of these options:

  • Give the "log on as a service" right to the newly identified Telephony Server local administrator account in NT's User Manager account management program on the Telephony Server.

  • Revise the administrator account.

  • Create or revise the Exchange mailbox created for the Telephony Server.

  • Create or revise the Telephony Server administrator profile on Exchange.

  • Install the Exchange Extension from Telephony Server on the identified Exchange Server.

- Set the organizational folder role on Exchange to publish client forms.

- Create or update the Telephony Server registry with the new information.

- Create or update the Exchange Server registry with the new information.

- Install the VPIM Gateway

- Install the FAX Gateway

4   After Config Wizard completes its revisions, use TSMon to restart the Telephony Server services. When you have verified that services have started, you can change the start default to automatic.

Designating a New Primary Exchange Server

When you use Config Wizard to designate a new primary Exchange Server and remove the old primary Exchange Server from the domain, you must manually reenter the configuration data on the Unified Messaging tab of each mailbox that you move from the old Exchange Server. If you simply create a new primary Exchange Server while leaving the previous primary Exchange Server as a site member, you do not need to move user accounts or edit their profiles.

Users whose mailboxes are moved from one Exchange Server to another must create a new mail transport profile or revise the existing one to identify the new Exchange Server.

Installing a New Telephony Server

If you replace the old Telephony Server with a new one, you need to make changes in Exchange if you give the new Telephony Server a different computer name than the old Telephony Server. In each user's Exchange profile, enter the new Telephony Server name in the Telephony Server field. If the new Telephony Server has different settings than the old Telephony Server, those changed settings will only be reflected in profiles created after the new Telephony Server is installed. If you wish to have existing profiles conform to any new defaults (COS, passcode, or language), enter them manually.

For details on moving or installing a new Telephony Server, or for removing OnePoint Messenger components, see Chapter 5, "Upgrading, Removing, Moving, and Reinstalling OnePoint Messenger", in the *OnePoint Messenger Installation Guide*.

Accounts Created by OnePoint Messenger at Installation

During installation, OnePoint Messenger creates three mailboxes on the primary Exchange Server—a test user mailbox, a Telephony Server mailbox, and an Outside Caller mailbox, each with default Voice and Fax privileges:

• The Outside Caller mailbox is required to provide a sender mailbox for messages sent by outside callers to OnePoint Messenger users.

• The TS Test User mailbox is for testing system integrity.

• The Telephony Server account is required to provide access for Telephony Server communication with Exchange.

   CAUTION! Do not delete these accounts unless you uninstall OnePoint Messenger.

NOTE: If you uninstall OnePoint Messenger, use Exchange Administrator to delete these three accounts. For details, see "Reinstalling or Removing OnePoint Messenger" on page 218 in Chapter 9.

NOTE: You can also use the Telephony Server account as a collection point for user support requests or as the Attendant mailbox. For more on the Attendant mailbox, see "Supporting Users without Dedicated Extensions" on page 75.

Using Microsoft Exchange Server Administrator

The following discussion reviews the basic Exchange administration tasks in the course of telling you how to assign OnePoint Messenger permissions to users and to remove and reassign permissions. These instructions on the use of Exchange are not intended to substitute for the required Exchange administration and Windows NT training and for the official Microsoft Exchange documentation.

All OnePoint Messenger Exchange tasks are performed in Microsoft Exchange Server Administrator. To start Microsoft Exchange Server Administrator, from the **Start** menu, choose **Programs**, then **Microsoft Exchange**, then **Microsoft Exchange Server Administrator**.

Managing OnePoint Messenger Users

With OnePoint Messenger, you have many choices for the privileges to assign users. The privileges you assign should be determined by the resources you have at the server level to allocate among users, the needs your users have, and the resources they have at the client level, such as ready access to multimedia computers.

As summarized above and detailed in Chapter 9 (page 220) and the *OnePoint Messenger Installation Guide*, you can set which resources are available partly by purchasing feature licenses and installing messaging hardware. Then you can allocate OnePoint Messenger rights judiciously for your users. For each Exchange user, you can select one of the three general OnePoint Messenger feature levels, as described below. For both the Full Unified Messaging and Voice and Fax Mail user, you can select from a range of privileges, partly by assigning each user one of the 10 Classes of Service (see "Class of Service" on page 114 in Chapter 3), which set limits on:

- Text-to-Speech access to e-mail from the telephone

- Pager access to unified messages

- Call-Me sessions

- Sending of VPIM messages

- Receiving and sending faxes

Another setting you can choose in the Exchange profile is the use of the Message Waiting Indicator (MWI). This may seem like a trivial privilege, but providing MWI requires dedicating at least one port in Show N Tel Manager to perform that function (see Chapter 4 in the *OnePoint Messenger Installation Guide* or *OnePoint Messenger Getting Started Guide*.) MWI ports are not available for taking calls.

OnePoint Messenger User Licenses

Since OnePoint Messenger adds unified messaging to Microsoft Exchange, a OnePoint Messenger user must have an Exchange mailbox, which requires an Exchange user seat license. Once a user has an Exchange mailbox, you can set up one of three general levels of OnePoint Messenger rights for that user:

- **Voice and Fax Mail ("V&F"):** This allows the user full voice and fax messaging through a telephone, but no access to text content through the telephone (i.e., no TTS, no enumeration of nor control of the standard e-mail message). You may not install the desktop client components for these users, but the V&F user can receive and play unified messages in Outlook or Web browsers. Web Client forms are not available. V&F users do not count against your OnePoint Messenger user license limit.

- **Full Unified Messaging ("Full UM"):** This feature level requires the user license described in Chapter 9. It allows the user to have full functionality from both the telephone and the desktop, subject to the limitations you set on the user's Unified Messaging tab or through a Class of Service (see Chapter 3), or through system resource limitations (e.g., hardware availability and features that are enabled by site licenses (see Chapter 9). It provides the right to install OnePoint Messenger on the desktop, giving unified messaging through Outlook and the ability to create faxes using Unified Fax Printer. If your organization has purchased the Web Client license, a Full UM user can access and create unified messages through the Web Client. Full unified messaging can be provided through any telephone, including access to all e-mail.

- **None:** An Exchange user with this OnePoint Messenger mailbox profile setting does not have telephone access to the Exchange mailbox, no Web Client forms, and no right to install OnePoint Messenger on the desktop. An Outlook user with this setting can receive and play unified messages using standard Windows ".wav" file format players.

Custom Recipient

A Custom Recipient mailbox requires neither an Exchange license nor a OnePoint Messenger license, so it does not fit neatly in the preceding list, but it plays a role in determining available resources, because callers use Telephony Server resources when they send messages to Custom Recipients. You can create a Custom Recipient

mailbox to enable e-mail messaging and/or another mailbox for VPIM messaging for any recipient who does not have a local Exchange mailbox. See "Supporting Voice Profile for Internet Mail (VPIM)" on page 80.

A typical case in which you create Custom Recipient mailboxes is when your organization has more than one Exchange site or a second e-mail system and/or voicemail system. You use Custom Recipient mailboxes to allow your Exchange users to easily address messages to those other members of your organization. If you enable the Voice and Fax Mail setting on the Unified Messaging tab for a Custom Recipient, you are making that Custom Recipient available to callers.

Adding OnePoint Messenger Users

There are two ways to add OnePoint Messenger users:

- Configure unified messaging for an existing Exchange account.

- Create a new Exchange account, then configure unified messaging for it.

  In both cases, to change settings, see the section "Operation of OnePoint Messenger on Exchange" on page 86 in this chapter.

NOTE: The OnePoint Messenger Installation Program creates Telephony Server administrator and test user unified messaging accounts in Exchange. Procedures 11 and 12 of the *OnePoint Messenger Installation Guide* cover the configuring of the TS Test User account in Exchange and setting up the test user PC. Chapter 2 in the *OnePoint Messenger User Guide* also describes setting up Outlook and the OnePoint Messenger Desktop Client on the client PC.

To add a new OnePoint Messenger user:

1 In Exchange Administrator, select the **Recipients** container. To enable the Unified Messaging tab for the user, the profile must be created only in the Recipients container (and not even a subfolder of the Recipient container). This includes Custom Recipients and distribution lists that you want to make addressable from a telephone.

2 From the **File** menu, choose **New Mailbox**. The Recipient tabs appear.

3 Complete the **General** tab. You can populate the other standard Exchange tabs in any order, as necessary.

4   Select the **Unified Messaging** tab. The example in Figure 2-4
     shows an existing user. A new user configuration screen displays
     "New User" with blank fields, except for fields that have settings
     that are populated by the defaults set through TS Admin (the Uni-
     fied Messaging Snap-in) described in Chapter 3 (page 89).

     The fields with defaults are Language and Password. To edit
     those settings, see "Mailbox Defaults" on page 129, and "Secu-
     rity" on page 134, respectively, in Chapter 3. In addition, the
     Mailbox Defaults page of TS Admin sets defaults for message
     playback through telephones. Users may change any of those set-
     tings except for the TUI prompt language.

     For instructions on setting Class of Service (COS), see "Class of
     Service" on page 114 in Chapter 3.

Figure 2-4   Unified Messaging Tab

NOTE: The telephone number field in the Phone/Notes tab of
Exchange is not used by OnePoint Messenger.

5   On the **Unified Messaging** tab:

     In the **Feature Level** area**,** select one of these three options**:**

     •   **None**—This feature level provides no OnePoint Messenger
          permissions. Do not complete the other fields on the tab.

- **Voice & Fax Mail**—This feature level allows the user full voice and fax messaging through a telephone.

- **Full Unified Messaging**—This allows the user full functionality from both the telephone and the desktop. You may install OnePoint Messenger on the user's PC.

If you select Voice & Fax Mail (V&F) or Full Unified Messaging (Full UM) for the user, complete the rest of the tab, then click **More** to complete the **Fax & Pager** window.

For details on the feature levels, see "Managing OnePoint Messenger Users" on page 63.

In the **Telephony Server** field, select the computer name of the Telephony Server. It is entered automatically by Configuration Wizard during setup (see "Revising the Telephony Server/ Exchange Integration" on page 59.) If the correct Telephony Server computer name is not displayed in the **Telephony Server** field, click **Select Telephony Server** to open the **Select Telephony Server** dialog, then select the Telephony Server from the list of computers on the LAN, as shown in Figure 2-5. You can type the server name with or without the preceding "\\". An alert appears if you select a computer that is not the Telephony Server, or if the Telephony Server is unavailable.

Figure 2-5   Select Telephony Server

CAUTION! Do not use the Telephony Server field to associate Exchange with a new Telephony Server. Use Config Wizard on the new Telephony Server.

In the **Mailbox Number** field, create a mailbox number for the user. Generally, the mailbox number is the same number as the user's telephone extension, and that is why the Telephone extension field is filled in automatically with the mailbox number, but mailbox numbers must provide a unique address for each user, while extensions are not always assigned one to each user.

In the **Numeric Password** field, enter a numeric passcode for the user to access the mailbox through the TUI. The user can change this through the TUI or through Outlook. Enter the same passcode in the **Confirm Numeric Password** for verification.

In the **Telephone Extension** field, enter the user's telephone extension that was assigned on the PBX.

In the **COS (Class of Service)** field, click the arrow by the **COS** edit box to select a class of service (COS) for the user. Classes of service are sets of privileges that you edit in the Class of Service node in TS Admin (Unified Messaging Snap-in to Microsoft Management Console) on the Telephony Server. When you access a user's Unified Messaging tab, the current class of service settings are retrieved from Telephony Server. If the COS name and/or permissions assigned to a user are changed in the Class of Service node, the changes apply immediately in the user's profile. For users with the "Voice and Fax Mail" option (V&F), the TTS and Call-Me features controlled by the COS have no relevance.

Edit a COS in the Class of Service node in TS Admin (see "Class of Service" on page 114 in Chapter 3.) The COS options include fax, TTS, paging, sending VPIM messages, and voice message time limit.

In the **Language** field, to assign a TUI prompt language for the user's mailbox other than the default language listed in the **Language** field, click the arrow to select another from the listed available languages. The default language listed is the one that you select on the **Mailbox Defaults** page in Microsoft Management Console (see page 129.)

NOTE: Only the prompt languages that you select to install during the OnePoint Messenger installation appear in the list. English (UK), English (US), and Latin American Spanish are currently generally available. You may only install the languages that you have purchased. You can run the Installation Program again to add more languages.

Click **Enable Tutorial** to play the TUI tutorial for the user on the user's first call to the Message Center. The tutorial guides the user through recording a greeting and spoken name, and selecting a passcode.

Click **Enable Message Waiting Light** to enable the MWI signal for the user's telephone when the user receives unified messages. Because turning the MWI on and off takes telephony port resources that may be scarce, you may choose to disable this feature for certain telephones. An example would be a telephone used by more than one user or by a user who accesses messages primarily from a PC. For more on MWI, see "Managing OnePoint Messenger Users" on page 63.

6 Click **More** to open the **Fax & Pager** dialog, as shown in Figure 2-6. When the Telephony Server is incorrectly specified in the Telephony Server field or it is unavailable, the More button is not available (grayed out).

The COS that you select for this user on the first page of the Unified Messaging tab controls what options you can set in the **Fax & Pager** dialog.

- If the COS definition (set in the Class of Service node in TS Admin—see page 114) does not include paging notification, paging entries that you make in the **Fax & Pager** dialog will have no effect.

- If the COS definition disables faxing, no fax entries that you make in the **Fax & Pager** dialog will have any effect.

Figure 2-6 Fax & Pager Tab

7   On the **Fax & Pager** window (reached from the **More** button on the Unified Messaging tab), specify the following information:

Fax DID/DNIS—Enter an extension that the user can publish to the world as his or her fax machine telephone number. This number is not actually connected to a fax machine. The PBX administrator assigns the extension to the user as a second line, with all calls automatically routed to voice mail. When a call comes in to that number, the PBX routes it to OnePoint Messenger, which recognizes the extension as a fax reception extension and invokes the appropriate TUI and fax reception resources on the port to receive the fax into the user's Exchange mailbox.

Fax Delivery Number—Enter the number of the default fax machine to which the user wishes to download text e-mail and faxes. Enter just an extension if the user prints faxes to an office fax. Enter the full phone number for a remote fax. If you do not specify a number here, faxes are sent to the fax number specified in the System Information page of TS Admin (see page 141 in Chapter 3.)

Pager—Specify whether the user will be paged when any unified message is received (**Page All**), only when an urgent message is received (**Page Urgent Only**), or not at all (**No Paging**). The user can choose between Urgent Only and Page All from the TUI.

Pager Type—Select the page type: **Direct Access, PIN Access**, **E-mail**, or **Message Delivery**. Direct Access means the user's pager is accessed directly by dialing its phone number. PIN Access is a two-step process of dialing the phone number and then entering an ID.

Pager Access Number—Enter the telephone number of the user's pager or of the telephone that the Telephony Server should call to alert the user of new messages. See the **Message Delivery** field, below.

Pager PIN—If the user requires PIN access, enter the user's pager ID. In the Pager PIN field of Figure 2-6, two commas have been entered before the PIN to cause a two-second delay in the delivery of the PIN in order to accommodate delays in the paging service answering process.

Message Delivery—Select this to have the system call the user at the phone number you enter in the **Pager Access Number** field. When the user answers, the telephone user interface (TUI)

announces that there is a new unified message, then gives the user the option to log in to play the message. This feature is especially useful for users who travel often and have cell phones that can be called when they have messages. For details on the TUI, see Chapter 7 in the *OnePoint Messenger User Guide*.

EMail—If the user's pager allows delivery of e-mail, click this, then enter the pager's e-mail address in the **Pager Access Number** field.

8   Click **OK** to complete the configuration.

NOTE: You can test the functioning of MWI and pager notification for a particular user with the OnePoint Messenger utility cvNotify. For more information, see "Using cvNotify to Test MWI and Notification Server" on page 188 in Chapter 6 of this guide.

Providing the Attendant Mailbox

The Attendant mailbox is an optional element in the configuration of the telephone interface. After business hours (as defined on the Business Hours page—see "Business Hours and Holidays" on page 113 in Chapter 3), the mailbox you designate on the System Information page of TS Admin (formally called the Unified Messaging Snap-in to the Microsoft Management Console) collects messages from callers who dial the Automated Attendant or Message Center numbers and do not respond to prompts to enter a extension or mailbox number. See "System Information" on page 141 in Chapter 3.

The mailbox you assign as the Attendant mailbox depends to some degree on who you want to manage it. Typically, administrators create and assign to this function a mailbox not identified with a particular person. You can assign the Voice and Fax Mail feature level to the mailbox, so that it does not cost a OnePoint Messenger user license. Record a general greeting for it such as:

"After the tone, you may record a message in the attendant mailbox. Please state your name, your callback telephone number, the time you called, and indicate to whom your message is intended."

Alternatively, some administrators assign the TS Administrator mailbox to this function. This account is automatically created by the OnePoint Messenger Installation Program (see "Accounts Created by OnePoint Messenger at Installation" on page 62.) To use this account, assign a unique mailbox number to it, then enter the same number on the System Information page of TS Admin.

Providing Messaging to Users with Limited PC Access

In combining two messaging universes—telephone messaging and e-mail—along with the addition of desktop voice and fax messaging, we have created many new messaging opportunities, but we have also compounded the potential for messaging discontinuities.

OnePoint Messenger users set up with the Voice and Fax Mail (V&F) feature level cannot access text messages if their access is limited to the telephone. This section provides ways to address that problem.

Users with some computer access: When a member of your organization has access to a computer, but is primarily a telephone user, the ideal solution from the user's perspective is to set up the user with Full Unified Messaging (Full UM), so that he or she can access both voice and text messages from a telephone. If you do not want to use a Full UM license for the person, here are two other options:

• If you set up a user mailbox with the V&F permission level, this user might ask others to send voice mail rather than text e-mail to this mailbox so that this user can access the voice messages from the TUI.

  You can help to minimize text e-mail sent to this mailbox by hiding its address from the Exchange directory. The result is that the TUI is still able to direct the caller to the user's extension or mailbox, while, because Exchange does not display the mailbox address, the only way for desktop users to address messages to the mailbox is for them to manually enter the complete SMTP address. To hide the address, follow Procedure 1 on page 73.

  CAUTION! When you hide the address, it is only available at the TUI as long as it is not necessary to rebuild the directory on the Telephony Server. This happens when you reboot the Telephony Server or run Directory Administration. Before you do so, you must unhide the address until the directory has been rebuilt.

• You can further reduce or eliminate text e-mail sent to the V&F mailbox by removing one or more addresses from the E-mail Addresses tab of the mailbox. For example, removing the SMTP address would make it impossible for others to send e-mail to that address. Use Procedure 2 on page 74.

Users with no computer access: When a member of your organization has access to messaging only through a telephone, the ideal solution from the user's perspective is to set up the user with Full Unified Messaging (Full UM), as mentioned above, so that the user can receive all content types through the telephone. If you do not want to use a Full UM license for the person, you can create a mailbox with the Voice and Fax Mail (V&F) permission level, then remove the e-mail addresses. Use Procedure 2 on page 74.

Even with only the option of using a telephone to leave messages, one text e-mail possibility remains when a Full UM user uses a telephone to forward a text message to the V&F user. If the Full UM sender does not add a voice preamble, the V&F recipient hears only the sender's name.

SMTP variant: A variant of removing e-mail addresses is to leave the SMTP address in the E-mail Addresses tab so that determined senders of e-mail could enter the SMTP address. The user can set the Out of Office Assistant in Outlook to inform those senders of e-mail that the recipient has access only to voice messages.

Procedure 1

To remove a user from the address list that appears to OnePoint Messenger e-mail users:

1 In the Exchange Administrator window, select **Recipients** from the appropriate **Organization** and **Site** in the tree view.

2 Double-click the name of the desired user. The user's profile tabs appear.

3 Select the **Advanced** tab.

4 Select **Hide from address book**, as shown in Figure 2-7.

5 Click **OK**.

Figure 2-7   Exchange Administrator, Advanced Tab

To make changes to a mailbox with "Hide from address book" selected:

1   The profile no longer appears in the Recipients folder until you choose **Hidden Recipients** from the **View** menu.

2   Double-click the profile and make changes as usual.

3   If you make changes on the Unified Messaging tab, deselect **Hide from address book** in the **Advanced** tab.

4   Click **OK**.

5   Allow time for the directory synchronization.

6   Test the changed Unified Messaging tab setting from the TUI.

7   Reopen the profile and reselect **Hide from address book** in the **Advanced** tab, then click **OK**.

Procedure 2

To remove e-mail addresses from the user's profile:

1   In the Exchange Administrator window, select **Recipients** from the appropriate Organization and Site in the tree view. A list of existing users displays in the right pane.

2   Double-click the name of the desired user. The user's profile tabs appear.

3   Select the **Email Addresses** tab.

4   Select an e-mail address, then click **Remove**, as shown in Figure 2-8.

5   When the warning message "Are you sure you want to remove this e-mail address" appears, click **Yes**.

6   You can remove one or more addresses. When finished, click **OK**.

Figure 2-8   Exchange Administrator, E-mail Addresses Tab
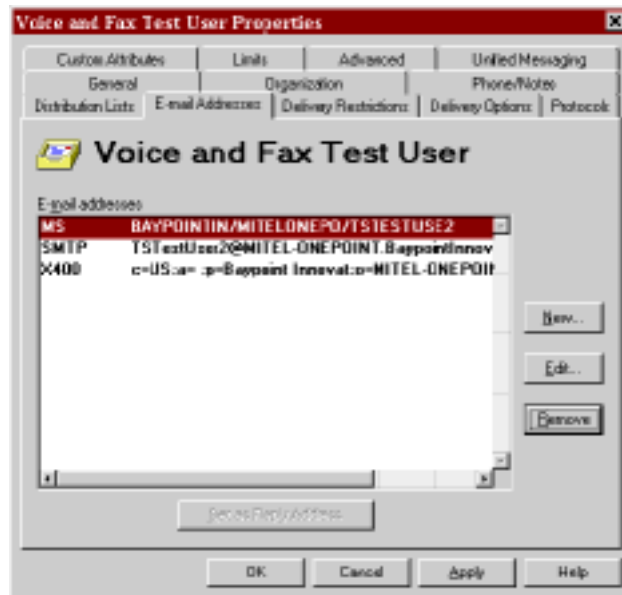
Supporting Users without Dedicated Extensions

For users who share a telephone, the telephone extension can be assigned to only one user's mailbox. This is a problem in two ways:

- All unanswered calls to that extension are routed to that mailbox.

- Users without unique extensions are not listed by the Automated Attendant, the component of the OnePoint Messenger Telephone User Interface (TUI) that rings telephones.

A workaround is to manage the mailbox as a group mailbox, with a name and greeting that indicates to the caller that the mailbox is

shared, like a home answering machine. For example, the recorded name might be "Phone number 123-4567". The greeting might be:

"No one is currently available at this extension to take your call. If you would like to leave a message for <name 1>, <name 2>...or <name n>, please do so after the tone."

Fortunately, mailbox numbers can be assigned to users who do not have unique extensions, so their mailboxes are available through the Message Center interface of the TUI. This would afford the caller the ability to leave a message in the private mailbox of the intended recipient. However, since there is no automatic facility to route the caller to the intended private mailbox from the unanswered phone or from the phone's mailbox, the mailbox greeting must explain to the caller what to do. For example, the greeting might be as above, plus:

"To leave a private message, press the star key. At the Message Center greeting, press 2345 for Joe User, 2456 for Sally User..." etc.

Creating Mailboxes for Users Who Share a Telephone

The convention for assigning a mailbox number to a user is to copy the user's telephone extension. In fact, when you enter a number in the Mailbox Number field of the Unified Messaging tab, an auto-fill function copies that number to the Telephone Extension field. The purpose is partly heuristic and partly to simplify the assignment of unique mailbox numbers. In the case of a user without a unique extension, in the **Mailbox Number** field, enter a unique number that conforms with your dial plan (see "Dial Plan" on page 119), then delete that automatically entered number from the **Telephone Extension** field. To ensure that you have assigned a unique mailbox number, OnePoint Messenger validates the number when you click **OK**.

Changing User Profile Settings

You may want to change the settings in a particular user's profile, from changing a default fax number to removing a unified messaging license or totally removing the person's profile.

In addition to individual changes, you may switch the user to another change the Telephony Server. If you install a Telephony Server with a new computer name, you must edit users' profiles to point to that new Telephony Server. This is required to provide services such as MWI, Call-Me/Meet-Me, and license checking.

Changes you make to Telephony Server settings take effect automatically on all user profiles. For example, if you revise a COS, the

revised settings take effect within ten minutes (during a routine DAS update—see "DAS Functional Details" on page 230 of Appendix A.) The only variations on that rule are the change of Telephony Server mentioned above or if you have a profile open in Exchange when the Telephony Server setting that affects that profile changes. In that case, the change takes effect when you close the profile.

Modifying the unified messaging settings of a OnePoint Messenger user entails almost the same process of editing the Unified Messaging tab as described in "Managing OnePoint Messenger Users" on page 63.

To modify the unified messaging settings of a OnePoint Messenger user:

1 In **Exchange Administrator**, select **Recipients** from the appropriate **Organization** and **Site** in the tree view. This displays a list of existing users.

2 Double-click the name of the desired user. The user's profile tabs appear.

3 Select the **Unified Messaging** tab. The user's name appears at the top of the tab.

4 Modify the information on the tab as necessary, as described in "Managing OnePoint Messenger Users" on page 63. If you change **Full Unified Messaging** to **None** in the **Feature Level** area**,** the other options on the tab are disabled.

5 Click **More** to open the **Fax & Pager** dialog.

6 Modify the fax and pager information as necessary.

7 Click **OK** to confirm your changes in the dialog and again on the **Unified Messaging** tab.

Changes are propagated to the Telephony Server during routine DAS polling. Modified permissions are propagated in about ten minutes. Users completely deleted from Exchange are removed from the DAS cache at 2 A.M. As discussed in "Reassigning Licenses" on page 55 in this chapter, you may choose to downgrade a user's Unified Messaging permissions to **None** before totally deleting the user from Exchange so that the user license becomes immediately available. This also expedites the update of the user deletion to the DAS cache. See "DAS Directory Synchronization" on page 231 of Appendix A of this guide for details.

When, in Microsoft Management Console, you revise the settings of a Class of Service (COS), the new settings of that COS are propagated to all users who were previously assigned that COS.

If a user is using a messaging client when you change his settings, the changes do not take effect until that user logs off.

Deleting Users

Deleting users in a OnePoint Messenger environment has several meanings:

- You can remove the unified messaging license of a user—in the Unified Messaging tab, change the Feature Level from Full Unified Messaging to Voice and Fax or None.

- You can remove the user account totally from Exchange.

- After deletion, the user's greeting may still play to callers. To remove the greeting quickly, reduce the user's OnePoint Messenger permissions to None before removing the user from Exchange.

To reduce or remove a user from the OnePoint Messenger unified messaging environment:

Follow the procedure above in "Operation of OnePoint Messenger on Exchange" on page 86 to select **Voice & Fax Mail** in the **Feature Level** area to reduce the user's permissions, or **None** to remove all OnePoint Messenger privileges.

The second type of deletion involves removing a user or distribution list from the Exchange database. This is a standard Exchange operation. There is no extra step involving OnePoint Messenger unless you want to immediately reallocate a Full Unified Messaging permission to another user, and you have no licenses available. See the discussion above in "Reassigning Licenses" on page 55.

To remove a mailbox from Exchange:

1   Select **Recipients** in the Exchange tree.

2   Select the user or distribution list name in the right pane.

3   Click the **Delete** button or choose **Delete** from the **Edit** menu.

The Directory Access Service (DAS) on the Telephony Server updates the access list on Telephony Server as soon as you make a change in Exchange, so after you make the change, a deleted user

calling for messages will have no access. A caller will be unable to leave a message for the deleted user.

Supporting Voice Profile for Internet Mail (VPIM)

OnePoint Messenger 2.0 supports the Voice Profile for Internet Mail (VPIM) RFC 2421 protocol, as described in "Standards" on page 29 in Chapter 1. This means that users of VPIM-compliant voice mail systems can send messages to OnePoint Messenger users, and, if the VPIM Send license is installed, OnePoint Messenger users can send messages to VPIM-compliant voice mail systems.

Supporting the Reception of VPIM Messages

With OnePoint Messenger 2.0 installed, when you create a new account in Exchange, a copy of the user's SMTP address is automatically rendered into a default VPIM address for the user. If you have Exchange users that were set up before OnePoint Messenger 2.0 was installed, you must manually create VPIM addresses for them.

In Exchange Administrator, you can view and edit addresses on the E-Mail Addresses tab of a user's Recipient Profile. Since standard voice mail systems typically are not designed to be able to enter alphabetical addresses for recipients, and Exchange addresses typically are alphabetical, you must create numeric VPIM addresses for your users, so they can receive messages from those standard voice mail systems.

You can also keep the alphabetical VPIM address that is created automatically when the user profile is created. People who use messaging systems that can send messages to alphabetical addresses can send VPIM messages to either the alphabetical or numeric VPIM address. Since the alphabetical address is a replication of the SMTP address, senders should find it easier to remember. One benefit of sending a message through VPIM is that, when OnePoint Messenger users at other organizations send unified messages through VPIM to your users, the unified message structure is preserved.

A VPIM address is composed in the same general form as the formal form of an SMTP address. The form is:

```
[vpim: <left hand side>@<right hand side>]
```

[] The brackets that begin and end the VPIM address are part of the formal Internet addressing standard.

"vpim:" The prefix signals the gateway type. "VPIM:" is case insensitive.

\<left hand side\> The area to the left of the @ sign contains the user's unique mailbox address. To communicate with legacy voice mail systems supporting VPIM, it must be a number and must be unique within the enterprise. To be sure of being unique, you can use the user's full telephone number, including area code.

@ This signals the beginning of the Internet domain address.

\<right hand side\> This is your Internet domain address. It can include the name of the mail server, but it must work with how your Domain Name Server routes with E-mail.

To create a VPIM address for your OnePoint Messenger users:

1   On the user's **E-mail Addresses** tab, click **New**.

2   On the **New E-Mail Address** dialog that appears, select **Other**, then click **OK**.

3   On the **Other Address Properties** dialog that appears, enter "`VPIM`" in the **E-mail type** field, then enter the VPIM address in the **E-mail address** field in one of several formats:

- `<The user's unique phone number>@<Internet domain name>`

   For example, if the user's phone number is 408/555-1212, and the Internet domain name is bluescreen.com, you would enter:

   `4085551212@bluescreen.com`

   This is the formal VPIM form, because phone numbers tend to be unique and are typically how voice mail systems identify their users.

- You can copy the user's SMTP address, so that the only difference would be the "SMTP" or "VPIM" prefix:

   `<user name>@<Internet domain name>`

   For unified messaging senders in other organizations, this form would be easier for them to remember.

- You might want to use a variant of the SMTP format that signals the VPIM address, such as:

   `<user name>VPIM@<Internet domain name>`

Supporting the Sending of VPIM Messages

A OnePoint Messenger user can send "*VPIM messages*" (messages sent to the VPIM addresses of users of VPIM-compliant messaging systems; the sending of the message requires that the Telephony Server perform a format conversion) if you install the OnePoint Messenger VPIM Send feature license and assign users a Class of Service (COS) that has the VPIM feature enabled. For more on feature licenses, see "Upgrading OnePoint Messenger Feature Licenses" on page 220 in Chapter 9. For more on COS, see "Class of Service" on page 114 in Chapter 3.

In Outlook or Web Client, it is possible to address a message to a VPIM-compliant messaging system by entering the recipient's VPIM address exactly as entered in the recipient's profile on the target system. The easy way to do this is to capture the intended recipient's VPIM address by replying to a message from him. The recipient's VPIM address is typically the recipient's extension and the mail server Internet domain name, entered in this form:

`[VPIM:<phone number>@VPIM.<Internet domain name>]`

From a telephone, it is not possible to enter such a string, so OnePoint Messenger relies on Custom Recipient accounts, which you create, that have VPIM addresses.

Creating VPIM Custom Recipients

A *Custom Recipient* is a routing account created in Exchange Administrator. It is designed to make it easy for your users to address messages to users of other messaging systems. A Custom Recipient account does not count against either your Exchange or OnePoint Messenger licenses.

You can create Custom Recipient mailboxes for those recipients who are likely to be the frequent recipients of VPIM messages from your users. Such recipients are typically users of another voicemail system in your organization. In order for a VPIM Custom Recipient address to appear in your Telephony Server directory, you must create it in the Recipients folder, so that the Unified Messaging tab is available.

By default, "**Voice and Fax Messaging**" is selected on the Unified Messaging tab as the Custom Recipient's unified messaging level so that OnePoint Messenger's Directory Access Service (DAS) can include that Custom Recipient in its directory cache on the Telephony Server. That directory is available to callers to dial extensions from the Automated Attendant or to send messages to mailboxes.

In the case of a Custom Recipient who does not have a local extension, do not enter a telephone number for him, so the Automated Attendant would not attempt to provide access to the Custom Recipient's telephone.

Enter a routing mailbox so that it is available through Dial by Name (DBN) at the Message Center. DBN would announce the Custom Recipient name using Text-to-Speech, enabling callers to send VPIM messages to that Custom Recipient.

Also, you can create distribution lists that include VPIM recipients. See "Creating Distribution Lists" on page 85.

To create a VPIM Custom Recipient:

1   In **Exchange Administrator**, select the **Recipients** container.

2   From the **File** menu, choose **New Custom Recipient**.

3   On the **New E-Mail Address** dialog that appears, select **Other** as the mail account. Click **OK**.

4   On the **Other Address Properties** dialog that appears, enter "`VPIM`" in the **E-mail type** field, then enter the VPIM address of the Custom Recipient in the **E-mail address** field exactly as entered in their voice mail system, then click **OK**:

•   For a recipient using a standard voice mail system, the address is most likely in the form:

    <phone number>@<Internet domain name>

•   For OnePoint Messenger recipients at other organizations, create Custom Recipient profiles in which you duplicate the VPIM addresses created for the users by their local administrators. This is most likely a replication of the SMTP address, using a VPIM prefix, such as:

    VPIM:<user name>@<Internet domain name>

    Sending a unified message through VPIM to a OnePoint Messenger recipient at another organization preserves the unified message structure. This enables recipients to use all OnePoint Messenger features to view and play the message components.

•   You have another option that minimizes the role of a routing gateway. Enter the name of the recipient's mail server as part of the domain name, as shown in Figure 2-9. This form can be useful within an organization that has several VPIM-com-

pliant mail systems, but this form is subject to such a level of rigid granularity that any change in the domain structure would require changing the address in each profile.

Figure 2-9   Other Address Properties Dialog
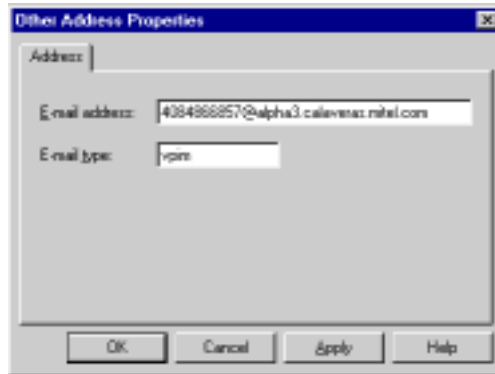
5   On the **Exchange Profile tabs** that appear after you exit the **Other Address Properties** dialog, you only need to enter the minimum data to identify the recipient and to route messages to the account on the remote voice mail system.

- On the **Unified Messaging** tab, select **Voice and Fax Mail**, then

  - If your Custom Recipient has an extension that your PBX can access, enter it in the **Telephone Extension** field.

  - **Mailbox:** Since callers can enter a mailbox number to address a message, you probably would want to enter the same number as the telephone extension in the **Mailbox Number** field, for easy caller access. It must be a mailbox number that is unique to the Exchange Site.

    Alternatively, you can start each VPIM Custom Recipient mailbox with a digit that signals to callers that it is a VPIM address. For details, see "Supporting Dial by Name" on page 121 in Chapter 3.

- On the **E-mail Addresses** tab, select the address, then click **Set as Reply Address**, as shown in Figure 2-10.

Figure 2-10   Exchange, E-mail Addresses Tab
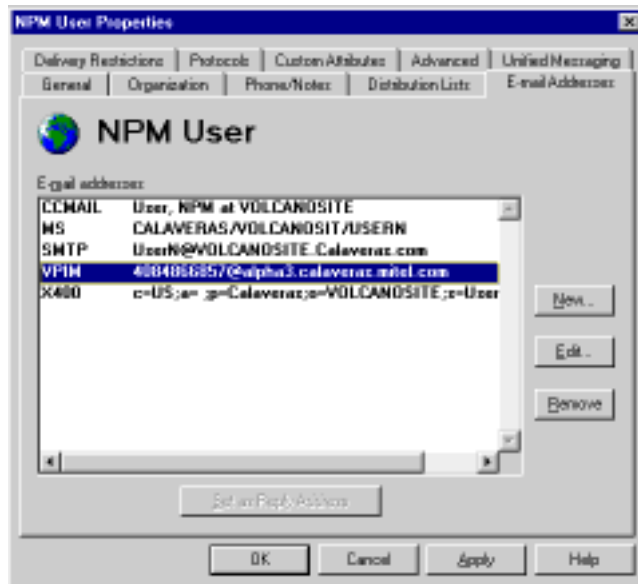
NOTE:You cannot record names or greetings for Custom Recipients, so callers must use Dial by Name to render Custom Recipient names with Text-to-Speech.

Creating Distribution Lists

OnePoint Messenger extends the functionality of Exchange system distribution lists to telephone callers. OnePoint Messenger users can send e-mail or telephone messages to a group of people in a system distribution list. The user can also create personal distribution lists in the Contacts folder, but those are only available from desktop clients, not from a telephone.

For callers using Dial by Name (DBN), it is helpful if you create distribution lists with distinct names. This allows callers to remember and enter a partial distribution list name and have DBN resolve it. For example, if you have several regional sales groups, you could create a list for each group, naming each "DList Sales <region>". A caller could access a particular group of salespeople by dialing **DLISTSALES**. DBN would announce the various regional sales distribution lists, and the caller would press the key matched to his list.

NOTE: Alternatively, users can enter the "extension" of the distribution list, but that may not be as easy for users to remember. You can

set up the dial plan to accommodate a unique range of numbers for distribution lists.

VPIM Distribution Lists: You can create distribution lists that have any combination of standard e-mail addresses or VPIM addressees. One consideration is the capabilities other voice mail systems have to accept certain attachment types. You might not want to mix addresses of systems that can and cannot accept certain types of attachments. Text and attachments sent to voice mail systems incapable of accepting them will not reach their intended recipients.

To create a distribution list in the Exchange Recipients database:

1   From the Microsoft Exchange Server Administrator main screen, select the **Recipients** container in the Exchange tree in the left pane.

2   From the **File** menu, choose **New Distribution List**.

3   Add members to the list on the **General** tab. To add a VPIM address, you would first create a Custom Recipient profile for that address, then select it from the Recipients list to add it to the distribution list.

4   Use the **Unified Messaging** tab to configure the mailbox, as described under "Managing OnePoint Messenger Users" on page 63 in this chapter.

    a.   Select the **Voice & Fax Mail** check box.

    b.   Create a unique mailbox and telephone extension. In this case, the extension is one that the PBX forwards to Telephony Server. A message sent to the mailbox of a distribution list is automatically forwarded to the mailbox of each user on the distribution list.

    c.   The other settings (including the **Fax & Pager** tab) are irrelevant to a distribution list.

Operation of OnePoint Messenger on Exchange

Exchange Server replication provides a measure of fault tolerance for unified messaging. If a secondary Exchange Server goes off-line, the primary Exchange Server continues to provide updated user greetings from its greetings folder to the Telephony Server and caches messages for users whose mailboxes reside on the secondary Exchange Server until it comes back online.

Similarly, call-in or desktop users whose mailboxes are on an active primary Exchange Server will experience no problems accessing messages when a secondary Exchange Server goes off-line. Only users whose mailboxes are on the secondary server will not receive messages until their server comes back online.

If the primary Exchange Server goes offline, the PBX continues to ring called telephones and route unanswered calls to the Telephony Server, which answers calls with "The system is experiencing technical difficulties. Please call again later." This prompt also plays to all users calling the Message Center. Users attempting to connect to Exchange through the desktop also receive error messages indicating that Exchange is unavailable.

To counter the loss of an Exchange Server, the administrator can do two things:

- Before the Exchange Server goes offline, assign the Message Delivery telephony application to a virtual port in Show N Tel Manager. This ensures that messages sent from a telephone are queued on the Telephony Server until the Exchange Server is returned to service. For details on assigning Message Delivery, see Chapter 4 in the *OnePoint Messenger Installation Guide*.

- Before or after the primary Exchange Server goes offline, use the Telephony Server Configuration Wizard to designate a new primary Exchange Server (see "Revising the Telephony Server/ Exchange Integration" on page 59.) If the new primary Exchange Server is part of a new Exchange site, the Unified Messaging tab will be replicated automatically to other Exchange servers on the new site.

Providing Users with Their Profile Information

You can provide users with their profile information by e-mail, but, until users have access to their mailboxes, that information is unavailable. So you will need to first inform users of their mailbox aliases and the name of the Exchange Server.

You could take screenshots of their Exchange profile screens and hand it to them, but the screens do not show all of the information that you want to give them, as shown in Table 2-1. You can use Table 2-1 as a template for creating an electronic form on which to enter a user's profile information to give to the user.

Table 2-1 User Information Form

System Contact Points	
Exchange Server Name	
Exchange Server internal URL (for Web Client access)	
Exchange Server external URL (for Web Client access)	
Message Center Telephone Number	
Fax on Demand Telephone Number	
Automated Attendant Telephone Number	
User Settings	
User's Office Telephone Number	
User's Telephone Passcode	
User's Computer Log-in Name	
User's Computer Log-in Password	
User's Mailbox Number	
User's Fax Machine Telephone Number	
User's Messaging Level (None, Voice and Fax, or Full Unified Messaging	
User's Pager Setting	
User's Class of Service Permissions	Call-Me: Call-Me Time Limit: Fax: TTS: Paging: VPIM: Voice Message Time Limit:
User's Default TUI Language	
User's SMTP address	
User's VPIM address	

3.   Configuring Telephony Server

This chapter details the use of *TS Admin*, the *Unified Messaging Snap-in* to Microsoft Management Console (MMC), for configuring the Telephony Server telephony services, including setting default user mailbox settings and configuring Telephone User Interface (TUI) features. This chapter contains the following sections:

Introduction to Telephony Server Processes

The description of the Telephone User Interface and messaging processes that appeared in Chapter 3 of the *OnePoint Messenger Administrator Guide* for OnePoint Messenger version 1.1 now appears in Appendix F (page 297).

Introduction to Telephony Server Management

TS Admin, the focus of this chapter, provides access to most of the configuration and management interfaces to OnePoint Messenger, either directly through its property pages or, secondarily, through its **Utilities** node ("A Tour of the Unified Messaging Nodes" on page 94).

Most of the configuration elements in TS Admin have defaults that enable the system to run. You should read this chapter to learn what those defaults are and how to make changes to fit your preferences.

The configuration tasks that must be performed (some using TS Admin) before the core unified messaging services can operate appear in the OnePoint Messenger installation and integration guides.

The other primary configuration interface, not accessible from TS Admin, is *Show N Tel Manager.* Since all of the configuration tasks performed in Show N Tel Manager are essential, that interface is discussed in detail in the installation and integration guides. Also, on the OnePoint Messenger CD-ROM, there are also two general guides dedicated to Show N Tel, provided by its manufacturer Brooktrout Software. Show N Tel monitoring and reference information is also available in this guide in, Chapter 5 ("Monitoring Port Activity in Show N Tel Manager" on page 174) and in Appendix G (page 329).

For a complete list of guides available for OnePoint Messenger, see "OnePoint Messenger Documentation Resources" on page 235 in Appendix B.

What Happened to Telephony Server Administrator?

In OnePoint Messenger 2.0, TS Admin replaces the Telephony Server Administrator application used in previous versions of OnePoint Messenger. For a list of the previous Telephony Server Administrator settings and their new locations in TS Admin, see "Mapping Telephony Server Administrator to TS Admin" on page 144. TS Admin provides many more configuration elements than Telephony Server Administrator in a familiar hierarchical structure that better accommodates extensibility.

MMC and TS Admin, the Unified Messaging Snap-in, Overview

Microsoft provides Microsoft Management Console (MMC) as a central place for Windows NT service management tools. MMC uses the familiar file manager "tree" structure to organize the display of related tools and property pages. Applications and "trees" of applications can be added as "snap-ins". The left *Scope* pane of MMC contains nodes, which are category headings connected by the trunk and branches, just as Windows Explorer does. The right *Result* pane contains the pages and tools associated with the selected node in the Scope pane. For more on using MMC, see its online help.

TS Admin, the Unified Messaging Snap-in to MMC, is added to MMC by OnePoint Messenger to contain Telephony Server configuration and administrative nodes, applications, and documents (AKA "property pages" or simply "pages").

Figure 3-1   Unified Messaging Tree in MMC
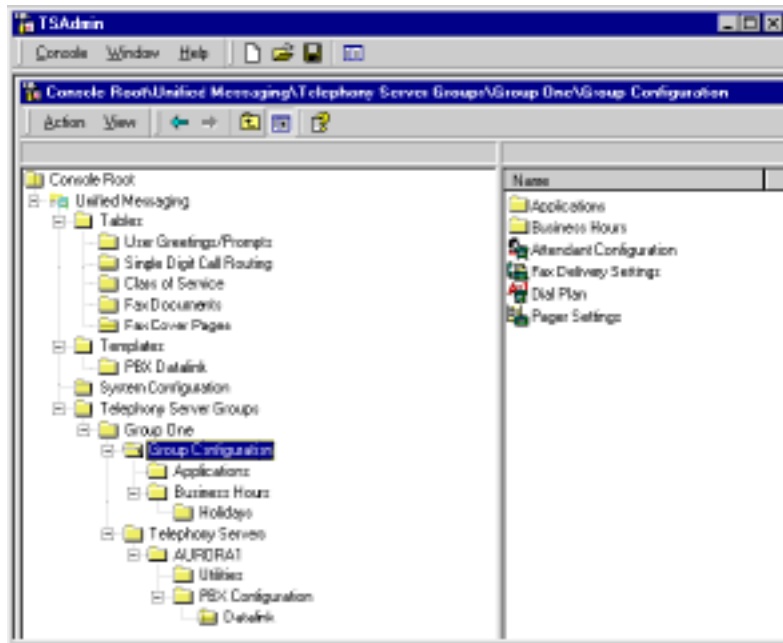
The Unified Messaging node structure appears in Figure 3-1. The System Configuration node is selected in the Scope pane to show its pages in the Result pane.

For details on configuration tasks, see "Telephony Server Installation and Configuration Tasks" on page 97.

Accessing TS Admin Nodes and Pages

TS Admin, the Unified Messaging Snap-in to MMC, is the primary interface place for accessing Telephony Server management and maintenance applications. The root node of TS Admin is the Unified Messaging node, located just below the Microsoft Management Console (MMC) Console Root node, as shown in Figure 3-1.

To access TS Admin nodes and pages:

1   Click the Windows **Start** button, then choose **Programs**, then **My Administrative Tools**, and then **MMC**.

   Alternatively, on the Telephony Server, double-click the **TS Admin** icon on the desktop. Microsoft Management Console starts and the main screen displays the root node of the tree.

2   In MMC, double-click the **Console Root** node. The Unified
    Messaging node appears below the Console Root node in the tree.

3   Double-click a node (or select it, then press [**Enter**]) to show the
    next level of nodes under it.

4   Select a node to show in the Results pane the pages associated
    with it.

5   Double-click a page to open it (or select it, then press [**Enter**]).

Using TS Admin, the Unified Messaging Snap-in to MMC

Use TS Admin to access nearly all Telephony Server configuration
elements and utilities. In many cases, you can keep more than one
MMC page open at the same time. You can create or purchase other
snap-ins and add them to the same MMC interface.

Most of the configuration elements in TS Admin are set to default
values, so you can manage by exception. However, it is best to
methodically expand each node in the tree and inspect each page to
make sure the settings are as needed.

**To learn where a particular Telephony Server node, configura-
tion page, or utility is located in MMC:**

•   See "A Tour of the Unified Messaging Nodes" on page 94 below.

•   In the index of the **Online Help for Unified Messaging**, see the
    summary of the OnePoint Messenger nodes, tools, and docu-
    ments in the topic "**About the Unified Messaging Node
    (MMC)**", available from the index.

•   In the **Table of Contents** of the online help, open the **Telephony
    Server Administration** "book", then view the overview topics.

•   For details on individual configuration elements, see the **Tele-
    phony Server Configuration Elements** topic.

•   To find the appropriate path to the configuration interface for the
    function that you want, from the **Table of Contents** in the **Online
    Help for Unified Messaging**, choose **Telephony Server Admin-
    istration**, then **Telephony Server Functions**, and then click the
    function that you want from its list.

To create a new document:

1 Select the parent node in the **Scope** pane, then right-click the node to display the context menu.

2 The context menus of the following nodes provide the **New** option to create a new document:

- PBX Datalink (see page 133)

- Holiday (see page 113)

- Greeting/Prompts (see page 125)

- Single Digit Routing (see page 136)

- Fax Documents (see page 122)

- Fax Cover Page (see page 121)

To view or modify a document:

1 Select the parent node of the document (see Table 3-1).

2 Double-click a document to edit in the **Result** pane.

or

Select the document, then press [**Enter**].

or

1 Select the document, then right-click to display the context menu.

2 Choose **Properties**. The document's property page appears.

3 Make appropriate changes to the fields on the page.

4 Click **OK** to accept all changes and close the page, or click **Apply** to save changes, leaving the page open, or click **Cancel** to close the application without saving.

You can delete pages that you create.

To delete a page in TS Admin:

Select it, then press [**Delete**].

A Tour of the Unified Messaging Nodes

This section provides an overview of the nodes and pages in the Unified Messaging Snap-in tree in Microsoft Management Console. The node descriptions appear as they appear in top-to-bottom order in the Unified Messaging tree. For a list of Telephony Server configuration

tasks managed by pages in the tree, see "TS Admin Configuration Pages, Parent Nodes, Information Pages" on page 103. Similar topics are available in the Telephony Server Administration book of the Online Help for Unified Messaging.

The tree is overly complex for present needs, because it is designed to support future versions of OnePoint Messenger in which multiple Telephony Servers will be able to interoperate within an organization. OnePoint Messenger 2.0 does not support interoperability.

The root Unified Messaging node contains these nodes and associated child nodes and pages:

- **Tables**: Contains tables of documents (each a set of optional settings) used by services located at other nodes. The **Tables** node contains these nodes:

    - **User Greetings/Prompts**: Create greeting/prompts that can be used by the **Automated Attendant** (both SDR and Simple Attendant versions), **Message Center**, and **Fax on Demand** services. See page 125.

    - **Single Digit Call Routing**: Create tables, each consisting of a Single Digit Routing menu that you can assign in Automated Attendant. See page 136.

    - **Class of Service**: Contains 10 Class of Service (COS) tables, which can be modified. Assign a COS to a user in Exchange.

    - **Fax Documents**: Put documents here that can be added to the Fax on Demand list or accessed via Single Digit Routing menus. See page 122.

    - **Fax Cover Page**: Create any number of fax cover pages that can be assigned as the system or Fax on Demand fax cover pages. See page 121.

- The **Templates** node contains the **PBX Datalink** node for creating and editing PBX Datalink integration templates. Installers must use it with the PBX Configuration node to perform the PBX integration. For details on the use of the node, see the OnePoint Messenger integration guide for your PBX. See page 133.

- The **System Configuration** node contains five documents related to TUI operation and mailbox settings:

- **Mailbox Defaults**: Set defaults for user mailboxes, such as how much the TUI reports to a user about incoming e-mail. See page 129.

- **Security**: Set the default TUI password and length. See page 134.

- **System Information**: Set the Attendant mailbox address and the voice storage format on client PCs. See page 141.

- **System Limits**: Modify system defaults here for TUI use (caller response times and retries, message length, and Call-Me/Meet-Me sessions) to set defaults. See page 142.

- **Dial by Name Configuration**: Set the way the Dial by Name (DBN) feature of the TUI interacts with callers. See page 117.

- The **Telephony Server Groups** node contains the Group One node, which contains two nodes, Group Configuration and Telephony Servers, which contain settings for all managed Telephony Servers (only one possible in OnePoint Messenger 2.0) and for specific Telephony Servers, respectively:

   - **Group Configuration**: Contains two nodes and five documents relating to TUI operation.

      - **Applications node**: contains pages for the three OnePoint Messenger TUI services: **Automated Attendant**, **Message Center** ("Messaging"), and **Fax on Demand**.

      - **Business Hours node**: Contains the **Holidays** node and pages listing normal business hours, defining when the Automated Attendant announces that the company is open for business.

      - **Attendant Configuration**: Invokes the Operator and sets the Operator extension.

      - **Dial Plan**: Sets how many digits comprise a mailbox address for each beginning number, from 0 to 9. See page 119.

      - **Fax Delivery Settings**: Tells Telephony Server how to deal with fax ports. See page 123.

      - **Pager Settings**: Contains one setting, the Pager Retry Interval. See page 132.

- **Telephony Server**: Contains the **Utilities** and <**TServer Name>** nodes for Group One. "<TServer Name>" is a place-holder name in this documentation for the node that takes on the name of the local Telephony Server.

  - **Utilities node:** Contains links to the OnePoint Messenger utilities—AG Configurator and Help, Configuration Wizard, Directory Initialization, License Install, NT Event Viewer, NT Performance Monitor, OnePoint Messenger Administrator Task Help, SNT Trace, System Service Tool, Statistics Reporting, Trace Manager (OnePoint Messenger Trace Manager), TTS Dictionary Editor, and Version Reader. For information on these utilities, see "Unified Messaging Software and Hardware Components" on page 33 of Chapter 1.

  - The **<TServer Name> node** contains one node, PBX Configuration, and two documents, Linecard Information and Postoffice Information. The **PBX Configuration node** contains pages for identifying the appropriate PBX integration template. The **Linecard Information** page lists the audio formats supported by the line card. **Postoffice Information** is a read-only page that lists the names of the primary Exchange Server, Site, Organization, Exchange Profile used by the Telephony Server, and the general mailbox used for storing messages from outside callers.

    NOTE: With OnePoint Messenger 2.0, you can change the computer name of the Telephony Server. See "Renaming the Telephony Server" in Chapter 5 of the *OnePoint Messenger Installation Guide*.

Telephony Server Installation and Configuration Tasks

Much of Telephony Server has been preconfigured with defaults that you should review, so you can change those settings with defaults different than your preferences. The installation tasks are detailed in the *OnePoint Messenger Installation Guide* and are summarized along with the configuration tasks in the section "Task List" on page 45 of Chapter 1. Briefly:

The installation tasks detailed in the *OnePoint Messenger Installation Guide* include installing Windows and Exchange software, creating Windows and Exchange administrator accounts, installing OnePoint

Messenger and integration hardware and software, running the Config Wizard to integrate the Exchange server, invoking Directory Initialization, running system validation tests, and completing the PBX integration and telephony application assignments.

Completing the PBX Integration

To provide PBX integration, first read either the *Getting Started Guide* or the *OnePoint Messenger Installation Guide*, depending on whether you are installing a turnkey system or doing a base installation or upgrade. Then read the OnePoint Messenger/PBX integration guide specific to your PBX. Its directions contain integration tasks in Show N Tel and the Unified Messaging Snap-in to Microsoft Management Console (MMC), which is described in this chapter. Installers may need to edit the **Linecard**, **Messaging**, **Templates,** and **PBX Configuration** nodes in MMC to perform the PBX integration. For details on the use of those nodes, see the *OnePoint Messenger Installation Guide* and your PBX integration guide.

Configuring Core Elements of the Telephony Interface

While nearly all of the telephony interface has default settings, there are some that require your attention. However, in general, it is best to methodically inspect all the settings in the property pages of the Unified Messaging Snap-in tree in MMC. The obvious way to do this is to traverse every node in the tree from top to bottom. This will also help to familiarize you with where elements are. Those nodes that you most likely need to edit at installation time are:

- **Attendant Configuration** (see "Attendant Configuration" on page 110)—Set the Operator extension and enable/disable the Operator function.

- **Automated Attendant** (see "Automated Attendant" on page 111)—Set up the Automated Attendant pilot number, greeting, and choose between "simple" and single digit routing (SDR) menus. Select Simple Attendant until you have created SDR menus.

- **Linecard Information** (see "Line Card Information" on page 128)—Select the audio format for the line card to use.

- **Messaging** (see "Message Center" on page 130)—Set the Message Center pilot number, enable or disable the Message Center, select greetings, and select the "skip-greeting" (greet-

ing accelerator) key. Use the default greetings until you have created custom greetings.

Choosing Prompt Languages

There are several places where you choose a Telephone User Interface (TUI) prompt language:

- During OnePoint Messenger installation, the Installation Program asks you to choose the prompt languages to install, from U.S. English, British English, or Latin American Spanish. You may only install the prompt languages that you have purchased. You can purchase additional languages at any time and run the Installation Program again to add the language.

- Choose the language to use for system prompts (prompts used by the TUI outside of users' mailboxes) on the **System Information** page (see page 141) of the Unified Messaging Snap-in. Choose the default language to use for prompts that are played inside of users' mailboxes on the **Mailbox Defaults** page (see page 129.)

- To override the default mailbox language for a particular user, edit the Unified Messaging Tab (see page 66 in Chapter 2) of the user's profile in Exchange Administrator.

Telephony Server Administration

NOTE: The section "Performing Remote Management" on page 174 in Chapter 5 discusses administering and managing Telephony Server from another computer. See also "Setting Up Remote Exchange Administration" on page 58 in Chapter 2.

Other Telephony Server property pages which are not critical for running telephony services, but which you are likely to want to change default settings and edit periodically or for other reasons are:

- **Business Hours** (page 113): You may want to change the default hours set for standard greetings and create exceptions for known holiday dates.

- **Dial Plan** (page 119): Set mailbox number ranges.

- **Fax Cover Page** (page 121): Create a system fax cover page, which is used for Fax on Demand (on page 124) and for downloading user e-mail to fax machines (other than the user default fax machine). See Chapter 4 (page 147) for a complete discussion of fax services and tasks.

- **Greetings and Prompts** (page 125): Record company greetings.

You will notice that several dialogs contain Browse buttons, such as ones in the Fax Cover Page and Greetings nodes listed above. The Browse button is the familiar access to the Windows Explorer that enables you to navigate to and select a file. The directory to which you last navigated is the directory that appears the next time you click the Browse button. To find what you need more quickly, you should become familiar with the OnePoint Messenger directory structure. There is a \Greetings directory and a \Fax\Documents directory for your convenience in which to import greetings and fax documents, respectively.

If you have been reading from the beginning of this chapter, and following its advice, you have configured the essential settings. Now there is relatively little that you need to do on the Telephony Server to provide its core messaging function. Those changes that you will most likely want to make are:

- **Holiday settings**: Set holiday periods in the Business Hours node (see page 113). Then record specific holiday greetings (see "Greetings and Prompts" on page 125) for the Automated Attendant (see "Automated Attendant" on page 111) to use when it answers in that holiday mode.

- **Fax on Demand**: Typically, the Fax on Demand document list needs continual editing. See page 124.

- Perform a configuration database backup. See ("Managing OnePoint Messenger Backups" on page 225) in Chapter 9.

- **Single Digit Routing menus**: You may create single digit routing (SDR) menus, including nested menus for the Automated Attendant pilot and Fax on Demand service. See page 136.

On a much more occasional basis, you may want to make more basic configuration modifications, such as replacing the primary Exchange Server (see "Revising the Telephony Server/Exchange Integration" on page 59 in Chapter 2.) Other more occasional changes include:

- Reallocate telephony resources, such as ports dedicated to Fax on Demand during a sales promotion, or adding more Text-to-Speech resources. See Chapter 6 for details.

- Upgrade Telephony Server feature licenses, hardware, or software. See "Upgrading and Repairing OnePoint Messenger" on page 217 and "Upgrading OnePoint Messenger Feature Licenses" on page 220 in Chapter 9.

- Occasionally, you may wish to revise a word spoken by the Tru-Voice Text-to-Speech program (TTS), which is used to read e-mail to users (OnePoint Messenger subscribers are called "users" in this guide) over the telephone. See Appendix E, Editing the TTS Dictionary (page 285).

Configuring Telephone User Interface Access

These Unified Messaging Snap-in elements provide the controls for the options that users (and, to some degree, other callers) have when using the Telephone User Interface (TUI). Use Microsoft Exchange Server Administrator on the Exchange Server to assign the messaging features on a per-user basis. See "Managing OnePoint Messenger Users" on page 63 in Chapter 2.

Configuration elements include, in alphabetical order:

- **Class of Service (COS)**: Define telephony classes of service (COS), which can then be assigned to users on the Unified Messaging tab of Microsoft Exchange. Classes of service can be designed with permissions for fax, Call-Me/Meet-Me, message length, paging, and text-to-speech. See page 114.

- **Dial by Name (DBN)**: Set options to allow callers to dial OnePoint Messenger users or their mailboxes. See page 117.

- **Fax Settings**: Manage the interface between Telephony Server and the fax board, identifying the number of fax channels, fax resource access retries, and intervals. See page 123.

- **Greetings**: Record the greetings spoken by the Automated Attendant, the Fax on Demand service welcome, and the Message Center. See page 125.

- **Mailbox Defaults**: Set default TUI mail playback and e-mail Text-to-Speech options. See page 129.

- **Pager Settings**: Set the pager retry interval. See page 132.

  NOTE: Set pager access levels on the **Class of Service** pages and on the **Fax and Pager** window of users' **Unified Messaging** tabs in Exchange.

- **Security**: Set default passwords, maximum unsuccessful login attempts, and maximum logon time. See page 134.

- **System Limits**: Set TUI limits for user response timeout and retries, Call-Me/Meet-Me, and message length. See page 142.

For a detailed list of configuration tasks, see "Alphabetical List of Configuration Elements in MMC" on page 102. For a tour of the nodes in the Unified Messaging tree, see "A Tour of the Unified Messaging Nodes" on page 94.

Alphabetical List of Configuration Elements in MMC

Table 3-1 and Table 3-2 both show where configuration elements can be found in the Unified Messaging Snap-in tree, and both tables note where related information can be found in this chapter. Table 3-1 lists each of the TS Admin interfaces, while Table 3-2 (page 104) is a more granular alphabetized list of configuration elements.

Table 3-1 TS Admin Configuration Pages, Parent Nodes, Information Pages

Nodes, Property Pages	Parent Node	See Page
Automated Attendant	Applications	111
Business Hours/Holidays	Group Configuration	113
Class of Service	Tables	114
Dial by Name	System Configuration	117
Dial Plan	Group Configuration	119
Fax Cover Page	Tables	121
Fax Documents	Tables	122
Fax Delivery Settings	Group Configuration	123
Fax on Demand	Applications	124
Greetings/Prompts	Tables	125
Linecard Information	<TServer Name>	128
Mailbox Defaults	System Configuration	129
Message Center	Applications	130
Message Waiting Indicator	(not in MMC; see SNT)	132
Pager Settings	Group Configuration	132
PBX Datalink Properties	PBX Configuration	133
Post Office Information	<TServer Name>	133
Security	System Configuration	134
Single Digit Call Routing Menus–SDR	Tables	136
SNT Device Mapping	Datalink	141
System Information	System Configuration	141
System Limits	System Configuration	142

Table 3-2 Configuration Elements with Associated TS Admin Interface

Configuration Element	TS Admin Interface
Attendant Configuration	Use the **Attendant Configuration** page in TS Admin to enable the Operator and set the Operator extension. See "Attendant Configuration" on page 110.
Audio Formats	Use the **System Information** page (page 141) to assign an audio format for voice message storage on Exchange. Use the **Linecard Information** property page (page 128) to set audio formats supported by the line card. For details on audio formats, see "Audio Formats, Codecs, and Transcoders" on page 109.
Automated Attendant	Use the **Automated Attendant** property page (page 111) to enable Automated Attendant (automated receptionist) and to assign its pilot number.
Attendant mailbox	Use the **System Information** page (see page 141) to assign the mailbox where messages are left that are left by callers who do not enter the extension of a particular extension or mailbox.
Business hours	Use the **Normal Business Hours** node (page 113) to set the hours when automated greetings for normal business hours are played, and the **Holidays** node under that node to create exceptions to business hours.
Call-Me session time	Use the **System Limits** property page (page 142) to set the default Call-Me session time limit that is used when a Class of Service is not in effect.
Call-Me/Meet-Me inactivity timeout	Use the **System Limits** property page (page 142) to set the default Call-Me/Meet-Me inactivity timeout (idle time allowed before Call-Me-Meet-Me session ends).
Class of Service	Use the **Class of Service** property page (page 114) to create or edit a Class of Service (COS). Assign a COS to a user on the Unified Messaging tab in the user's Exchange profile.
Dial by Name	Use the **Dial by Name** property page (page 117) to set up the Dial by Name service.
Dial Plan	Use the **Dial Plan** property page (page 119) on the Group Configuration node of TS Admin to set up the Dial Plan.
Fax access	Use a Single Digit Routing menu, which you make in the **Single Digit Call Routing** table (page 111), to identify a fax to deliver when a caller presses a key assigned to the fax.

Table 3-2 Configuration Elements with Associated TS Admin Interface (Continued)

Configuration Element	TS Admin Interface
Fax cover page	Use the **Fax Cover Page** node (page 121) to create or edit a complete fax cover page, or a top or bottom component. Use the **Fax on Demand** property page (page 124) to designate a fax cover page to be used with the Fax on Demand service. Use the **Messaging** property page (page 130) to designate a fax cover page to be used for documents routed to remote fax machines from the Message Center.
Fax on Demand	Use the **Fax on Demand** property page (page 124) to configure and enable the Fax on Demand service, such as setting the document numbers associated with each document available from the Fax on Demand service. Use a Single Digit Routing menu, which you make in the **Single Digit Call Routing** table (page 136), to allow single-key access to Fax on Demand or individual fax documents.
Fax request	Use the **Fax Delivery Settings** property page (page 123) to check for a fax request (how often the system checks for a fax request).
Fax send retry interval	Use the **Fax Delivery Settings** property page (page 123) to set the time interval for how long to wait before attempting to send a fax again upon failure.
Greetings/prompts	Use the **Greetings/Prompts** node (page 125) to create a greeting or prompt, or edit one. Use the **Automated Attendant** property page (page 111) to select Automated Attendant greetings, the **Fax on Demand** page (page 124) to select Fax on Demand greetings, and use the **Messaging** page (page 130) to select the greeting for the Message Center.
Holidays	Use the **Holidays** node under the Business Hours node (page 113) to create or edit holidays (non-business days) for use with non-business hours greetings recorded on the **Greetings/Prompts** node (page 125) and set by the **Automated Attendant** (page 111).
Inbox options	Use the **Mailbox Defaults** property page (page 129) to set default inbox options for mailboxes.
Language for mailbox prompts	Use the **Mailbox Defaults** page (page 129) to set the default language used for Mailbox prompts, then override the default on users' Exchange profile pages (see Chapter 2.)
License Install	Use the License Install utility to monitor OnePoint Messenger feature license usage and augment licenses. Launch License Install from the **Utilities** node (see page 94).

Table 3-2 Configuration Elements with Associated TS Admin Interface (Continued)

Configuration Element	TS Admin Interface
Line card codecs	Use the **Linecard Information** property page (page 128) to identify codecs supported by the line card.
Mailbox greeting accelerator	Use the **Messaging** page (page 130) to set the mailbox greeting accelerator (the telephone key for the caller to press in order to skip a mailbox greeting).
Maximum message length	Use the **System Limits** property page (page 142) to set the maximum message length (the maximum time allowed to a caller to leave a voice message).
Maximum retry count	Use the **System Limits** property page (page 142) to set the maximum retry count (the number of times the telephony server will reprompt a user for input after an invalid entry or timeout).
Message Center	Use the **Messaging** property page (page 130) to enable messaging (the Message Center). Use a Single Digit Routing menu (page 136) to allow single-key access to the Message Center.
Message Waiting Indicator (MWI)	To set up the Message Waiting Indicator service on users' telephones, see "Enabling Message Waiting Indicators" on page 132. For Datalink integrations, use the **Configuration** property page under the **Datalink** node to set the time interval for the Telephony Server to check the PBX for the availability of the MWI service.
Minimum message length	Use the **System Limits** property page (page 142) to set the minimum message length (minimum recording time in order for a telephone message to be valid and delivered to the recipient).
Night greeting	To set the greeting/prompt used after business hours on business days, use the **Messaging** property page (page 130) for the Message Center, the **Fax on Demand** page (page 124) for Fax on Demand, and use the **Automated Attendant** page (page 111) for the Automated Attendant.
Number of retries	Use the **Fax Delivery Settings** property page (page 123) to set the maximum number of times for the system to try to send a fax.
Operator, set	Use the **Attendant Configuration** page under the **Group Configuration node to set the extension of the Operator and enable callers to transfer to the Operator.**
Pager retry interval	Use the **Pager Settings** property page (page 132) to specify how often for the system to try to send a page.

Table 3-2 Configuration Elements with Associated TS Admin Interface (Continued)

Configuration Element	TS Admin Interface
Password (default mail-box password)	Use the **Mailbox Defaults** property page (page 129) to specify the default password and the minimum or maximum length any password can be that users use to log in to their mailboxes from a telephone.
PBX data link template:	Use the **PBX Datalink** node (page 133) to create or edit a PBX data link template.
Pilot numbers	To set the main phone number ("pilot number") for: • The Fax on Demand application, use the **Fax on Demand** page (page 124) • The Message Center, use the **Messaging** page (page 130) • The Automated Attendant, use the **Automated Attendant** page (page 111)
Restricted transfer	Use a Single Digit Routing menu, which you make in the **Single Digit Call Routing** table (page 136) to set up a password-required one-key transfer at the TUI to access an extension, mailbox, or application.
SDR menus	To design Single Digit Routing menus, see the **Single Digit Call Routing** table **(**page 136**).**
Simple attendant	Use the **Automated Attendant** property page (page 111) to select either "simple" automated attendant (routing only to users' extensions) mode or a Single Digit Routing menu to use for the Automated Attendant.
Single digit call routing menu	Use the **Single Digit Call Routing** node (page 136) under the **Tables** node to create or edit single digit call routing (SDR) menus. Use the **Automated Attendant** page (page 111) to assign a menu to the Automated Attendant, including SDR menus used during and after business hours (evening hours) and for holidays.
SNT application access	Use a Single Digit Routing menu, which you make in the Single Digit Call Routing table (page 136) to allow a caller to invoke an application that you design in Show N Tel.
Statistics report	Use **Statistics Reporting Program** to generate reports on voice-mail system usage. Launch Statistics Reporting Program from the **Utilities** node (see page 94).
Subject for messages	Use the **Mailbox Defaults** property page (page 129) to create default subjects (in the Subject field of messages) for fax and voice messages.

Table 3-2 Configuration Elements with Associated TS Admin Interface (Continued)

Configuration Element	TS Admin Interface
System Service Tool	Use System Service Tool to monitor and install service packs and hot fixes. Launch **System Service Tool** from the **Utilities** node (see page 94).
Text-to-speech	Use the **Mailbox Defaults** property page (page 129) to set default e-mail text-to-speech options for mailboxes. Use the **Utilities** node (page 94) to access the **TTS Dictionary Editor** to edit the TTS dictionary.
Trace Manager	Use the **Utilities** node (page 94) to access **OnePoint Messenger Trace Manager** or **SNT Trace**.
Transfer to specific extension	Create a Single Digit Routing menu, which you make in the **Single Digit Call Routing** node (page 136), that contains a menu option that allows a caller to press one key to transfer to a specific extension.
TTS Dictionary	Use the **Utilities** node (page 94) to launch TTS Dictionary Editor to edit the TTS dictionary.
User response timeout	Use the **System Limits** property page (page 142) to set how long the system will wait for user input before canceling the call.
Utilities	Use the **Utilities** node (page 94) under the **<TServer name>** node to access OnePoint Messenger utilities.
Version Reader	Use the **Utilities** node (page 94) to access Version Reader.
Weekend SDR menu	Use the **Automated Attendant** page (page 111) to set the SDR menu used for the weekend Automated Attendant.

Editing Individual Unified Messaging Property Pages

This section describes how to access and edit the property pages in Microsoft Management Console (MMC) that manage Telephony Server services, including communication with the PBX, the Telephone User Interface, access through the Message Center to user mailboxes on Exchange, and fax services.

For details on using MMC and navigating though the Unified Messaging tree that contains the Telephony Server property pages, see "MMC and TS Admin, the Unified Messaging Snap-in, Overview" on page 91.

Audio Formats, Codecs, and Transcoders

OnePoint Messenger has several points at which it creates audio files or converts audio files from one format to another:

- **Outlook**: In Outlook, when voice attachments in unified messages play in the Unified Message Player, it can play all the supported OnePoint Messenger formats—PCM, IMA-ADPCM, TrueSpeech, and OKI.

  When users save voice attachments to their local drives, the files are saved with a ".wav" extension, except for legacy OKI-format files, which are saved with a ".cvv" extension.

  User name and TUI greetings recorded in Outlook use the OKI format, and are not transcoded by OnePoint Messenger at any time.

- **System Greetings and Prompts:** If you use the embedded recorder on the Greetings page of TS Admin to record system greetings and prompts, the recording is saved in OKI format. You can also use that page to import an audio file in OKI or WAVE format to use as a greeting or prompt. The system converts the WAVE format to OKI format before storing the recording in the database. For details, see "Greetings and Prompts" on page 125.

- **TUI:** When an analog audio signal comes in to the line card from the PBX, the line card converts it to a digital format. You can choose whether messages should be saved on the Exchange Server in PCM format (Mu-Law in the U.S. and Canada, A-Law elsewhere) or the more compressed IMA-ADPCM format. The tradeoff is more storage space required for PCM versus more CPU usage for IMA-ADPCM (see the discussion in Appendix A of the *OnePoint Messenger Installation Guide*.) Both formats use the .wav extension ("WAVE" format).

  When users call the Message Center to retrieve messages, the Telephony Server reconverts (*transcodes*) the stored format to a format appropriate for the PBX to send to the telephone, if necessary.

  Use the **Linecard Information** page, under the node that is named with your Telephony Server computer name (referred to as "<TServer Name>" in this chapter) in the Unified Messaging tree in MMC (see page 128), to view the available sound formats

supported by the installed line card type, then set the codecs that you want the line card to use.

Use the **System Information** page in TS Admin (see page 141) to select the file format for storing audio on the Exchange Server.

- **User Spoken Names and Greetings:** OnePoint Messenger uses the OKI format to store recorded names and greetings, supported through the TUI by the line card and at the desktop by the Unified Message Player in Web Client and Outlook.

  NOTE: OnePoint Messenger 1.1 also uses the OKI format for recording voice messages. If a message is sent by a OnePoint Messenger 1.1 user to a OnePoint Messenger 2.0 user, the message is stored on Exchange in OKI format and played without transcoding by the TUI and the recipient's Unified Message Player in Outlook.

- **VPIM:** If a message is to be sent to another voice mail system using the Voice Profile for Internet Mail (VPIM) protocol, the line card converts the sound format to the G.726 format (WAVE format) required by the VPIM protocol.

  Messages received through VPIM are transcoded from G.726 to the IMA-ADPCM format.

- **Web Client:** For a message sent to a Web Client, the Telephony Server converts the voice content to TrueSpeech.

  Web Client records in IMA-ADPCM (WAVE format).

  When the Web Client user saves voice attachments, the attachments are saved as ".wav" files.

Attendant Configuration

Use the Attendant Configuration page, accessed under the **Group Configuration** node of the Unified Messaging tree in MMC, to invoke the Operator. The page has two fields:

Attendant Enabled—Select this to have the TUI announce that the user should dial 0 to reach the Operator. Select this only if you have a person available to answer the Operator console during the business hours that you define on the Business Hours node (page 113). During those hours, callers can press [0] to switch to the Operator. If you do not set this, the TUI does not announce the to callers the option to reach the Operator.

Attendant Extension—Set the Operator extension. Users do not dial this extension; Telephony Server uses it to ring the Operator when the user selects the Operator option from the TUI menu.

NOTE: To assign a mailbox to the attendant, use the System Information page. For details, see "System Information" on page 141.

Automated Attendant

The Automated Attendant page, accessed under the **Applications** node of TS Admin (the Unified Messaging tree in MMC), is a Telephone User Interface (TUI) feature that, when invoked in its Simple Attendant form, prompts callers who call the Automated Attendant phone number (usually the main number of the organization) to enter the extension of the person that they want. The Automated Attendant then routes the call.

When you enable Automated Attendant in Single Digit Routing (SDR) mode, with one or more SDR menus (see "Single Digit Call Routing" on page 136 to create menus), you can give callers more choices. Each menu can offer up to ten choices, but you can add more choices by making another menu one of the options. You can nest up to 10 menus deep. You can enable the functionality of Simple Attendant (dialing of any extension, with or without Dial by Name) within an SDR menu. You have the option of enabling *cut-through extension dialing*, which means that callers do not need to listen to all menu choices before entering a selection.

To enable, disable, or modify Automated Attendant:

1   In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then **Telephony Server Groups**, then **Group One**, then **Group Configuration**, then the **Applications** node.

2   In the **Result** pane, double-click **Automated Attendant**. The Automated Attendant Properties page appears.

3   To invoke the Automated Attendant, click the **Enable Automated Attendant** check box, the default. To stop it, deselect it.

4   In the **Attendant Pilot Number** field, enter the main pilot number for the Automated Attendant. This may be an extension or a longer number, depending on your PBX integration. You can enter up to 64 digits.

5   Select **Simple Attendant** or **Single Digit Routing**.

6   If you select **Simple Attendant**, click the down-arrow by **Day-time Greeting** to select a greeting that you have created, then do the same for **Evening Greeting**. Typically, these are greetings that announce whether the organization is open for business or closed. During holiday periods that you set, the Evening Greeting could be a special holiday greeting that you record.

7   If you select **Single Digit Routing**, click the down-arrow by **Daytime SDR Table** to select an SDR menu from those that you have created (see "Single Digit Call Routing" on page 136), then do the same for **Evening SDR Table**, **Weekend SDR Table**, and **Holiday SDR Table**.

NOTE: If you record a new greeting and select it for either Simple Attendant or SDR mode, you must restart telephony services to enable it. For details on controlling telephony services, see "Operating the Telephony Server" on page 166 in Chapter 5.

8   Click **OK** to accept your edits and close the page, or click **Apply** to save edits without closing the page, or click **Cancel** to close the page without saving.

Automated Attendant Screen Elements

•   **Attendant Pilot Number** field: The main pilot number for the Automated Attendant (automated receptionist)

•   **Daytime Greeting** field: Typically a greeting/prompt that asks the caller to enter the desired extension

•   **Evening Greeting** field: Typically a greeting/prompt that tells the business hours of the organization, then asks the caller to enter the desired extension to leave a message

•   **Daytime SDR Table:** A prompt menu that routes the caller to the service or person chosen from the menu

•   **Evening SDR Table**: Typically a prompt menu that routes the caller only to automated services or mailboxes

•   **Weekend SDR Table**: Typically a prompt menu that routes the caller only to automated services or mailboxes

•   **Holiday SDR Table**: Typically a prompt menu that routes the caller only to automated services or mailboxes

•   **Enable Automated Attendant** button: Switches Automated Attendant on or off.

Business Hours and Holidays

The Business Hours node of the Unified Messaging tree in MMC contains a **Normal** page listing normal business hours and a **Holidays** node containing pages you create to identify holiday periods. The times of each day that are defined as business hours are the times when the Automated Attendant announces that the company is open for business. Setting up holiday periods sets up exceptions to the standard work week, so that the system plays the after-hours greeting or a special greeting that you create. System greetings may be set for normal and after-hours operation. During the workday, callers may be transferred to the operator. On a non-workday, the operator may not be available.

To set the hours of a standard work week:

1   In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then **Telephony Server Groups**, **Group One**, **Group Configuration**, then select the **Business Hours** node.

2   In the **Results** pane, double-click **Normal**. The Normal Business Hours Properties page appears with a table displaying the days of the week in the left column, a **Workday** column with check boxes for each day, and **Start Time** and **End Time** columns to set the hours of the business day.

3   In the **Workday** column, select the check box by a day that is a standard workday. The defaults are Monday through Friday.

4   For the selected workday, click the spin controls of the **Start Time** and **End Time** fields to set the beginning and ending hours of that workday. The defaults are 8:00 am and 5:00 pm.

5   After configuring each day of the normal week, click **OK** to accept your edits and close the page, or click **Apply** to save edits without closing the page, or click **Cancel** to close the page without saving.

Holidays: Setting Up Exceptions to the Standard Work Week

As described above, you can create pages that define one or more consecutive dates as named holiday periods. Then use the Automated Attendant page (see page 111) to assign menus and greetings for the holiday.

To create a holiday page:

1   With the **Business Hours** node open, double-click **Holidays**.

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2   From the context menu (right-click) of the **Holidays** node, select
    New Holiday. The New Holiday dialog appears.

    or

    To edit a holiday, double-click it in the **Results** pane. The
    selected holiday page opens.

3   In the **Name** field, enter a name for the holiday, and in the
    Description field, enter a description of the holiday. The entries
    in these fields appear in the MMC Results pane for the holiday.

4   In the **Begin Date** field, enter the date when the holiday starts.
    You can type the date in the form dd/mm/yy (day/month/year), or
    click the arrow to invoke a calendar. Click the beginning date for
    the holiday on the calendar.

5   In the **End Date** field, enter the date when the holiday ends, as
    described for the Begin Date field.

6   Click **OK** to accept your edits and close the page, or click **Cancel**
    to close the page without saving.

Class of Service

A class of service (COS) is a set of Telephony Server service levels
that you assign to a user. There are several reasons why you might
want to assign a COS with lower service levels to some users—to
keep telephone call expenses down, to reduce the impact on the uni-
fied messaging system from unnecessary use, or for security pur-
poses.

The **Class of Service** node displays the ten classes of service. Their
default settings appear in Table 3-3. Although you cannot define a
new COS, you can modify any of the existing ones, including chang-
ing their names. A modified COS is immediately available for
assignment on each user's Unified Messaging tab in Exchange
Administrator (see "Managing OnePoint Messenger Users" on
page 63 of Chapter 2) as soon as you click **Apply**. A revised COS
applies immediately to each user who has that COS.

NOTE: OnePoint Messenger 2.0 uses the same default Class of Ser-
vice (COS) names and settings as OnePoint Messenger 1.1, with the
exception that the category "Enable VPIM Addressing" is added to
each COS, which is enabled in every COS except Student, as shown
below in Table 3-3. All user accounts and settings are preserved in
Microsoft Exchange. When you install OnePoint Messenger 2.0, all
accounts inherit the default settings of the equivalent OnePoint Mes-

senger 2.0 COS. Any account with a renamed COS has the same permissions as given to the COS as originally named. To preserve revised COS settings, you should note all 1.1 COS names and settings, then edit the 2.0 COS settings to conform with them.

Table 3-3 Predefined Classes of Service

COS Name	Fax	Text (TTS)	Paging	Call Me	Message Limit	VPIM Addressing
1 - Max Privileges	X	X	X	5	no limit	X
2 - VIP	X	X	X	9	10	X
3 - Standard	X	X	X		10	X
4 - Executive	X		X	7	10	X
5 - Hotel	X				10	X
6 - No TTS	X		X	5	10	X
7 - No Fax		X	X	5	no limit	X
8 - No Paging	X	X		5	no limit	X
9 - Student	X	X	X		5	
10 - President	X	X	X	10	no limit	X

- **Enable Fax**: Allows users with this COS to send and receive faxes through Telephony Server

- **Enable Text**: Allows users with this COS to have text messages read to them over the phone by Text-To-Speech (TTS)

- **Enable Paging**: Allows users to receive notifications of unified messages through their pagers

- **Enable Call Me**: Allows users to connect their PCs to their telephones for Call-Me sessions. The number in the column represents the maximum allowed Call-Me session length in minutes.

- **Message Length Limit**: The number in the column represents the maximum length in minutes of individual voice messages that can be left for users with this COS.

- **Enable VPIM Addressing**: Allows users with this COS to address messages to other voice mail systems. Sending VPIM messages also requires a separate feature site license.

NOTE: To set defaults for other mailbox characteristics, see the Dial Plan (page 119), Mailbox Defaults (page 129) , and Security (page 134) pages.

To edit a COS:

1 In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then the **Tables** node, then select the **Class of Service** node. The COS list appears in the Result pane.

2 Double-click the COS to modify in the **Result** pane. The selected COS Properties dialog appears. The Properties dialog for the Max Privileges COS is shown in Figure 3-2.

Figure 3-2   COS Dialog in MMC
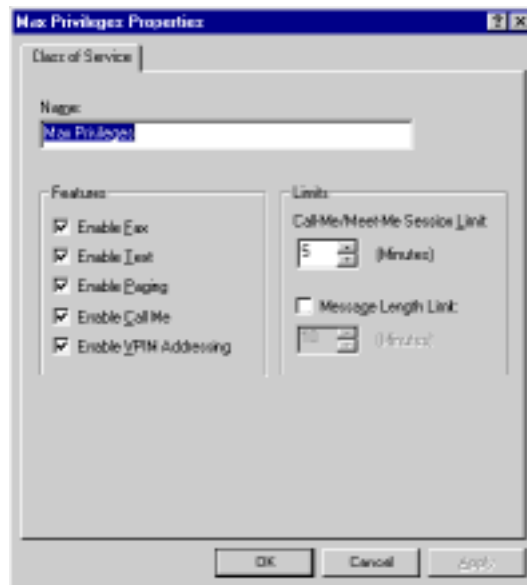
3 To revise the COS name, edit the **Name** field.

4 To enable or disable a feature, click its checkbox.

5 If you enable **Enable Call-Me**, click the **Call-Me/Meet-Me** spin control to select the maximum number of minutes allowed to any one Call-Me or Meet-Me session.

6 To set a time limit to allow callers to leave messages to a user with this COS, click the **Message Length Limit** check box, then, to change the 10 minute default, click the **Message Length Limit** spin control.

7   Click **OK** to accept your edits and close the page, or click **Apply** to save edits without closing the page, or click **Cancel** to close the page without saving.

Dial by Name

Use the Dial by Name (DBN) page of TS Admin (the Unified Messaging Snap-in to MMC) to set the way the DBN feature of the TUI interacts with callers. DBN provides the caller the ability to dial a user's phone or mailbox by entering enough of the user's name to identify the user to the TUI.

NOTE: If you change the Dial by Name access code, the change does not take effect until the next directory synchronization, which generally occurs every ten minutes.

> **CAUTION!** If you run a manual Directory Synchronization, do so only when Telephony Server services are not running.

To configure Dial by Name:

1   In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then **System Configuration**.

2   In the **Results** pane, double-click **Dial by Name**.

Figure 3-3   TS Admin Tree, Dial-by-Name Configuration
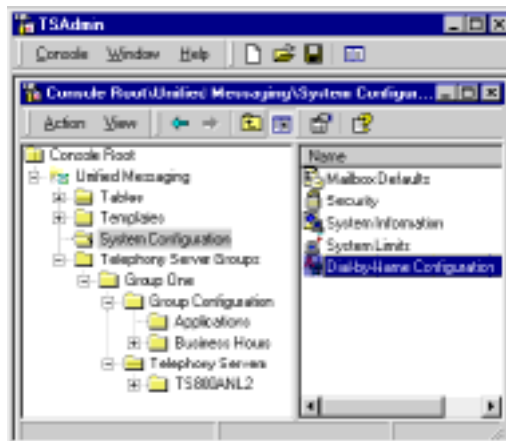
Figure 3-4   Dial by Name
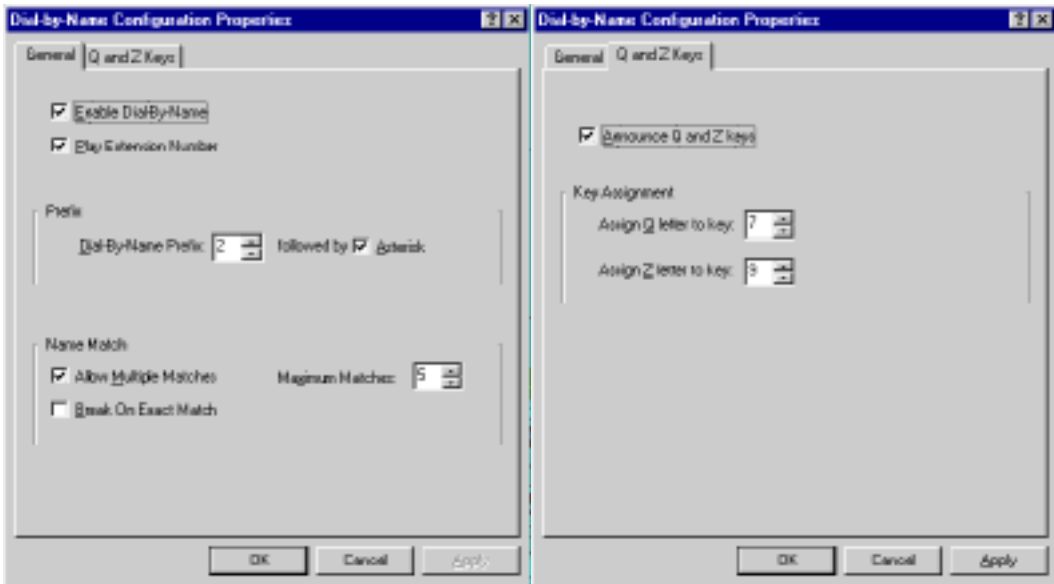
3   Figure 3-4 shows the two tabs of the Dial by Name page. On the **General** tab of the Dial by Name page:

- To enable Dial by Name, select **Enable Dial by Name**.

- To have the TUI state the extension number of the selected called party, select **Play Extension Number**.

- To specify the key that the caller must press to signal the Telephony Server to use DBN, click the **Dial by Name Prefix** spin control buttons to select the key.

- To specify that the caller must follow the numeric prefix with an asterisk, select **Asterisk**. Using an asterisk reserves an extra digit for the dial plan, so that you do not need to exclude the selected number from mailbox 1st digits.

- To configure DBN to handle multiple matches, select **Allow Multiple Matches** to allow Telephony Server to return more than one name that matches the caller input.

- To set the maximum number of matches that DBN will return for the DBN letters entered, click the **Maximum Matches** spin control.

- To have the TUI interrupt as the caller enters the name when DBN narrows the search to one matching name, select **Break on Exact Match**.

4   To change the default assignment of the 7-key to Q and the 9-key to Z when they are not represented on the phone keypad, select the **Q and Z Keys** tab:

- To have the TUI tell callers how to enter the letters "Q" and "Z," select the **Announce Q and Z keys** check box.

- To assign a telephone keypad number to the letter "Q", click the **Assign Q letter to key** spin control and select your preferred number.

- To assign a telephone keypad number to the letter "Z", click the **Assign Z letter to key** spin control and select your preferred number.

    NOTE: If you change either the Q or Z key after the directory cache has been loaded, the change will not take place until the next directory cache reload.

5   Click **OK** to accept your edits and close the page, or **Apply** to save edits without closing the page, or **Cancel** to close the page without saving.

Dial Plan

Use the Dial Plan page of TS Admin to set the maximum number of digits that can comprise a mailbox address or extension for each beginning digit of the number. For example, you could specify that numbers starting with "3" are "Fixed" at four digits long so that the TUI waits for the caller to enter four digits. The default for all first digits is that mailbox addresses beginning with any first digit is "Variable", which means that the number can be of any length between two and 64 digits.

To create or edit the dial plan:

1   In the **Scope** pane of MMC, expand (double-click) the **Telephony Server Groups** node, then **Group One**, then **Group Configuration**.

2   In the **Results** pane, double-click **Dial Plan**. The Dial Plan page appears, as exemplified in Figure 3-5.

Figure 3-5 Dial Plan
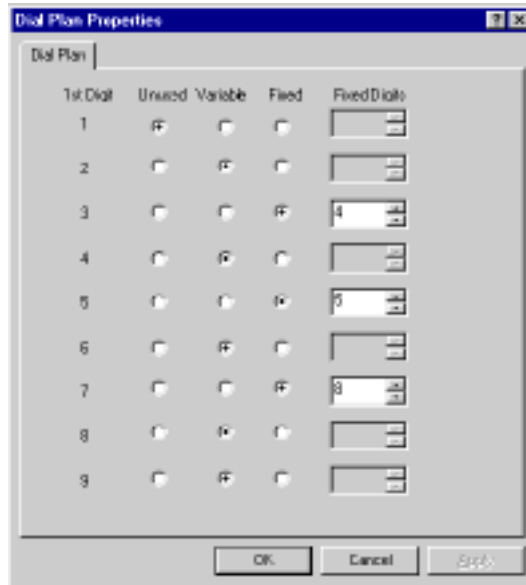
3 To disallow the use of a particular digit as the **1st Digit** (i.e., beginning or leading digit) of mailbox numbers or extensions, click **Unused** to the right of that **1st Digit**. For example, if you do not want numbers to begin with 1 or 8, select **Unused** to the right of 1 and 8. Then, if a caller attempts to enter a mailbox number or extension beginning with the digits 1 or 8, the TUI will alert that caller that the number is invalid. For an invalid extension, the TUI says "I will ring"(pause)"please hold." Then, after another pause, the TUI says "I'm sorry. That is not a valid extension." For an invalid mailbox, the TUI simply says "That is not a valid mailbox."

4 If you want mailbox numbers or extensions that begin with a particular digit to be of variable length, select **Variable** next to the number. For example, if Variable is selected for 8 as the first digit in the number, then mailboxes or extensions beginning with 8 can be comprised of any number of digits between two and 64.

5 If you want extensions or mailbox numbers that begin with a particular digit to be comprised of no more than a certain number of digits, select **Fixed**, then click the **Fixed Digits** spin control to the right of that number to the maximum number of digits that comprise the mailbox address between two and 64 digits. For example, if **Fixed Digits** is selected for the first digit of 8, and you

enter 4 in the **Fixed** field, then numbers beginning with the number 8 must be comprised of no more than four digits.

6 Click **OK** to save your edits and close the page, **Apply** to save edits without closing the page, or **Cancel** to close the page without saving.

Supporting Dial by Name

You can set your dial plan to accommodate a digit that enables a caller to quickly access Dial by Name (see the Dial by Name page for more) and make the Dial by Name access code distinct from mailbox numbers and telephone extensions. Commonly, administrators will make the access code a digit followed by an asterisk.

Supporting VPIM Dialing

If you provide the sending of VPIM messages to other members of your organization, consider setting up those members as Custom Recipients in Exchange, giving them mailbox numbers that consist of their extensions preceded by a unique prefix digit that you reserve in the Dial Plan page for VPIM accounts. Publish that VPIM prefix to your OnePoint Messenger users so that, when they want to enter a VPIM address from the TUI, they know to enter that prefix and the recipient's extension.

For example, if your organization's extensions all begin with some number other than the 8-key, you could create a "VPIM" mailbox number for someone whose extension is 1234 by entering in the Mailbox field "81234".

On the Dial Plan page, by the number 8, you would select **Fixed**, then set the **Fixed Digits** field to 5 (8 followed by the 4-digit extension).

NOTE: To set other mailbox characteristics, see Class of Service, Mailbox Defaults, and Security.

Fax Cover Pages

Use the **Fax Cover Page** node in the Unified Messaging tree of MMC to design fax cover pages. You can enter or import text or import image files to the fax cover page template. You can create multiple cover pages and store them under the Fax Cover Page node.

NOTE: Use the Fax on Demand (see page 124) or Message Center pages (see page 130) to assign fax cover pages to those services.

In Chapter 4, for details on:

- Creating a new fax cover page, see "Fax Cover Page" on page 149
- Editing a template layout, see "Modifying and Creating Fax Cover Page Templates" on page 153
- Editing a template layout on client systems, see "Editing the Fax Cover Page on Client Systems" on page 155
- Creating a logo file, see "Creating a Logo File" on page 152

To edit or delete an existing fax cover page:

1 Select the **Fax Cover Page** node, as above.

2 In the **Results** pane, double-click the cover page to edit it (or click **Delete** to delete the page). The selected cover page appears with two tabs, representing the two pages from the wizard described above.

3 Make changes in any field, then click **OK**.

Fax Documents

Use the **Fax Documents** node in the Unified Messaging tree of MMC as a staging area for the fax documents to add to the Fax on Demand list (see page 124) or to make directly available through a key in a Single Digit Routing menu (see page 136). You can add, edit, and delete documents to this node.

NOTE: To create a fax cover page, use the Fax Cover Page node (see above).

To add a document to the Fax Documents node:

1 In the **Scope** pane of MMC, expand the **Unified Messaging** node, then the **Tables** node, then select the **Fax Documents** node.

2 From the toolbar or the context menu, click **New Fax Document**. The New Fax Documents dialog appears.

3 In the **Name** field of the New Fax Documents dialog, enter a name for this document. The maximum length is 64 characters.

4 In the **Description** field, enter a description for this document. The maximum length is 1024 characters. The name and description appear in the MMC tree.

5   To attach a file, specify the path name in the **File** edit box, or click the **Browse** button. In the Browse dialog, select the file you want, then click **OK**. Only files in text (".txt" extension) or TIFF (".tif") format are supported.

6   Click **OK** to accept your edits and close the page, or click **Cancel** to close the page without saving.

To edit or delete a document from the Fax Documents node:

1   Access the **Fax Documents** node, as described above, then, in the **Result** pane, select the file to edit or delete.

2   In the context menu (right-click) or toolbar, click **Properties** to edit the document, or **Delete** to delete it.

3   If you click **Properties**, the document appears in the same dialog as used for a new document. Edit the desired fields, as described above, then click **OK** to accept your changes or **Cancel** to close the page without saving.

For a worksheet to prepare fax document lists, see Appendix D (page 257).

Fax Delivery Settings

Use the **Fax Delivery Settings** page, under the Group Configuration node in the Unified Messaging Snap-in tree in MMC, to tell Telephony Server how to deal with outgoing and incoming faxes.

The settings are:

- **Number of Retries:** How many times the Telephony Server attempts to acquire a fax resource to send a particular fax. Three is the default.

- **Retry Interval:** The time, in minutes, that Telephony Server waits between attempts to acquire a fax resource to send a particular fax. Three minutes is the default.

- **Check for Fax Request:** The time, in minutes, that Telephony Server waits after sending a fax before checking the fax queue for other faxes to send. Three minutes is the default.

NOTE: Use the **Class of Service** node (page 114) to create classes of service that set users' access to fax resources.

NOTE: Use the **Fax Cover Pages** node (page 121), the **Fax Documents** node (page 122), the **Fax on Demand** application (page 124),

and Single Digit Routing menus (page 136) to support access to fax documents available for retrieval to fax machines.

Fax on Demand

Use the Fax on Demand page in Microsoft Management Console (MMC) to set the behavior of the Fax on Demand service. Before configuring this service, you need to prepare:

- Greetings (see page 125)—OnePoint Messenger includes professionally recorded generic welcome greetings to the Fax on Demand service—cvFodEPrompt and cvFodEPrompt—in British and American English. You can also record your own.

- Fax documents (see page 122)

- A fax cover page (see page 121)

- A Single Digit Routing menu (SDR—see page 136) that you will use to make fax documents available to callers. While configuring the SDR table, you also select greetings and prompts appropriate to the Fax on Demand service.

NOTE: The option to download a list of the documents available through the Fax on Demand service is no longer automatic. To make the list available, manually create the summary list as a fax document, then make the document available as a menu option in the SDR table.

To configure Fax on Demand:

1   In the **Scope** pane of MMC, expand (double-click) the Unified Messaging node, then **Telephony Server Groups**, **Group One**, **Group Configuration**, then select the **Applications** node.

2   In the **Results** pane, double-click **Fax on Demand**. The Fax on Demand tabs appear.

3   On the **General** tab, to enable/disable Fax on Demand, select/ deselect **Enable Fax on Demand**. Enabled is the default.

4   Click the spin control by **Maximum Documents Retrieved** to select the maximum number of documents a caller can retrieve in a single call from your Fax on Demand service. The default is 3.

5   In the **Pilot Number** edit box, enter the hunt group pilot number or extension assigned to the Fax on Demand service on the PBX.

6   In the **Fax Header** edit box, enter the title to appear on the Fax on Demand document cover page. The maximum length is 64 characters.

7   In the **Fax Cover Page** combo box, click the down arrow to select a fax cover page from fax cover pages that you have created.

8   In the **SDR Table** box, click the down arrow to select the SDR menu that is set up to present the current list of generally available fax documents.

9   Click **Apply**.

To delete a fax document:

Select the document in the **Result** pane of the **Fax Documents** node, then click **Delete** on the toolbar or on the context menu (right-click).

Greetings and Prompts

NOTE: Recordings that you make and assign in TS Admin can be purely greetings, purely prompts, or a combination of the two. For simplicity, this section refers to those recordings as "greetings".

The User Greetings/Prompts node in TS Admin (the Unified Messaging tree of MMC) provides an interface to record or import system greetings that can be used by the Automated Attendant (in "Simple Attendant" or Single Digit Routing mode—see "Automated Attendant" on page 111), Fax on Demand (see page 124), and the Message Center (see page 130). You can record many greetings, then choose the ones that you want for each dialed service and time period, for the work day, for non-business hours, and for specific holidays.

Recording Greetings and Prompts

You have three basic options for choosing a greeting:

•   Use only the default greetings, such as "Welcome to the Message Center. Please enter a mailbox number." These greetings would not be sufficient for custom menus that you design.

•   Import a greeting file into the Greeting/Prompt dialog.

•   Record using the OnePoint Messenger recorder toolbar on the Greeting/Prompt dialog in TS Admin. This option is generally unavailable, because the sound card of the turnkey TS800 Telephony Server is disabled when shipped from the factory.

NOTE: Using the Greetings recorder has the effect of recording directly into the database, making the recording unavailable for separate archiving.

For the import option, there are several ways to create a greeting file:

- You can use a OnePoint Messenger Outlook client to record a greeting. The greeting is saved on the Exchange Server, then automatically copied into a personal greeting file in the \Greetings directory on the Telephony Server. Navigate to and select that file from Greetings Import dialog in TS Admin. Since user greetings are stored in the same OKI (.cvv) format as system greetings, this approach ensures that the resolution is the same as the resolution used by other system greetings.

  NOTE: Remember to replace the system greeting created on the client PC with the user's greeting.

- You can call a user mailbox from a telephone to record a greeting, as above. This would expedite saving the file on the Telephony Server, but the resolution would be somewhat lower because of the limitations of the telephone receiver.

- You can use another recording program on any computer, then import the file to the Telephony Server. The ideal format is 128-bit PCM (16 bits x 8 Khz) for highest resolution. For best results, consider using a recording service with professional talent. You can also record in:

  - 8 Khz, 8 Bit PCM

  - 8 Khz, 8 Bit Mu-Law

  - 8 Khz, 4 Bit IMA ADPCM

  The quality of other possible formats would be too low. Recording in even higher quality would simply result in an unnecessarily large file, because the telephone is not capable of rendering quality higher than this.

  If you attempt to import an unsupported format, an "Invalid Format" error displays. OnePoint Messenger converts the format of the imported file into the OKI format and stores it in a database. Since the saved file is a modified form of the original file and stored elsewhere, you cannot edit the original file and expect it to be automatically updated on the Telephony Server.

To record a greeting:

1 In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then the **Tables** node, then select the **User Greetings/Prompts** node.

2 From the toolbar or the context menu, click **New Greeting/ Prompt**. The New Greeting/Prompt dialog appears. Alternatively, to copy an existing greeting/prompt, select the greeting/ prompt in the Result pane, then click **Copy**.

3 In the **Name** field, enter a name for this greeting/prompt.

4 In the **Description** field, enter a description for this greeting/ prompt. The name and description appear in the MMC tree.

5 To record a greeting, click the **Record** button, as displayed in the table below. When finished, click the **Stop** button. You can delete and start over, and you can review the recording.

6 Alternatively, to import a recording, click **Input File**, then click the **Browse** button to open a directory tree to select the file. The file name of the imported file appears in the box to the right of the Browse button.

7 Click **OK**.

Before recording over the generic greeting or a custom greeting that you have recorded, consider copying the existing greeting to a separate folder in case you want to use it in the future. For details, see Chapter 3 in the *OnePoint Messenger Administrator Guide*.

For details on using the player/recorder, see Chapter 3 in the *OnePoint Messenger User Guide*.

To edit or delete a greeting/prompt:

1 Select the **User Greetings/Prompts** node, as described above.

2 In the Result pane, select the file to edit or delete.

3 In the context menu (right-click) or toolbar, click **Properties** to edit the greeting, or **Delete** to delete it. If you click Properties, the greeting/prompt appears in the same dialog as used for a new greeting.

4 Edit the desired fields, as described above, then click **OK**.

For a worksheet to prepare greetings, see Appendix D (page 257).

Line Card Information

Use the Linecard Information page to tell TS Admin which codecs you configured the line card to use to convert analog voice messages to digital formats and vice versa. If the line card is equipped to use more than one codec, and you configure it to use more than one, the line card can choose the best codec based on the signal. If the line card provides IMA ADPCM support, and you wish to store voice on the Exchange Server in IMA ADPCM format (a compressed format), enabling the line card to provide the IMA ADPCM encoding will reduce the load on the CPU of the Telephony Server of managing encoding transcription.

The Linecard Information dialog displays:

- "NMS" in the Type field if you installed an NMS line card

- In the "Codecs supported by linecards" field, the sound file compression/decompression (codec) formats nominally available for the installed line card type

  The codecs that are actually available depend on how you configured the line card. If you followed the directions in the *OnePoint Messenger Installation Guide* for using AG Configurator to install NMS cards, you enabled IMA ADPCM, OKI, and PCM.

To set the codecs to use on the line card:

1   In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then **Telephony Server Groups**, then **Group One**, then **Telephony Servers**, then **<TServer Name>**.

2   In the **Results** pane, double-click **Linecard Information**. The Linecard Information Properties page appears.

3   In the "Codecs supported by linecards" field, select the codec(s) for the line card to use and click **Add**. The default settings for an AG-8 or AG-24 card are **OKI 24** and **32K IMA ADPCM** in the unused list, and **OKI 32** and **64K Mu-Law** in the assigned list. If you want to store messages in IMA ADPCM on the Exchange Server, then add it to the assigned list.

4   To remove a codec from the assigned field, select the codec(s) in the assigned list, then click **Remove**.

5   Click **OK** to accept changes and close the page.

NOTE: Use the **System Information** page (see page 141) to set the voice storage format on Exchange.

Mailbox Defaults

Use the **Mailbox Defaults** page under the **System Configuration** node of the Unified Messaging Snap-in tree in MMC to set the configurable elements of the TUI used within mailboxes, such as the prompt language used within mailboxes (U.S. English by default). You only need to edit this page if you want to change one of the default settings, as described below. Users can also change the defaults for their own mailboxes.

NOTE: To set other mailbox characteristics, see Class of Service, Dial Plan, and Security.

To change a mailbox TUI default:

1   In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then **System Configuration**.

2   In the **Results** pane, double-click **Mailbox Defaults**. The Mailbox Defaults page appears.

3   Edit any field except the Call Flow field. Click the down-arrows by **Language**, **Mailbox Inbox Options**, and **E-mail Text To Speech Options** to change to a new default from the available options, as described below. These are defaults that individual users can change in their own profiles.

4   Enter text in the **Voice Message** and **Fax Message** fields in the Subject group to replace the current defaults, as described below.

5   Click **OK** to accept your edits and close the page, click **Apply** to save edits without closing the page, or click **Cancel** to close the page without saving.

Mailbox Defaults Page Fields

Language: The TUI prompts within mailboxes can be in US English, UK English (British), or Latin American Spanish, depending on what language license you have purchased. Select the default mailbox language here. The installation default is English (USA). The mailbox language can be different from the system prompt language (prompts used outside of mailboxes, such as for the Automated Attendant).

NOTE: Use the System Information page (see "System Information" on page 141) to set the system TUI language.

NOTE: When you install OnePoint Messenger, all prompt language(s) are installed. Your license determines what languages are currently available to use.

Call Flow: This field identifies the TUI used by Telephony Server.

Mailbox Inbox Options: Select one of the following four message playback options for delivering messages over the phone:

- **Voice only**: Play voice messages only. This is the default.

- **Voice then text**: Play voice messages first, followed by text messages.

- **Message in order received**: Play messages in the order they were received.

E-Mail Text-to-Speech Options: Choose one of the following two options to set how much text is converted to speech by TTS for playback by the TUI:

- **Play Headers and Body of Text Message**: Convert message headers and text e-mail to speech.

- **Play Header only of Text Message**: Play message headers only. This is the default.

NOTE: Even if **Play Header only of Text Message** is set, the user can press the 7-key again to play the whole message.

In the **Default Subject** group, you can change the Subject that appears with messages sent from non-integrated calls (calls for which the calling information—CLI—is not available):

- **Voice Message:** The Subject for voice messages created via the TUI. The default is "Default Voice Message Subject."

- **Fax Message:** Default subject for fax messages created via the TUI. The default is "Default Fax Message Subject."

NOTE: If CLI is enabled (see the System Information page— page 141) and operating, the Subject field is populated with the caller number.

Message Center

The **Messaging** document, under the Applications node of the Unified Messaging tree in MMC, contains the configuration for the Message Center application.

To manage the Message Center:

1   In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then **Telephony Server Groups**, **Group One**, **Group Configuration**, then select the **Applications** node.

2   In the **Results** pane, double-click **Messaging**. The **Messaging Properties** tabs appear. On the **General** tab:

   • Select **Enable Messaging** to activate the Message Center interface, or deselect it to stop the Message Center service.

   • In the **Pilot Number** field, enter the published extension for the Message Center. Users dial this to access the "Message Center", which controls access to their mailboxes.

   • In the **Fax Cover Page** field, click the down-arrow to select the fax cover page to be used when users download e-mail to remote fax machines.

3   On the **Greetings** tab:

   • In the **Day Greeting** field, click the down-arrow to select a greeting/prompt to be used for the Message Center during business hours. When calling from an outside phone, the "Default" prompt is "Welcome to the Message Center. Please enter a mailbox number."

   • In the **Night Greeting** field, click the down-arrow to select a greeting/prompt to be used for the Message Center during non-business hours. The "Default" prompt is the same as above.

   • Under **Mailbox Greeting Accelerator**, select **"1" key** and/or **"#" key** as the telephone key for the caller to press in order to stop the mailbox greeting. When the #-key is not used as an accelerator, it invokes the Automated Attendant. When it is used as an accelerator, callers must dial [##] to access the Automated Attendant.

4   Click **OK** to accept changes and close the page.

Enabling Message Waiting Indicators

To activate a Message Waiting Indicator on users' telephones, you must perform tasks in several places at different stages in the configuration process:

- Set up the MWI service on your PBX, then add the MWI pilot number to the Telsrv.ini file on your Telephony Server. For details, see the OnePoint Messenger integration guide for your PBX.

- Assign Notification Server to a Show N Tel (SNT) line. For details, see the *OnePoint Messenger Installation Guide*.

- If you use an SMDI integration, assign the SNT line to a port and a PBX termination point. Use the SNT Device Mapping property page.

- Assign the message waiting indicator service to individual users in their Exchange profiles.

- To test the availability of the PBX for delivering MWI alerts on an automated periodic basis, use the Data Link Configuration properties page.

- If you move the Telephony Server to another Windows NT domain, you must restart the MWI service using the command line command **cvMWI -r**, as described in Chapter 5 of the *OnePoint Messenger Installation Guide*.

Pager Settings

Paging is used to alert users of incoming unified messages, functioning as a remote Message Waiting Indicator. In some paging implementations, the message can be delivered. You can set up automatic message notification by page for selected OnePoint Messenger users in the Class of Service node and then in the Unified Messaging tab for each user in Exchange Administrator. In Exchange Administrator, you can assign to each user various pager notification privileges, such as the level of message urgency that triggers the page. For details, see Chapter 2 ("Managing OnePoint Messenger Users" on page 63).

Use **Pager Settings**, under the Group One node of the Unified Messaging Snap-in tree in MMC, to set the global pager retry interval, which has a default of three minutes.

NOTE: To enable paging, you must assign either the **Notifications (Page)** telephony application or **Notifications (Full)** to at least one

line in the **Runtime** tab of Show N Tel Manager. For details, see Chapter 4 of the *OnePoint Messenger Installation Guide*.

To change the Pager Retry Interval:

1   In the **Scope** pane of MMC, expand (double-click) the **Telephony Server Groups** node, then **Group One**, then **Group Configuration**.

2   In the **Results** pane, double-click **Pager Settings**. The Pager Settings page appears.

3   Click the **Pager Retry Interval** spin control to set the minimum number of minutes that Telephony Server waits before resending a page if the previous attempt failed.

4   Click **OK** to accept changes and close the page.

PBX Datalink Configuration (SMDI)

To determine whether your PBX requires a PBX Datalink integration template, see Chapter 2 in the *OnePoint Messenger Installation Guide*, then see Chapter 4 in that guide for instructions in the use of the **Templates** and **PBX Configuration** nodes.

Post Office Information

The Post Office Information page, under the <TServer Name> node of the Unified Messaging tree in MMC, is read-only. It provides information about the integration between the Telephony Server and its primary Exchange Server.

To view the Post Office Information page:

1   In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then **Telephony Server Groups**, then **Group One**, then **Telephony Servers**, then **<TServer Name>**.

2   In the **Results** pane, double-click **Post Office Information**. The Post Office Information page appears.

NOTE: To modify the integration, use the Configuration Wizard, which you can access from the Utilities node of MMC. For details, see "Revising the Telephony Server/Exchange Integration" on page 59 in Chapter 2.

Post Office Information Fields

The following fields are read-only fields that appear on the Post Office Information page in TS Admin.

Server: The computer name of the Exchange Server that the Telephony Server uses as its primary Exchange Server

Site: The Exchange Site name of the Exchange Server that the Telephony Server uses as its primary Exchange Server

Organization: The Organization Name used by the primary Exchange Server

Profile: The Exchange transport profile used by the Telephony Server. For example, if you use the conventional "TSAdmin" name for the Telephony Server administrator account, this field would display `TSAdminProfile(EX1_SITE)`.

Outside Caller: The Exchange mailbox used for storing messages sent by any outside caller to a OnePoint Messenger user. In other words, when a user sends a message, that message appears not only in the Inbox of the recipient but also in the Sent folder of the sender. This Outside Caller mailbox provides that Sent folder for outside-caller messages.

If your primary Exchange Server is "EX1", your Site name is "EX1_SITE", and your Exchange Organization is "EX1_CAMPUS", this field displays:

```
/O=EX1_CAMPUS/OU=EX1_SITE/CN=Recipients/CN=Out-
sideCaller.
```

Security

Use the **Security** page, under the **System Configuration** node of the Unified Messaging Snap-in tree in MMC, to set the default mailbox password and password length. Each field has a default value, as listed below, so you only need to edit this page if you want to change a default value.

Every user must have a numeric passcode to log in via the TUI. If a user enters an invalid passcode, he or she is prompted to re-enter it. The passcode that you enter here appears as the default passcode in the Unified Messaging tab of each user's profile in Exchange Administrator. You can change the passcode on that tab. Users can also change their own passcodes in Outlook or after they call into their mailboxes.

NOTE: To set other mailbox default options, such as TUI language, mail delivery sequence options, and text-to-speech options, use the **Mailbox Defaults** page under the **System Configuration** node (see page 129.)

To change a security default:

1 In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then **System Configuration**.

2 In the **Results** pane, double-click **Security**. The page appears.

3 Edit any field:

- **Minimum Password Length:** The minimum length of any mailbox password

- **Maximum Password Length:** The maximum length of any mailbox password

   To set the minimum or maximum passcode length, click the spin control to the right of the appropriate field. The minimum passcode length must be shorter than the maximum passcode length. The default is 4 digits. The maximum passcode default length is 64 digits.

- **Default Mailbox Password:** The default TUI password when a mailbox is created. To change the default TUI passcode of 1324, enter the new passcode in the **Default Mailbox Password** field, then enter the same passcode in the **Confirm Default Mailbox Password** field.

4 Click **OK** to accept your edits and close the page, or click **Apply** to save edits without closing the page, or click **Cancel** to close the page without saving.

Single Digit Call Routing

Use the Single Digit Call Routing node in TS Admin (the Unified Messaging tree of MMC) to create Single Digit Routing (SDR) menus. An SDR menu is a collection of assignments of actions to separate keypad digits, so that a caller can quickly access a common function or popular extension by pressing the telephone keypad digit assigned to it. You can assign a key to another SDR menu so that you can nest SDR menus, up to 10 levels deep (a menu option in one SDR menu calls another SDR menu).

Create greetings and prompts on the Greetings node (see "Greetings and Prompts" on page 125) then, on an SDR setup page, assign the appropriate greetings and prompts to that menu. You also use the SDR page to assign system reactions to invalid keypresses.

Assign SDR menus to the Automated Attendant function (setting up the Automated Attendant is discussed on page 111) or the Fax on Demand service (see "Fax on Demand" on page 124). Each document under the Single Digit Call Routing node is an SDR menu that you create.

NOTE: OnePoint Messenger does not provide SDR menus for personal mailboxes (AKA "multiple dial 0", "personal attendant", or personal SDR").

To create an SDR table:

NOTE: Appendix D (page 257) provides more detail on SDR design and contains worksheets that you can use to plan SDR menus, prompts, and Fax on Demand menus.

1   In the **Scope** pane of MMC, expand (double-click) the Unified Messaging node, then the **Tables** node, then select the **Single Digit Call Routing** node.

2   To create a new Single Digit Routing menu, click **New** on the toolbar or context menu (right-click) to start the SDR wizard.

3   On the first page of the New SDR wizard, enter a name for this menu in the **Name** field and a description in the **Description** field. The name and description appear in the Results pane of the MMC tree. Click **Next**. The next page of the wizard appears.

4   Click the down-arrow by each field to select its greeting/prompt:

- **Introduction Prompt:** If invoked, this is the first prompt played. It is typically a welcome and an invitation to dial an extension. If you enable Allow Cut-Through Extension, your welcome could include "If you know your party's extension, you may dial it at any time."

- **Main Prompt:** This should list the options in the active SDR menu. If the caller presses an incorrect key, this prompt plays again. It also plays if the caller returns to the menu from another operation.

- **Help Prompt:** If invoked, this prompt plays before the main prompt if the caller presses no key or an invalid key. This prompt also plays if a key has been mapped to play it.

5   Click **Next**. The third page of the wizard appears.

6   On the pages of the SDR Wizard, set values for each field, as described here by order of appearance on the form:

- **Max Retries:** Click the spin control to set the maximum number of caller keypress retries allowed. You can set this value from -1 to 99. 0 means infinite retries. Default is -1.

- **Termination Action** box: Click the drop-down arrow to select which action to take when the caller exceeds the maximum number of caller keypress retries allowed. Select from:

  - **Hang Up**: The line hangs up. The caller would hear a dial tone.

  - **Transfer to Operator**: The call is transferred to the live operator, if one is available. Otherwise, the operator's phone continues to ring.

  - **Exit**: If the SDR menu is the primary menu (the one played to callers when they call the main number), then the Exit action is the same as Hang Up. If the menu is a subsidiary menu, the main greeting for the parent menu plays.

- **Allow Cut-Through Extension:** This allows the user to interrupt the playing of the prompts by dialing an extension.

- **Minimum Extension Length:** If 'Allow Cut-Through Extension' is checked, click the spin control by this field to set the minimum number of digits that the caller must enter to reach

an extension. If the extension string length is less than this value, the entry will be treated as invalid.

- **Timeout:** Click the spin control by this field to set the amount of time in seconds that can elapse with no user input at all before the application will regard the state as invalid input. The range is from 1 to 180 seconds. 0 means no time-out. The Timeout default is -1.

   NOTE: The amount of time that the caller has to press another digit after pressing one digit is controlled on the System Limits page (see "System Limits" on page 142). For example, with Allow Cut-Through Dialing set on the SDR page and the system timeout set at two seconds on the System Limits page, if the caller wants to access the extension 6101, he has two seconds to press 1 after pressing 6 before the system invokes SDR menu option 6, instead.

- **Timeout Action:** Click the down-arrow to select the type of action that the system will take if the caller presses no keys. The options are, as described above, Hang up, Transfer to Operator, and Exit.

- **Play Prompt:** Check this box to have the system play the prompt selected from the adjacent box for timeout situations. Click the down-arrow by the field adjacent to Play Prompt to select the prompt to play after a timeout occurs.

7   Click **Next**. The Digit Table screen of the wizard appears for you to assign actions to telephone keypad keys.

To set or modify the configuration for any digit:

On the Digit Table tab, double-click the digit that you want to edit. You can assign each key (0 to 9, # and *) to any one of the actions provided by the OnePoint Messenger TUI, as described in Table 3-1.

For example, if Digit 2 is assigned to deliver Fax Document 1 (using the "Deliver fax to caller" command), double-click Digit 2 to access the edit dialog that allows you to change the command or to change the fax document.

Table 3-4 Single Digit Routing Actions

Action Name	Description	Configuration Data
Access Fax on Demand	Routes caller to Fax on Demand	None
Access Messaging	Routes caller to Message Center	None
Deliver fax to caller	Prompts the caller for a fax machine number and sends the fax associated with the prompt to the fax machine	Fax ID
Invoke SDR table	Loads and executes the specified SDR table	SDR table name
*Launch application	Invokes Show N Tel (SNT) telephony application	Full path and name of SNT application
Play Help prompt	Plays the help prompt specified in the Help field in the second dialog	None
Play prompt	Plays the prompt specified by the user	Prompt name
Restricted transfer	Allows caller to enter a name or extension of a OnePoint Messenger user to which to transfer	None
Take fax from caller	Takes a fax message from caller and deposits it to the mailbox specified in the configuration	Mailbox that receives fax
Take message from caller	Takes a voice message from caller and deposits it to the mailbox specified in the configuration	Mailbox that receives message
Terminate table	Terminates the current table	Termination is defined in the table configuration
Transfer to Operator	Transfers to Operator	None
Transfer to extension	Caller is transferred to extension specified in prompt	Extension to transfer to
Unrestricted Transfer	Allows caller to transfer to any extension as permitted by dial plan and PBX restrictions. This includes external and long distance transfers. Password confirmation is required before user can invoke a transfer.	Password to allow transfer capability
Unused	The digit is not used.	None

For example, to assign an action to the 1-key on the telephone keypad , double-click 1 in the Digit Table. The configuration dialog appears for the key and displays a field for the routing action and one or more fields for the action data, depending on the action. The data for each digit is dependent on the action type:

NOTE: *The action "Launch application", described as "Invokes Show N Tel (SNT) telephony application" in Table 3-4 above, is not yet supported.

8   In the digit configuration dialog for the selected digit, click the **Operation** field down-arrow to select the action associated with the digit, as listed above.

9   If the action needs data, as listed above, click the down-arrow in the field that appears in the **Details** area.

For example:

- If you select **Deliver Fax to caller**, the **Fax** combo box appears on the dialog for you to select a document to fax.

- If you select **Take Message from caller**, the **Mailbox #** field appears for you to enter a target mailbox number.

- If you select **Unrestricted Transfer**, two fields appear in the Details area—**Password**, for you to enter the password you want callers to enter before they can dial outside, and **Verify**, for you to reenter the password.

  NOTE: The telephone numbers that the caller can access are restricted by how you set the dial plan (see "Dial Plan" on page 119) and the dialing restriction placed on that port by the PBX.

10 Click **OK**. The new menu is saved and appears as a separate listing under the Single Digit Call Routing Node.

Editing and Deleting an SDR Menu

After you save the new SDR menu, double-click it to open and edit it, or select it and click **Delete** to delete it. An SDR document opens as a set of tabs equivalent to the wizard pages used to create the table:

- **Name** tab: Contains the Name and Description fields from the first dialog of the wizard

- **Prompts** tab: Contains the Introduction, Main, and Help prompt fields from the second dialog of the wizard

- **General** tab: Contains the caller feedback parameter fields from the third dialog of the wizard

- **Digit Table** tab: Contains the SDR table from the fourth dialog

SNT Device Mapping

Use the SNT Device Mapping page, under the Datalink node of the Unified Messaging tree in MMC, to map PBX terminals to Show N Tel lines through numbered physical Telephony Server line card ports. For details, see the OnePoint Messenger integration guide for your PBX, or see Chapter 4 in the *OnePoint Messenger Installation Guide*.

System Information

Use the **System Information** property page of TS Admin to set the Attendant mailbox address, the Exchange Server voice storage format, the default fax number, the system language, and CLI.

To set parameters on the System Information page:

1 In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then **Templates**, then **System Configuration**.

2 In the **Results** pane, double-click **System Information**. The System Information Properties page appears with these settings:

- **Attendant Mailbox**: The Attendant mailbox collects messages after business hours (see "Business Hours and Holidays" on page 113) from callers to the Automated Attendant or Message Center who do not respond to repeated prompts to enter an extension or mailbox number. If you wish to enable this function, enter the number of the mailbox that you created for it. See "Providing the Attendant Mailbox" on page 71.

    The Attendant prompt is "Please leave your name, the name of the person you are calling, and a message." If you do not enable the attendant mailbox, the Message Center and Automated Attendant repeat their requests for input up to the limit you set on **Maximum Retry Count** on the System Limits page (page 142), then hang up.

- **Default Fax Number**: This is the phone number that appears in each user's Exchange profile as the default fax machine to which the user can route fax and e-mail messages. Each user can change his own default fax number from the TUI.

- **Voice Message Storage Format**: Click the drop-down arrow to select the codec (sound compression/decompression pro-

cess) with which to store voice messages on the Exchange Server that come from telephone callers. The choices are :

- **64k Mu-Law**: The sampling is 64,000 bits per second of speech.

- **IMA-ADPCM**: The sampling rate is 32,000 bits per second of speech.

Both codecs store sound files in WAVE format (.wav extension) IMA-ADPCM takes less disk space, but 64k Mu-Law is better at capturing low frequency sounds.

If you select IMA ADPCM, you can reduce the impact on the CPU by enabling IMA ADPCM voice encoding on the line card. See "Line Card Information" on page 128.

- **System Language**: Click the drop-down arrow to select one of the available languages for TUI menus outside mailboxes. US English, UK English, and Latin American Spanish are available for OnePoint Messenger 2.0. They must be installed (Spanish must be licensed) before they appear in your list.

  NOTE: Use the **Mailbox Defaults** page (see page 129) and individual Exchange profiles (see page 63) to set the default prompt languages used inside mailboxes.

- **Enable CLI**: Select this checkbox if you want the Telephony Server to display caller data to the recipient. Outlook and the Web Client display the calling number in the Subject field and the caller name (if the PBX has information associating a caller name with a calling number) in the From field. The TUI announces the same information.

3 Click **OK** to accept your edits and close the page, or click **Apply** to save edits without closing the page, or click **Cancel** to close the page without saving.

System Limits

Use the **System Limits** page on the **System Configuration** node of TS Admin (the Unified Messaging Snap-in tree in MMC), to set default limits on TUI use—limits on caller response times and retries, message length, and Call-Me/Meet-Me sessions.

To help differentiate this page from similar ones, such as the Security page (see "Security" on page 134), you might think of this as the "Limits of System Patience page", because you set limits here on user

connection times and message lengths. Some user timeouts are not configurable, such as the amount of time the user has to press the *-key after entering his mailbox number on login. One configurable timeout limit that is set elsewhere is the Single Digit Routing inactivity timeout, set on each Single Digit Routing page.

Each setting has a default value, as noted in the field description.

To change a system limit default:

1   In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then **System Configuration**.

2   In the **Results** pane, double-click **System Limits**. The System Limits page appears with these settings:

- **User Response Timeout:** Click its drop-down arrow to set how long the system will wait for user input between key-presses before re-prompting for input. The default is 15 seconds.

     NOTE: Another response timeout is on the Single Digit Call Routing (SDR) node, for setting the limit that the system will wait for any caller input at an SDR menu. See "Single Digit Call Routing" on page 136.)

- **Maximum Retry Count:** Click its spin control to set how many times the Telephony Server will prompt a user for input when the user does not enter anything or enters an invalid entry. The default is three.

- **Minimum Message Length:** Click its spin control to set the minimum length in seconds that any message recorded through the TUI must be before it is saved in the recipient's mailbox. Setting a minimum time avoids saving misdialed calls as messages. The default is two seconds.

- **Maximum Message Length:** Click its spin control to set the maximum length in minutes that a caller can take to record a message through the TUI. The default is 10 minutes.

- **Limit Call-Me Session Time:** Click its check box to limit Call-Me session times, then click the spin control by **(Mins)** to set the maximum allowable session time in minutes.

     NOTE: You can override Call-Me/Meet-Me settings set here by defining Call-Me/Meet-Me limits in individual Classes of Service (page 114).

- **Call-Me/Meet-Me Inactivity Timeout:** Click the check box to set the number of minutes of the maximum allowable time that a user can keep a Call-Me or Meet-Me session running with no activity. The default is 5 minutes.

3   Click **OK** to accept your edits and close the page, click **Apply** to save edits without closing the page, or click **Cancel** to close the page without saving.

VPIM

The Voice Profile for Internet Mail (VPIM) service enables users to use the Internet to transport voice messages between their Exchange accounts and voice mail systems that support the VPIM protocol. VPIM messages are sent in the G.726 format, requiring transcoding to and from IMA ADPCM, the Exchange Server storage format for VPIM messages (see "System Information" on page 141), and to and from formats used by line cards (see "Line Card Information" on page 128) when users call their mailboxes to make or receive VPIM messages.

Reception of VPIM messages requires no configuration in MMC. The services that support it are automatically installed by the OnePoint Messenger installation program, including setting up the VPIM Gateway on the Exchange Server via the OnePoint Messenger Configuration Wizard. See Chapter 4 in the *OnePoint Messenger Installation Guide* for details.

To enable users to send messages using the VPIM service, you must purchase a OnePoint Messenger VPIM feature site license, and enable it through License Install. See "Upgrading OnePoint Messenger Feature Licenses" on page 220 in Chapter 9 for details on feature licenses. You can use a Class of Service (COS) (see page 114) to restrict users from using VPIM Send. In that case, a user receiving a VPIM message would not be able to reply to it.

Mapping Telephony Server Administrator to TS Admin

In versions of OnePoint Messenger previous to OnePoint Messenger 2.0, the application "Telephony Server Administrator" managed some of the functionality now managed by TS Admin. Telephony Server Administrator has been removed from OnePoint Messenger. If you are familiar with that Telephony Server Administrator interface, you can use this section to help you find in TS Admin the configuration elements that appeared in Telephony Server Administrator. The thirteen of the obsolete Telephony Server Administrator were:

- **Business Hours**: This tab is replaced by the Business Hours node. See "Business Hours and Holidays" on page 113.

- **Class of Service**: This tab is replaced by the Class of Service node. See "Class of Service" on page 114.

- **Dial by Name**: This tab is replaced by the Dial by Name page. See "Dial by Name" on page 117.

- **Dial Plan**: This tab is replaced by the Dial Plan page. See "Dial Plan" on page 119.

- **Fax Cover Page**: This tab is replaced by the **Fax Cover Page** node. See "Fax Cover Pages" on page 121 to design the cover page. See "Message Center" on page 130 to assign the system fax cover page and "Fax on Demand" on page 124 to assign a cover page to Fax on Demand deliveries.

- **Fax on Demand**: This tab is replaced by several interfaces:

    - To manage the fax documents that are made available to Fax on Demand, see "Fax Documents" on page 122.

    - To configure Fax on Demand settings, see "Fax on Demand" on page 124. Settings include the maximum documents retrievable per session, the fax header, and a introductory greetings and prompts for the Fax on Demand service.

    - To create a Fax on Demand menu, see "Single Digit Call Routing" on page 136.

- **Fax Settings**: This tab is replaced by the Fax Delivery Settings page. See "Fax Delivery Settings" on page 123 to manage the fax ports, including number of retries and the retry interval.

- **Greetings**: This tab is replaced by several interfaces:

    - To record greetings and prompts used by the dialed services, use the User Greetings and Prompts node. See "Greetings and Prompts" on page 125.

    - To assign greetings to services, see "Automated Attendant" on page 111, "Fax on Demand" on page 124, and "Message Center" on page 130.

- **Mailbox Defaults**: This tab is replaced by the Mailbox Defaults page. See "Mailbox Defaults" on page 129 for the default mailbox language, message component playing options, including text-to-speech options.

NOTE: Set individual mailbox language preferences in the **Language** field on the **Unified Messaging** tab of each user in Exchange.

- **Pager Settings**: This tab is replaced by the Pager Settings page. See "Pager Settings" on page 132 for the field **Minimum Page Delivery Interval.**

- **Security**: This tab is replaced by the Security page. See "Security" on page 134 to configure passcode (password) parameters for users to access their mailboxes through telephones.

- **System Limits**: This tab is replaced by the System Limits page. See "System Limits" on page 142 for TUI session time limits.

- **System Parameters**: This tab is replaced by several interfaces. The fields in that tab were:

  - **Enable Operator**—See the Attendant Configuration page (page 110) under the Group Configuration node of MMC to enable the Operator and set the Operator extension.

  - **Enable Automated Receptionist** (and **Pilot Number**)—See "Automated Attendant" on page 111.

  - **Enable Fax on Demand** (and **Pilot Number**)—See "Fax on Demand" on page 124. See also Chapter 4.

  - **Attendant Mailbox**—See "System Information" on page 141.

  - **Messaging Pilot Number**—See "Message Center" on page 130.

  - **Diagnostic Mailbox**—This was used by Telephony Server engineers as a test mailbox. It has been removed from the configuration pages.

  - **System Default Language**—See "System Information" on page 141.

  - **Default Fax Number**—See "System Information" on page 141.

4. Providing Fax Features of OnePoint Messenger

This chapter provides an administrator's perspective on the fax functionality supported by OnePoint Messenger. It contains the following sections: :

Section	Page
Preparing Fax Resources	**147**
Configuring Fax Services • Fax Cover Page • Setting Fax Numbers for Users • Managing Fax on Demand	**149** 149 157 158
Fax Performance Monitoring	**159**
Client Fax Features	**160**

Preparing Fax Resources

This section lists the tasks involved in making the fax features of OnePoint Messenger available. Services include:

- Support the sending of faxes to fax machines when users convert e-mail to faxes and print faxes from their mailboxes.

- Support the delivery of faxes from a telephone to users' mailboxes.

- Support the routing of faxes from users' mailboxes to other mailboxes (including VPIM-compliant voice mailboxes) using either a desktop client or a telephone.

- Desktop client fax creation and sending them either directly to fax machines or as attachments to Outlook e-mail. See "Client Fax Features" on page 160.

- The Fax on Demand service—After completing the tasks in this section, see the following section "Managing Fax on Demand" on page 158.

To prepare the Telephony Server to send and receive faxes:

1   Purchase Voice Port and Fax Port feature licenses as part of OnePoint Messenger. See "Upgrading OnePoint Messenger Feature Licenses" on page 220 in Chapter 9 of this guide for details, or see Chapter 5 in the *OnePoint Messenger Installation Guide*.

2   Install and configure a Brooktrout TR-114 fax card in the Telephony Server. See Appendix B in the *OnePoint Messenger Installation Guide*.

3   Install and configure a Brooktrout TR-114 fax card in the Telephony Server. For details, see Appendix B in the *OnePoint Messenger Installation Guide*.

4   Assign fax resources to ports in Show N Tel Manager:

    To provide downloading of e-mail or faxes to an online fax machine ("online" means a telephone number other than the one the caller is calling from), Telephony Server can use the general purpose "Telephony Server" telephony application that you assign to ports to support voice access.

    To enable a caller to retrieve e-mail or a fax to a non-online fax machine, assign the SendFax telephony application to at least one port. That port must be tied to an outdial port on the PBX.

    You can provide Fax on Demand, as above, by assigning the "Telephony Server" and SendFax applications. In some PBX integrations, you can assure that a port will be available to Fax on Demand callers by assigning the FaxOnDemand telephony application to a port. If you are expecting a heavy load, consider dedicating more than one port to Fax on Demand. See your PBX integration guide for details.

    For details on assigning lines to ports, see Chapter 4 of the *OnePoint Messenger Installation Guide* or your PBX integration guide.

5   Use the Unified Messaging Snap-in to Microsoft Management Console to manage Fax on Demand and system fax settings, as described next. For details on using the Unified Messaging Snap-in, see "MMC and TS Admin, the Unified Messaging Snap-in, Overview" on page 91 in Chapter 3 of this guide.

NOTE: To install or uninstall disable fax cards and drivers, see Appendix B in the *OnePoint Messenger Installation Guide.*

Configuring Fax Services

As described above, set up the Telephony Server to receive and send faxes, and to support the Fax on Demand service.

Fax Cover Page

The Telephony Server administrator can create multiple fax cover pages on the **Fax Cover Page** node in TS Admin (the Unified Messaging Snap-in to Microsoft Management Console—MMC), as introduced in "Fax Cover Pages" on page 121 in Chapter 3 of this guide.

Client fax cover pages: Desktop users can also create cover pages using the same cover page templates. When users send faxes to fax machines from Unified Fax Printer, QuickFax gives them the option of creating a fax cover page or using the system fax cover page. Chapter 5 in the *OnePoint Messenger User Guide* describes some of the cover page editing facilities, leaving you with the decision of how much more instruction to give. For details, see "Editing the Fax Cover Page on Client Systems" on page 155 in this chapter.

Fax on Demand cover page: The Fax on Demand service attaches a cover page to the faxes it sends. Use the **Fax Cover Page** node to create the fax cover page, then assign it as the Fax on Demand fax cover page on the **Fax on Demand** node (page 124).

Message Center fax cover page: Assign the Message Center fax cover page on the **Messaging** page (see page 130) of TS Admin. The Message Center attaches a "system" fax cover page to faxes that it sends when users route faxes and text e-mail from their mailboxes to remote fax machines, which are fax machines other than the default or online fax machine.

Creating Fax Cover Pages

To create a new fax cover page:

1   In the **Scope** pane of MMC, expand (double-click) the **Unified Messaging** node, then the **Tables** node, then the **Fax Cover Page** node.

2   Click **New** in the toolbar or context menu. The first screen of the New Fax Cover Page wizard appears, as shown in Figure 4-1. This screen becomes the **General** tab of the finished cover page.

3   You can design as much of the cover page as you want in the wizard, then click OK to save it. To continue editing it, double-click

the saved page in MMC. To delete it, select it in MMC, then press the **Delete** key.
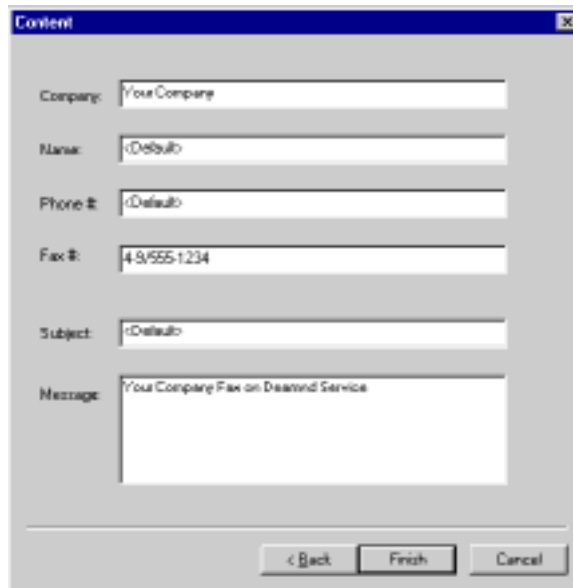
Figure 4-1   Fax Cover Page Wizard, General Tab
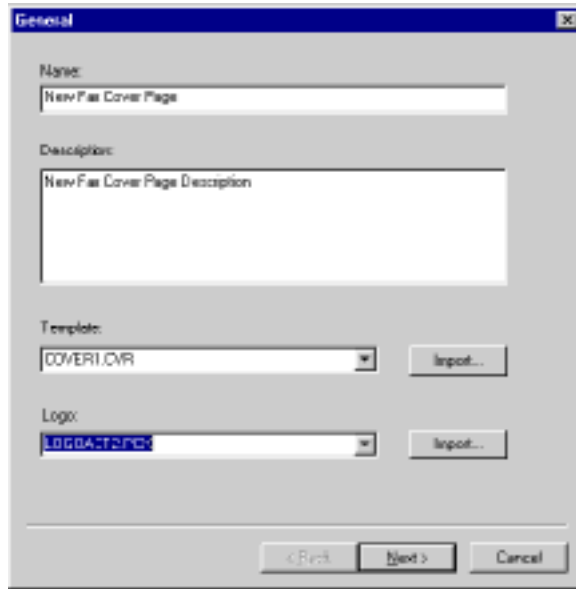
4   In the **Name** field, enter a distinctive name for the cover page. The maximum length is 64 characters.

5   In the **Description** field, enter a description of the cover page contents to indicate to you its purpose from the MMC Result pane. The maximum length is 255 characters.

6   To select one of the three bundled templates that identify where the various fax cover page components appear on the cover page, click the down-arrow in the **Template** field.

Alternatively, if you have created or purchased another template and placed it elsewhere, or edited a bundled version and saved it elsewhere (see "Modifying and Creating Fax Cover Page Templates" on page 153), click **Import** to browse the Windows file manager to locate that template (.cvr format).

7   If you want to have a logo appear on the cover page, select **Cover1.cvr** in the **Template** field. It contains a field at the top for a logo. Then click the down-arrow in the **Logo** field to select one of the logo files in the \Fax\Coverpage subdirectory. Alternatively, click **Import** to browse the Windows file manager for a logo (.pcx format) (see "Creating a Logo File" on page 152).

8 Click **Next**. The second screen of the Fax Cover Page wizard appears, as shown in Figure 4-2. This screen becomes the **Contents** tab of the finished cover page.

Figure 4-2 Fax Cover Page Wizard, Contents Tab

9 Click the down-arrow in the **Logo** field to select one of the logo files available in the \Fax\Coverpage directory. To create a new logo file, see "Creating a Logo File" below.

Alternatively, to browse the Windows Explorer for a logo in .pcx format, click **Import**. Another option is to replace one of the logo files in the \Coverpage directory with one of your own.

10 Click **Next**. The second screen of the New Fax Cover Page wizard appears. This screen becomes the Contents tab of the finished cover page.

11 You can complete as many of the fields as you want. The fields are **Company**, **Name**, **Phone Number**, **Fax Phone Number**, **Subject**, and **Message**. The fields are dynamic. When a user downloads a message from his or her Inbox to a remote fax machine, the field information here is overwritten by the data specific to the mailbox and message fields. When a caller accesses a document from Fax on Demand, the entries you make in these fields take effect for the appropriate fields. In neither case would an entry here in the Name field be used; the Name field is

populated dynamically when QuickFax users use the system fax cover page.

8   Click **OK**, **Cancel**, or **Apply**.

NOTE: To create another cover page, repeat the process above from the **Fax Cover Page node**.

To edit or delete an existing fax cover page:

1   Select the **Fax Cover Page** node, as above.

2   In the **Results** pane, double-click the cover page to edit it (or click **Delete** to delete the page). The selected cover page appears with two tabs, representing the two pages from the wizard described above.

3   Make changes in any field, then click **OK**.

Creating a Logo File

Cover1.cvr, in \OnePoint Messenger\Fax, is the one template file that contains an area for a corporate logo (or other graphic). For instructions on editing that cover page template, see "Modifying and Creating Fax Cover Page Templates" below.

To adapt a logo for use on the cover page:

1   Use a paint program that accepts the format used by your logo file to open it. To have your logo appear in exactly the size in which it is created, you can modify the logo area in Cover1 to accommodate it, or you can scale it in your paint program. The default size of the area on the cover page provided for the logo is 1427 pixels wide by 293 high.

2   Export the file as a grayscale .pcx file, RLE encoded (Zsoft Paintbrush Version 5).

     If your paint program cannot export the file in .PCX format but can export the file in Windows Bitmap format (.BMP), do so, then open that .BMP file in **Paint** (accessed from **Start** > **Programs** > **Accessories**). Save the file first as a "**16 Color Bitmap**", then, from **Save as type**, select **All Files**. In **File Name**, enter **<logo name>.pcx**.

3   For easiest access from the Fax Cover Page dialog, save the logo file in the **\OnePoint Messenger\Fax directory**. Alternatively,

you can save it in another directory, then use the **Import** button on the Fax Cover Page dialog.

NOTE: To make a logo file visible to the Fax Cover Page dialog, right-click the file, choose **Properties**, select **Archive**, then **OK**.

Modifying and Creating Fax Cover Page Templates

You can modify, to some degree, any of the three fax cover page template files included with OnePoint Messenger—Cover1.cvr, Cover2.cvr, and Cover3.cvr. The OnePoint Messenger software suite does not include an application for creating new fields, but you can modify their size, shape, and placement, and you can add other shapes and text to the body of the cover page. After you modify a template, you can save it under its current name or under a new name (use a .cvr extension). If the new template is in the \OnePoint Messenger\Fax subdirectory, it will appear in the template drop-down list in TS Admin. Desktop users can also edit and modify templates. They enable the new template by associating it with Template 1, 2, or 3 in Fax-dlg.ini.

The three templates are installed on the Telephony Server and on client systems. Changes you make to a template file on the Telephony Server are not automatically updated to client systems. One way to distribute changes would be to send the replacement template or logo via e-mail. Another way to distribute would be to place the change in a shared directory such the UMClient directory on the Telephony Server that is already shared for client access. A third way to distribute would be to use Windows SMS application. You might also distribute an edited Fax_dlg.ini file to users so that it calls, as a default, your preferred template and logo.

To modify or create a cover page template:

1 Before editing a cover page template, you should save a copy of it as a reference.

2 Open the file by navigating to \OnePoint Messenger\Fax, then double-click Cover1.cvr, Cover2.cvr, or Cover3.cvr. Editing the logo file on Cover1.cvr is presented here as an example.

3 When OnePoint Messenger is installed, the logo area on **Cover1.cvr** is a blue rectangle at the top labelled **Logoact.pcx**, as shown in Figure 4-3. Click anywhere on that rectangle to select it.

4   Right-click the blue rectangle to open a dialog that provides siz-
    ing options, or use the control handles that appear to move or size
    the rectangle. Your logo will appear within that resized area and
    conform to the fill options that you set in the dialog.

Figure 4-3   Fax Cover Page Template, Edit Dialog
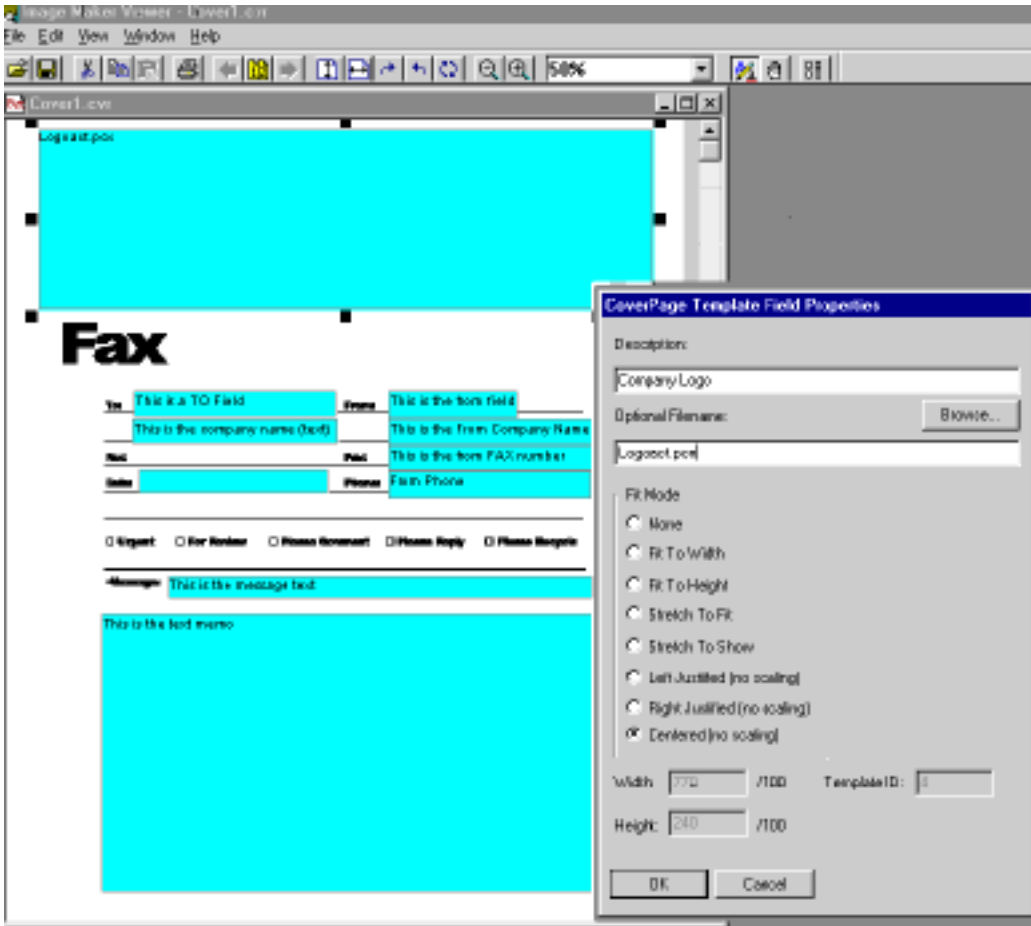
While the size of your logo will be automatically adjusted to fit
within the parameters you set in this dialog, to minimize changing the
aspect ratio of your logo, reduce the logo size in a paint program so
that it fits the parameters you set in the Properties dialog.

The size of the default logo field is 1 and 5/16" high by 7.25" wide
(1498 by 279 pixels, a conversion ratio of 206). The dimensions
expressed in the Width and Height fields of the Properties dialog are
in hundredths of inches, as indicated by "/100" to the right of the
fields. However, the numbers do not accurately represent the printed

result. One way to test field size is to use the rectangle drawing tool supplied with ImageMaker to outline the logo box, then print the page and measure the outline.

Editing the Fax Cover Page on Client Systems

Client systems have the same three cover page templates and logo files as described above. To avoid having users edit cover pages:

• They can use the Message Center fax cover page that you assign on the Telephony Server by *not* selecting **Create Cover Page** on the **Unified Fax Printer** dialog when using QuickFax.

• Distribute a modified cover page template and/or logo file. Distribute a modified Fax_dlg.ini file, or tell users how to edit it.

The instructions in Chapter 4 of the *OnePoint Messenger User Guide* and in the client online help do not cover some areas of editing the custom fax cover page. The instructions explain how to replace one of the default logo files with another; they do not include editing the Fax_dlg.ini file, which is described here.

Client systems have a file called Fax_dlg.ini containing template preferences. On WindowsNT, the file is in \WINNT; on Windows 95/98, it is on \WINDOWS. In Fax_dlg.ini, users can assign logos to Logo 1, 2, or 3, signature files to Signature 1, 2, or 3, and templates to Template 1, 2, or 3.

Figure 4-4   Fax_Dlg.ini Sample

```
[ADDR_DIALOG]
TONAME=Alex
TOCO=
FAXNUM=5555
SUBJECT=
FROMNAME=
FROMCO=
FROMTEL=
FROMFAX=5555
RESOLUTION=fine
BODY=cover1.tif
TEMPLATE=cover1.cvr
LOGO=OURLOGO.PCX
SIGNATURE=SIGFRED.PCX
TEMPLATE1=cover1.cvr
TEMPLATE2=cover-new.cvr
TEMPLATE3=cover3.cvr
BODY1=cover1.tif
BODY2=cover2.tif
BODY3=cover3.tif
SIGNATURE1=SIGFRED.PCX
SIGNATURE2=SIGTOM.PCX
SIGNATURE3=SIGGHAND.PCX
SIGNATURE4=SIGKEN.PCX
LOGO1=LOGOACT.PCX
LOGO2=OURLOGO.PCX
LOGO3=LOGOXYZ.PCX
DEFAULT_STYLE=0
DEFAULT_SIGNATURE=3
DEFAULT_LOGO=0
```

Figure 4-4 shows an edited Fax_dlg.ini file. TONAME, FAXNUM, FROMFAX, RESOLUTION, BODY, TEMPLATE, LOGO, and SIGNATURE contain values derived from entries and selections that the user made in the QuickFax Fax Cover Page Generator dialog. The values for TEMPLATE1, TEMPLATE2, TEMPLATE3, BODY1, BODY2, BODY3, SIGNATURE1, SIGNATURE2, SIGNATURE3, LOGO1, LOGO2, and LOGO3 have presets, and they can only be changed by editing Fax_dlg.ini in a text editor. The example in Figure 4-4 displays default values except LOGO2, which has been changed to OURLOGO.PCX, and TEMPLATE2, which has been changed to cover-new.cvr.

The QuickFax Fax Cover Page dialog provides:

- Three template options as Sheet 1, Sheet 2, and Sheet 3, which correspond in Fax_dlg.ini to TEMPLATE1, TEMPLATE2, TEMPLATE3, respectively

- Three logo options (for Cover1.cvr) as Logo 1, Logo 2, and Logo 3, which correspond in Fax_dlg.ini to LOGO1, LOGO2, and LOGO3, respectively

- Four signature options as Signature 1, Signature 2, Signature 3, and None, the first three of which correspond in Fax_dlg.ini to SIGNATURE1, SIGNATURE2, and SIGNATURE3, respectively

So, in the example shown in Figure 4-4, by changing TEMPLATE2 to cover-new.cvr in Fax_dlg.ini and LOGO2 to OURLOGO.PCX, the user can select Sheet 2 and Logo 2 in the QuickFax Fax Cover Page Generator dialog to use the cover-new.cvr template (a site-edited version of Cover1.cvr) with the preferred logo OURLOGO.PCX.

Setting Fax Numbers for Users

Incoming faxes: An outside caller can send a fax to a user's mailbox by calling the extension associated with the user's mailbox, then pressing **5**. You can also provide another route to the mailbox by giving the user a second extension on the PBX not connected to a physical telephone. Then, on the user's Unified Messaging tab in Exchange, enter that number in the **Fax DID/DNIS** field. See "Managing OnePoint Messenger Users" on page 63 of Chapter 2.

Outgoing faxes: When users call the Message Center to route a message to a fax machine, the TUI gives them three destination choices:

- Use the online number (the phone number from which the user is calling).

- Enter a fax machine phone number.

- Use the default fax number specified in the **Fax Delivery Number** field on the Unified Messaging tab of the user's Exchange profile. See "Managing OnePoint Messenger Users" on page 63 of Chapter 2. Unless you or the user change the number, the number that appears on the user's Exchange profile is the one specified in the **System Information** page of TS Admin (see "System Information" on page 141 of Chapter 2.) Users can change their default fax number from the TUI.

See also "Sending and Receiving Faxes via the TUI" on page 160.

Managing Fax on Demand

Telephony Server includes a Fax on Demand (faxback) feature. The Fax on Demand node provides you a way to manage a list of documents for general availability for downloading to callers' fax machines. Anyone can call the Fax on Demand extension and request the document summary or a particular document by entering the associated number ID. Fax on Demand then faxes the requested documents to the designated fax machine number. You can add documents to the list in text or TIFF format.

Enabling and managing the Fax on Demand service entails:

• Install the Fax on Demand server software, which happens automatically as part of OnePoint Messenger installation on the Telephony Server.

• Set up ports to support Fax on Demand—see Chapter 4 in the *OnePoint Messenger Installation Guide* or your PBX integration guide.

• Manage Fax on Demand, as described next.

In Microsoft Management Console, use the following tabs to configure Fax on Demand manage its documents:

• Use the **Fax Cover Page** node, as described in "Fax Cover Pages" on page 121 in Chapter 3, to create or modify system fax cover pages used by Fax on Demand.

• Use the **Fax Delivery Settings** node, as described below in "Setting Fax on Demand Delivery Retry Parameters".

• Use the **Fax Documents** node, as described in "Fax Documents" on page 122 in Chapter 3 to create fax documents available to the Fax on Demand list. To use the Unified Fax Printer to create and store the fax, see "Creating Faxes with the Unified Fax Printer" in Chapter 5 of the *OnePoint Messenger User Guide*.

   NOTE: You cannot use a fax machine to add a fax to the Fax on Demand list.

• Use the **Fax on Demand** node, as described in "Fax on Demand" on page 124 in Chapter 3 to manage the Fax on Demand fax document list, set the maximum number of copies per document allowed to be retrieved at one time, set the phone number of the Fax on Demand service, and enable the Fax on Demand service.

The limitation of one phone number assigned to Fax on Demand means that you can only have one Fax on Demand list, but one workaround is to dedicate portions of the list to separate groups of documents. For example, if you have both sales and support literature, you would dedicate a block of numbers to the sales literature and another block to the support literature.

Alternatively, you can create Single Digit Routing menus that contain options for downloading faxes. For example, you might have a Marketing department menu that contains options for downloading Marketing faxes, then have a Support department menu that contains options for downloading Support faxes. You can also provide access to the Fax on Demand list from a Single Digit Routing menu; this approach would allow access to Fax on Demand when you do not assign a pilot number to it.

- Use the **Greetings** node, as described in "Greetings and Prompts" on page 125 in Chapter 3, to modify the Fax on Demand greetings. Generally, you will not have a sound card on the Telephony Server, or you will not have easy access to the Telephony Server, so you should consider setting up a remote connection to a multimedia PC. See "Performing Remote Management" on page 174 in Chapter 5.

For detailed instructions on retrieving faxed documents from Fax On Demand, see "Using Fax on Demand" in Chapter 5 of the *User Guide*.

Setting Fax on Demand Delivery Retry Parameters

After a fax delivery attempt, the TUI announces the status of the delivery. If the online fax delivery fails for any reason, the server re-prompts the sender for manual re-transmission. If the fax transmission fails during transmission to a phone number other than the one used by the caller, Telephony Server resends the fax, up to a configurable maximum number of tries in configurable intervals. The default is three retries in 120-second intervals. You can set the number of retries and retry interval on the **Fax Settings** node in Microsoft Management Console. See "Fax Delivery Settings" on page 123 in Chapter 3 for details.

Fax Performance Monitoring

The Statistics Reporting Program uses the Windows NT Performance Monitor and Event Log to track system performance and functional-

ity, including call events such as calls answered, session length, call start time, faxes delivered/received/delivery failed/fax port unavailable, ports active, etc. From that, OnePoint Messenger reports on activities, including call rate, fax delivery rate, Text-to-Speech rate, maximum lines active, and maximum faxes delivered. See Chapter 8, "Performance Monitoring" on page 201 for details.

Fax Board Performance

The Brooktrout fax board supported on Telephony Server provides a 14.4kbps or less transmission rate, depending on the receiving fax machine supporting the fax transmission speed. The Brooktrout fax board speed is 14.4kbps, with auto-step-down to 12000, 9600, 7200, 4800, 2400bps.

Client Fax Features

See Chapter 5 in the *OnePoint Messenger User Guide* for details on using OnePoint Messenger fax features, including Unified Fax Printer, using Outlook for faxes, using Image Maker Viewer or Imaging for Windows to view and annotate faxes, and sending and receiving faxes through the Telephone User Interface.

Sending and Receiving Faxes via the TUI

Telephony Server allows you to set a general default fax delivery phone number for incoming faxes on the **System Limits** page of MMC. See "System Limits" on page 142 in Chapter 3 for details.

Exchange Administrator allows you to set an incoming fax DID/DNIS extension and a default fax delivery phone number (for faxes both from outside callers and for the user downloading messages to a fax machine) for each user in the **Fax and Pager** dialog of the **Unified Messaging** tab in Exchange. See "Managing OnePoint Messenger Users" on page 63 in Chapter 2.

The **Fax DID/DNIS** extension setting on the **Fax and Pager** dialog in Exchange is for sending faxes from fax machines into the user's mailbox. The user default fax number is for the user's primary fax machine. If the fax machine is in the office, you can set just the extension. Enter a full phone number if it is outside the office.

In addition, users can change their own fax delivery numbers by accessing the **Change Default Fax Number** menu through the TUI.

See "Presetting Your Fax Delivery Number" in Chapter 5 of the *OnePoint Messenger User Guide*.

When a user accesses a message through the TUI, the Play Message menu provides an option to download the fax to a fax machine. The user can choose the default number, as described above, the "online" number (the phone from which the user is calling), or input another fax machine number. If the user elects to input a number, the TUI attaches a cover sheet to the fax, so the user can, in effect, route the message to anyone's fax, and also add a hotel room number for routing purposes.

Sending a Fax to a OnePoint Messenger User's Mailbox

There are several ways for OnePoint Messenger users and others to deposit a fax in a OnePoint Messenger user's mailbox. As mentioned at the beginning of this chapter, users can generate fax documents with Unified Fax Printer, then e-mail them. OnePoint Messenger users also can use the TUI to call their own mailboxes to create intentional messages for other users that include faxes. They can treat received faxes as any other e-mail to annotate, forward, or reply.

When calling from a fax phone, any caller can send hardcopy faxes to a user's mailbox in several ways:

• Dial the recipient's phone number or mailbox number. Then, send a fax after the recipient's greeting has played.

• Send a fax after leaving a voice message.

• Send a "walkaway fax" to the recipient's voice line.

• Use the OnePoint Messenger Direct Inward Dial (DID) feature.

Methods for creating and sending faxes are described in detail in the section "Sending Faxes to a OnePoint Messenger User's Mailbox" in Chapter 5 of the *OnePoint Messenger User Guide*.

NOTE: In Chapter 6 of the *OnePoint Messenger User Guide*, users are advised to record a telephone greeting that is at least five seconds in length. This allows time for OnePoint Messenger to listen for a fax tone in the incoming call. If one is detected, the greeting is interrupted, and OnePoint Messenger collects the incoming fax and delivers it to the mailbox.

Retrieving a Fax from a User's Mailbox

Users can retrieve faxes in their mailboxes by:

- Viewing faxes in Imaging for Windows or a compatible TIFF viewer.

- Sending faxes from the mailbox to a printer.

- Sending faxes to any fax machine by calling their mailboxes through the TUI.

For details, see Chapter 5 of the *OnePoint Messenger User Guide*.

Users can also have the TUI send their text e-mail to a fax machine. Telephony Server converts the e-mail header and text body to a fax and delivers it to the number specified. Text and fax components in a message are rendered into one fax. Other components, such as inline images and attachments, are not rendered. However, the TUI identifies the components of each message.

Telephony Server provides several ways to retrieve e-mail and fax messages from a mailbox to a fax machine:

- Retrieve the message to the default fax phone number.

- Retrieve the message to the phone from which you are calling (the "online" phone.)

- Retrieve the message to another phone number.

For the last two methods, Telephony Server creates a fax cover page, listing the sender, the recipient, and destination fax number. Telephony Server also allows the user to enter a destination hotel room number on the cover page to help the hotel staff deliver the fax.

NOTE: A user can convert an e-mail message to a fax in order to forward it as a fax to others. In such a case, however, the cover page may be somewhat confusing to the recipient. Consider this example: You are the recipient of an e-mail message, and you want to forward the e-mail to someone via fax. The fax cover page lists the original sender in the sender field and you as the recipient. The name of the person to whom you are forwarding the message does not appear on the cover page at all. Fortunately, there is a field on the cover page for your recipient's hotel room number. If your recipient is staying at a hotel, that room number will help the hotel to deliver the fax.

Other Telephony Server Fax-Handling Features

Many of OnePoint Messenger's additional fax-handling features are covered in Chapter 5 of the *OnePoint Messenger User Guide*. They include:

- Online viewing options, including simultaneously viewing the fax while listening to a voice attachment, as well as combinations of full-page and thumbnail views.

- Reply and forwarding options, including adding combinations of text, attachments, and several voice attachments to annotate parts of the fax message, and sending it to distribution lists.

- Saving options, including saving drafts, and converting the fax into a BMP file. See "Using Imaging for Windows" in Chapter 5 of the *OnePoint Messenger User Guide*.

- Delivery options, including changing the default fax number through the TUI, and scheduling a fax delivery to a fax number. Telephony Server prompts the user to enter the fax number, date, and time of the future delivery. After the confirmation, Telephony Server deposits the fax document into the fax queue and delivers the fax at the date and time specified.

For more information on the use of the TUI to handle faxes, see "Learning the TUI Command Structure" in Chapter 5 of the *OnePoint Messenger User Guide*.

5. Operation and Maintenance

This chapter is an introduction to operation and maintenance. It discusses RAS (Reliability, Availability, and Serviceability), covering system validation, diagnostics, monitoring, and performance functions in the OnePoint Messenger environment. It contains the following sections::

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• Using Telephony Server Monitor (TSMon)	168
• Using TSMon to Monitor Operation	170
• Controlling Telephony Server Stops and Starts	172
• Auxiliary Logs	173
• System Validation Tools	175
Performing Remote Management	**174**
Monitoring Port Activity in Show N Tel Manager	**174**
Diagnostics	**175**
System Maintenance	**178**
Performance and Capacity Planning	**181**
RAS Operational Characteristics	**181**

Figure 1-3 in Chapter 1 of this guide shows the OnePoint Messenger and Windows NT RAS (Reliability, Availability, and Serviceability) tools and their logs in a tree view organized by three RAS categories—Diagnostics, Performance, and Maintenance. This chapter is divided into those same major sections, in addition to operation.

NOTE: The "RAS" acronym is also used in the Windows NT world to refer to Remote Access Services.

RAS tools assist in controlling and upgrading the system. Because OnePoint Messenger depends on the performance of its host hardware, the Windows NT Server operating system and its utilities, and

other hardware and software components, this chapter also provides introductory information about those components.

NOTE: For information on revising the network configuration and upgrading software or licenses, see Chapter 9 (page 215).

Operating the Telephony Server

Once OnePoint Messenger has been configured, operation can be set to be nearly automatic, including an automatic recovery mode. You can even do backups and change line assignments while services continue to run. The typical cases that require you stop telephony services include:

- Before performing software service (upgrading): see "OnePoint Messenger Software Maintenance", on page 179.

- Before installing upgraded hardware. See Appendix B in the *OnePoint Messenger Installation Guide*.

- Before running the OnePoint Messenger Installation Program to install new prompt languages

- Enabling newly recorded TUI system greetings: see "Greetings and Prompts" on page 125.

- Before using Configuration Wizard to designate a new primary Exchange Server: see "Revising the Telephony Server/Exchange Integration" on page 59 in Chapter 2.

- Before running Directory Initialization: see Appendix A, "Directory Services", on page 229.

- To remove an accumulation of TMP files on the Telephony Server: Starting with OnePoint Messenger 2.0 Service Pack 1, TMP files are automatically deleted when you stop services.

As an administrator, stopping and starting telephony services means to click the **Stop** or **Start** buttons in **Telephony Server Monitor** (**TS Mon**). However, there are a few variations on the theme, such as setting automatic and manual start modes.

When you install OnePoint Messenger on the Telephony Server, Telephony Server services are pre-set in Telephony Server Monitor (TSMon) to start in manual mode. That means, to start the services, you must log in, open TSMon, then use TSMon to start the services. See "Using Telephony Server Monitor (TSMon)", on page 168.

Natural MicroSystems (NMS) line cards are pre-set to boot after the Telephony Server administrator logs in. After log-in, a DOS box appears briefly listing the NMS cards and their status. To revise the card configuration, use the AG Configurator utility, as described in Appendix B of the *OnePoint Messenger Installation Guide*.

In addition, if your PBX is a Mitel SX-200 or Mitel SX-2000, the MiTAI software starts. It provides the communication link between the PBX and the Telephony Server.

> **NOTE: SX-2000**—If your Telephony Server has an AFC card, reboot the Telephony Server when you reboot the SX-2000. If your AFC card has the daughterboard upgrade, you do not need to reboot the Telephony Server after an SX-2000 redundancy switchover.

Managing Startup and Shutdown through TSMon

You must use Telephony Server Monitor (TSMon) to start and stop telephony services on the Telephony Server. If you use the NT Service Control Manager or Show N Tel (SNT) for the same purpose, errors will occur.

NOTE: You can use SNT Manager to stop and start an individual Show N Tel line, such as when you are reassigning a telephony application or enabling a newly installed TTS license.

You can have Telephony Server start automatically or in manual startup mode on system bootup. OnePoint Messenger includes an automatic "Watchdog" restart utility (AKA WinFT, from Intrinsyc) to provide fault tolerance. When OnePoint Messenger is first installed, Watchdog is turned off and the system is in manual mode.

Use Telephony Server Monitor (TSMon), as described below, to test startup in manual mode. Then you can change to automatic mode, indicated by the Watchdog yellow dog icon in the Windows NT Taskbar.

NOTE: The WinFT program group contains the Watchdog server, client, and online help. While you can use Watchdog to configure services operation and monitor them, you should not change the configuration. When software needs to be terminated and restarted, use TSMon to shut down services and restart them.

When Telephony Server must be shut down to apply base releases, hot fixes, and service packs, it is necessary to shut down Watchdog

first, so that it does not automatically restart Telephony Server services. Use Telephony Server Monitor (TSMon) to do this and to stop Telephony Server services (this is not a system shutdown.)

To configure Telephony Server to start automatically on reboot:

1   Use TSMon to change the startup mode to automatic (page 173).

2   Remove the NMS Start utility icon from the Startup group, so that the NMS cards do not boot after login.

    a.   In Windows Explorer, navigate this path:
      WinNT\Profiles\All Users\Start Menu\Programs\Startup

    b.   Select **NMS Start**. You can delete the icon or move it, such as to the desktop, for possible occasional use.

3   To set the NMS cards to boot on a system boot, type, on a command line, `agcfg -install`.

Using Telephony Server Monitor (TSMon)

Telephony Server Monitor (TSMon), shown in Figure 5-1, is a Telephony Server utility that provides three main functions. It:

- Displays a task monitor of the state of each Telephony Server task (including services and processes). TSMon provides an interface for you to set the refresh rate (polling interval) of the task monitor. See "Using TSMon to Monitor Operation", on page 170.

- Provides controls for you to stop and start Telephony Server services in a controlled manner, when necessary, such as before and after software servicing, and before running the Configuration Wizard (see "Revising the Telephony Server/Exchange Integration", on page 59 in Chapter 2.) TSMon replaces the Server Control utility used in previous versions of OnePoint Messenger.

- Provides controls for you to set the Telephony Server Monitor startup mode to manual or automatic. Normally, you would set the startup mode to automatic. Situations in which you would use manual startup include immediately after installation, during software service, and in certain troubleshooting cases. See "Controlling Telephony Server Stops and Starts", on page 172 below.

Figure 5-1   Telephony Server Monitor Main Screen
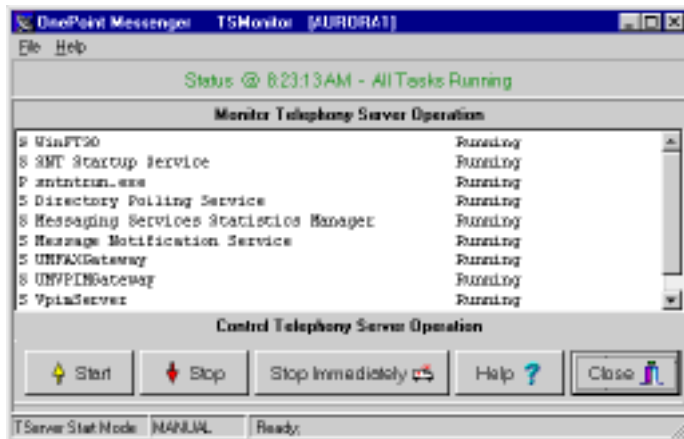
The toolbar buttons are:

- **Start**—[Ctrl+F7] starts all Telephony Server services at once (the same as **Start TServer** in the **File** menu).

- **Stop**—[Ctrl+F8] stops all Telephony Server services after current calls are completed (the same as **Stop TServer** in the **File** menu).

- **Stop Immediately**—[Ctrl+F9] stops all Telephony Server services immediately, abandoning all calls in progress (the same as **Stop TServer Immediately** in the **File** menu).

- **Help**—opens help for TSMon in this comprehensive help system (same as **Help Contents** in the **Help** menu).

- **Close**—quits TSMon (same as **Exit** in the **File** menu). If quitting TSMon in the current state could cause problems, an alert box allows you to cancel the quit.

Figure 5-2 shows the TSMon main screen with the File menu open. All toolbar buttons have equivalent menu choices in the File menu.

The **File** menu choices that do not have toolbar buttons are:

- **Set Monitor Refresh Interval**—[Ctrl+F10] opens a dialog to set the polling interval in minutes and seconds that TSMon uses to request status from Telephony Server tasks

- **Set TServer Start Mode Automatic**—[Ctrl+F11] sets the Telephony Server services startup mode to automatic

- **Set TServer Start Mode Manual**—[Ctrl+F12] sets the Telephony Server services startup mode to manual

Figure 5-2   Telephony Server Monitor Main Screen, File Menu
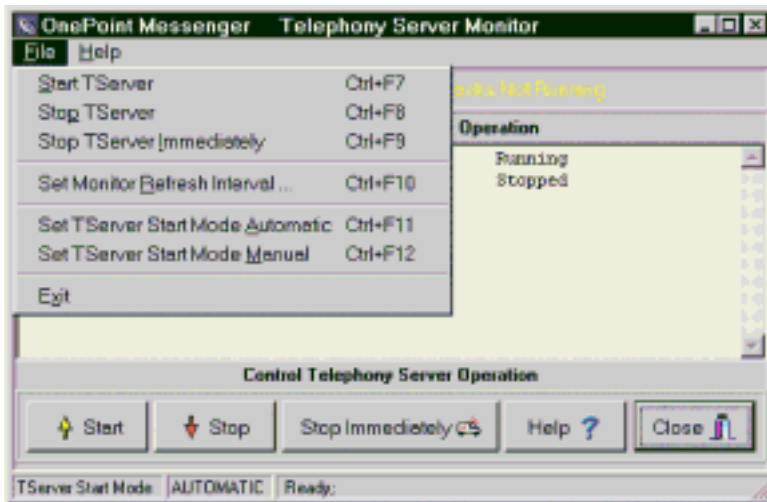
Using TSMon to Monitor Operation

The TSMon main screen contains three visual elements that note the operational status of Telephony Server tasks:

• The Status Summary Panel is the status summary line below the menu bar. It displays the time of the last report and a summary of the operational status. The three possible status summaries are:

  • "Some tasks not running" in yellow

  • "All tasks running" in green

  • "All tasks stopped" in red.

• The TaskMonitor window is below the Status Summary Panel. It contains a list of Telephony Server tasks (services and processes) and their operational statuses. The three most common status indications are stopped, paused, and running. Other status possibilities are:

  • **Continue Pending**—TSMon has issued a continue command in the course of a start or stop process. The task is responding properly by continuing (resuming) execution.

  • **Could Not Open**—TSMon could not open the task to determine its status at the last Monitoring Interval.

  • **Does Not Exist**—An OPM task listed in the TSMon.dat configuration file could not be found.

- **Query Status Failed**—TSMon's attempt to query the status of an OPM service failed at the last Monitoring Interval.

- **Paused**—TSMon issued a pause command in the course of executing a stop. The task responded properly by pausing execution.

- **Pause Pending**—TSMon issued a pause command in the course of executing a stop. The task is responding properly by pausing execution.

- **Start Pending**—TSMon is executing a stop command. The task is responding properly by starting.

- **Stop Pending**—TSMon is executing a stop command. The task is responding properly by stopping.

- The accuracy of the status listing is a function of three conditions:

  - The refresh interval (polling interval)

  - How soon before the next poll that the service changes status

  - How quickly Windows NT makes the status change available to TSMon

  NOTE: You cannot control individual tasks from TSMon, and you cannot select individual tasks in the TaskMonitor to perform any other operation.

- The status bar at the bottom of the TSMon main screen displays the progress of stopping and starting operations invoked through TSMon. There can be inconsistencies between what the status bar displays and the TaskMonitor. The status bar may indicate that TSMon has stopped services, yet individual tasks are listed as running in the TaskMonitor window. This is because of the refresh delay factors.

Polling stops when you quit TSMon, as do any other TSMon operations.

Changing the TaskMonitor Refresh Interval

The initial refresh interval (polling interval) in the TaskMonitor is ten seconds. You can change the refresh interval, which you might do to get a more accurate reading during service. The trade-off is that polling consumes CPU resources that Telephony Server might use for calls.

To change the interval:

Choose **Set Monitor Refresh Interval** from the **File** menu, or press [Ctrl+F10]. A dialog opens, shown in Figure 5-3, in which you can enter the number of minutes and seconds of the interval from 10 seconds to ten minutes, in 10 second increments. That interval will be maintained if you quit and restart TSMon.

Figure 5-3   TaskMonitor Refresh Rate Dialog
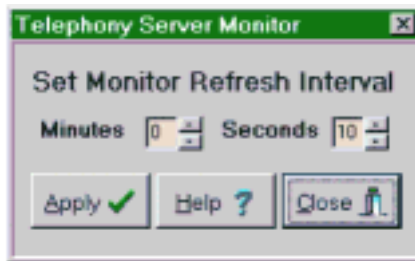
Controlling Telephony Server Stops and Starts

Since, when Telephony Server is installed, services are preset in TSMon to be started manually, when you first open TSMon, the status listing in the TaskMonitor window for each service indicates that it is stopped. That startup is still in manual mode is indicated by the status bar at the bottom of the TSMon main screen. Before switching to automatic startup after installing Telephony Server, you should try starting and stopping services using TSMon while still in manual mode.

To manually start all services:

Click the **Start** button. Alternatively, choose **Start** from the **File** menu (or press [Ctrl+F7]. The status listing for each service will change from Stopped to Started over several minutes. Typically the slowest service to start is sntrun.exe (Show N Tel Runtime). Also, if problems occur in service startup, it is also most likely that the sntrun.exe will be the problem.

Natural MicroSystems (NMS) software starts when the Telephony Server boots, as does MiTAI if you are using a Mitel PBX. The other Telephony Server services must wait until the NMS and MiTAI software is running. So, if you open TSMon as soon as the Telephony Server boots, then quickly click Start, there will be an additional delay until the NMS and MiTAI software is up.

The full time period between Telephony Server boot and full service start can be as long as ten minutes. If services are not listed as started after ten minutes, it is time to either stop services and reboot, or perform diagnostic tests. For details on validation and diagnostic tests, see Chapters 6 (see page 183) and 7 (see page 191).

To stop services:

Click either the **Stop** or **Stop Immediately** buttons. They each have equivalent commands in the File menu, and accelerator keys (Ctrl+F8 and Ctrl+F9, respectively). The difference between the commands is that **Stop** waits until current calls are completed, while **Stop Immediately** abandons calls in progress.

Cancelling the Current Start or Stop Operation

Generally, once you have invoked a start or stop command, you should let that process complete before reversing it. Always remember that the cancellation of a command in progress may leave the Telephony Server in an inconsistent state (not all tasks running). Be prepared to take appropriate action after the cancellation of a running command.

If you encounter such delays in the process that you decide that it is not progressing cleanly, you can stop the operation of the command if you click the **Close** button to quit TSMon. If you quit TSMon during a stop or start operation, a warning message notes that you are interrupting the operation of the current **Stop**, **Stop Immediately**, or **Start** command. If you dismiss the warning and quit TSMon, services remain in the stopped or started state that they have attained during the operation of the command.

To switch to automatic start mode after you have successfully tested manual operation:

Choose **Set TServer Start Mode Automatic** from the **File** menu (or press [Ctrl+F12].

Auxiliary Logs

You can use various logs to monitor system status. If Telephony Server Monitor does not appear to be starting services gracefully, these logs can give you more insight into what the problem might be. Agerror.log and ag.rpt monitor the status of Natural MicroSystems cards. Mitaisrv.log, loader.log, and afcserv.log monitor Mitel software and card status, respectively. Mvip.log monitors the status of the

MVIP connection. You can add logs to the desktop for quick access. Remember that you must continually open and close them to see updates.

For Mitel PBX integrations, the typical implementation is to add loader.log and mitaisrv.log to the desktop. Monitor loader.log to assure that MiTAI starts. Then check mitaisrv.log to monitor the status of MiTAI. For details on MiTAI, see Chapter 4 in either of the Mitel PBX integration guides.

Typically, administrators add a Ag.rpt icon to the desktop for quick access to check the boot status of the NMS cards, but it is also a convenient way to note the configuration.

Performing Remote Management

To manage the Telephony Server from another computer, install Symantec's **pcAnywhere**™ on that computer and on the Telephony Server. pcAnywhere is bundled with the TS800 turnkey system. You can use pcAnywhere via LAN or modem to remotely control all applications on the Telephony Server. Providing modem access to pcAnywhere has the additional benefit of enabling offsite technical support to help you solve Telephony Server problems.

You can administer Exchange Administrator from another computer that has network access to the Exchange Server if you install Exchange Administrator on that computer and log on to that computer with sufficient permissions (see "Setting Up Remote Exchange Administration", on page 58 in Chapter 2.) So, you can manage Exchange from the Telephony Server, which can be especially useful during Telephony Server setup.

Monitoring Port Activity in Show N Tel Manager

The Operate and Monitor window of Show N Tel Manager is shown in Figure 5-4. The window provides a port-level view of telephony application activity, listing call duration and hook state.

To run Operate and Monitor in Show N Tel Manager:

1   **Start Show N Tel Manager**: Click the Windows **Start** button, then choose **Programs**, **Show N Tel Setup**, and **Show N Tel Manager**.

2   Click the **Operate and Monitor Show N Tel** button or choose **Operate and Monitor Show N Tel** from the **Tools** menu.

NOTE: You can stop and restart individual lines from Operate and Monitor for purposes of testing and license refreshing, but do not click the Start and Stop buttons to start and stop the whole Show N Tel system or to change line assignments. Use TSMon (see page 166) instead so all Telephony Server services will stop gracefully.

Figure 5-4   Show N Tel, Operate and Monitor Window
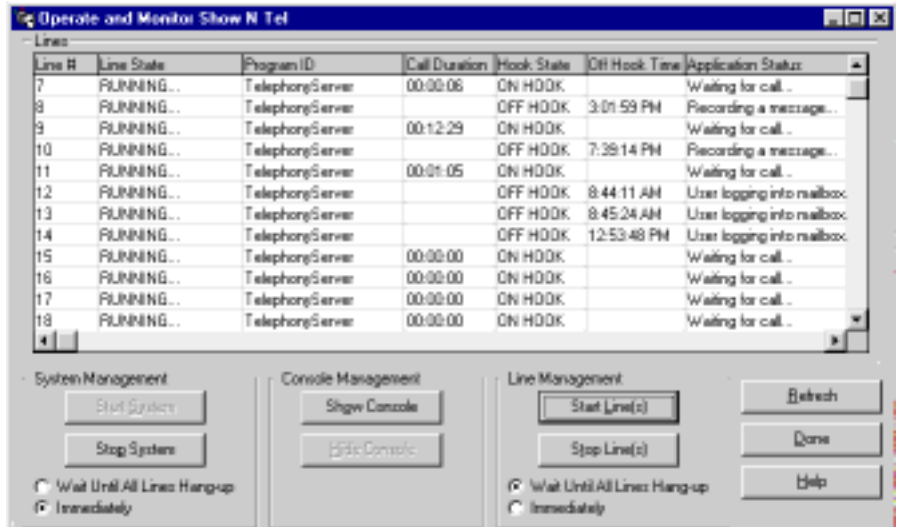
NOTE: For details on using Show N Tel Manager to manage line (port) assignments, see Chapter 4 in the *OnePoint Messenger Installation Guide*. For more on Show N Tel, see Appendix G here (page 329), and the *Show N Tel System Administrator Guide* and *Getting Started with Show N Tel*, both included on the OnePoint Messenger Installation CD-ROM as sntmgrguide.pdf and sntgetstart.pdf, respectively.

Diagnostics

The OnePoint Messenger diagnostics subsystem consists of validation tools, discussed in detail in Chapter 6 (page 183), and tracing tools, discussed in Chapter 7 (page 191).

System Validation Tools

System validation is the task of verifying that components are working properly. Performed routinely, system validation provides the first step in problem diagnostics.

A familiar example of a system validation tool is the ping utility provided with TCP/IP implementations by Microsoft Windows. It validates that the pinged computer is available on the network.

Several OnePoint Messenger utilities provide system validation functions that verify that various components of both OnePoint Messenger and Windows NT are available and functioning properly:

- **TSMon**: In addition to providing control over Telephony Server services, **Telephony Server Monitor** (see "Using Telephony Server Monitor (TSMon)", on page 168 above) also provides an overview of component status.

- **Version Reader**: Version Reader is a handy OnePoint Messenger utility on the Telephony Server that displays program version information. The client installation program also copies it to the OnePoint Messenger directory on the client.

- **cvNotify**: cvNotify is a OnePoint Messenger utility that you can use to test the Message Waiting indicator (MWI) and pager notification functions of Notification Server.

- **SNT Operate and Monitor**: Operate and Monitor, described above, is a real time monitor not only of port activity but also of the status of the connection to the Exchange Server as Telephony Server services boot.

For details on using the validation utilities, see Chapter 6 (page 183).

Problem Determination and Reporting Tools

When OnePoint Messenger gives an outright error or exhibits what appears to be degraded performance, using the validation tools is one way to verify that a problem is limited to a particular subsystem. In addition to the tools provided, you can exercise the system in ways that will verify your educated guess as to the degraded subsystem. For example, Outlook is installed on the Telephony Server in order to provide a transparent conduit for certain messages. You can use Outlook to test the ability of Telephony Server to create, send, and access e-mail messages.

> **CAUTION!** Do not install the OnePoint Messenger Outlook client on the Telephony Server. Doing so will stop telephony services.

Using the validation tools in conjunction with exercising the system and/or with diagnostic tools is also useful. Your first line of defense in diagnostics is comprised of error logs and the utilities that regulate the kinds of messages sent to them, which are discussed next.

Windows NT Event Log and Viewer

All OnePoint Messenger subsystems write messages to the NT Event Log. Each subsystem assigns Sources, Categories, unique numeric codes, and severity levels to events, from trace and other informational events through security events to failure error messages. The NT Event Viewer, provided with Windows NT, allows filtering of the log based on parameters that you set to isolate events of particular types. For example, you can filter messages by component, by message code, and by severity. For an introduction to the use of Event Viewer and a list of messages sent to the Event Log by OnePoint Messenger subsystems, see Appendix C on page 243 of this guide.

OnePoint Messenger Trace Manager

Using the OnePoint Messenger Trace Manager, you can control the amount and type of operational tracing of each OnePoint Messenger subsystem, in order to provide detailed data for problem analysis. You can set up system event tracing by subsystem and severity level. For details on using Trace Manager, see Chapter 7 (page 191).

SNT Trace

SNT Trace controls Show N Tel Server trace levels (trace disabled, trace particular lines, or trace all lines). You can create a real-time log of Telephony Server call-processing by port. This can be useful for understanding why a TUI sequence is misbehaving. The "trace" file is stored in real time in the SNT directory. You can tell Show N Tel Server whether to log to the screen, disk file, or both. You can also use SNT Trace to clear the log. See Chapter 7 (page 191). For more on Show N Tel, see Appendix G (page 329).

Show N Tel Error Log

The Show N Tel error log provides a subset of errors on the Telephony Server, focusing on the processing of applications built within Show N Tel. The error information is generally too oriented to program debugging to use on an administrative level, other than to note that errors are occurring at that level in the system. The most appropriate use of the log is during board installation and initial startup. The Show N Tel online help contains brief explanations of the errors.

To view the error log:

1   Open Show N Tel Manager: click the Windows **Start** button, then choose **Programs**, **Show N Tel**, and **Show N Tel Manager**.

2   Click the **Dynamite** button in the Show N Tel Manager toolbar.

One general type of error that will appear in the Show N Tel error log that is recognizable and usable at the administrative level occurs most often during installation. If there are problems with peripheral configurations, such as memory conflicts, the error log contains references to "hardware". Such errors can also occur during operation, such as if the link to the PBX goes down. Such errors can also be more specific to a particular card, referencing "bfax" (Brooktrout fax), "ag..." (NMS), or "MiTAI" (Mitel). For details on configuring peripherals, see Appendix B in the *OnePoint Messenger Installation Guide* and the vendors' manuals that accompany the peripherals.

Hardware Diagnostics

Utilities and documentation provided by supporting fax and line card hardware manufacturers have been provided in the OnePoint Messenger program folder. These utilities and documents will help you configure and diagnose problems with the supporting hardware. For details on peripherals, see Appendix B in the *OnePoint Messenger Installation Guide*. As mentioned above, the Show N Tel error log is particularly useful in assessing incorrect board configuration.

System Maintenance

System maintenance involves platform hardware maintenance, software and data backups and restoration, and software upgrades. This section provides an overview of maintenance software components supplied with OnePoint Messenger and by other vendors.

NT Platform Maintenance

OnePoint Messenger software does not include maintenance support for the third-party components of the unified messaging system, including Microsoft Windows, Exchange, or Outlook. However, the maintenance issued by Microsoft for these critical components must be taken into account to protect the reliability and availability of OnePoint Messenger. Mitel will monitor Microsoft maintenance announcements, maintenance releases, and other relevant information and attempt to keep you informed of notices of all important mainte-

nance information through documentation updates. See Appendix B, "Technical Resources", on page 235 for details.

Replacing the Telephony Server

In addition to providing reliable service by maintaining your Telephony Server, there are other ways to provide various levels of Telephony Server availability, discussed in more detail in Chapter 5 of the *OnePoint Messenger Installation Guide*:

- Maintain two interlinked messaging systems, including two PBXs, two Telephony Servers, and two Exchange Servers. OnePoint Messenger does not support more than one Telephony Server on one PBX.

- Clone the Telephony Server, so that you can quickly replace the current Telephony Server with an exact copy, if necessary.

- Prepare a computer to be the Telephony Server, but do not install OnePoint Messenger until the original Telephony Server dies. Then, get a free replacement license to use on the new Telephony Server.

- Keep critical spare parts on hand, such as the hard disk, power supply, and backup OnePoint Messenger license diskette.

Any solution that includes creating two Telephony Servers requires the purchase of two OnePoint Messenger licenses. For quickest recovery, the licenses should be for identical features.

OnePoint Messenger Software Maintenance

OnePoint Messenger software improvements will be provided in three forms — hot fixes, service packs, and version upgrades ("base releases"). Software maintenance will be delivered via appropriate means, including CD-ROM, floppy disk, or electronic delivery. See "Upgrading and Repairing OnePoint Messenger", on page 217 in Chapter 9 in this guide for details. Chapter 9 discusses various kinds of upgrades and backup and restore options and introduces you to the System Service Tool and License Install utilities. See Chapter 5 in the *OnePoint Messenger Installation Guide* for maintenance/upgrade procedures and detailed discussions of the System Service Tool, License Install, and Web Licensing utilities.

To perform software maintenance, you should also be familiar with Telephony Server Monitor (TSMon) and Version Reader, discussed earlier in this chapter.

System Utilities

OnePoint Messenger does not provide a backup utility, but Windows NT Backup is a backup utility that is bundled with Windows NT and works well for our purposes. It is located in the Administrative Tools folder in the Programs group. Windows NT Backup provides both backup and restore facilities. Backups can be scheduled and run remotely on any server.

If you prefer, you can use another backup product. OnePoint Messenger was developed in an environment that used Seagate's Backup Exec *TM*, which worked flawlessly.

Another backup strategy suggested by Microsoft for Microsoft Exchange is to build redundancy into the configuration. Exchange provides scheduled replication, so this type of backup requires no user intervention and provides some fault tolerance. For details, see "Managing OnePoint Messenger Backups", on page 225 in Chapter 9.

Problem Recovery

Three utilities help you with problem recovery:

- Watchdog
- System Service Tool
- System Alert Report

Watchdog: As mentioned above, the Intrinsyc Watchdog service guarantees that the necessary system software components are always running. If a needed software component fails, Watchdog restarts that component and logs its failure. Control Watchdog through TSMon.

System Service Tool: In addition to providing an interface for the application of hot fixes and service packs, System Service Tool lets you remove an applied service. If, for example, you suspect that a recent application of a hot fix has caused another problem, you can use SST to quickly remove the hot fix from the system, then test the system without the hot fix. If you decide that the hot fix is not the cause of the problem, you can quickly reapply it. See "Removing a Hot Fix or Service Pack" in Chapter 5 of the *OnePoint Messenger Installation Guide*.

System Alert Report: This report issues an alert when the Telephony Server is near capacity, so that you can take remedial measures. It starts automatically with Telephony Server and runs transparently with a set of default performance thresholds, which you can change

using NT Performance Monitor. See "Using the System Alert Report", on page 203 in Chapter 8 in this guide for details.

Performance and Capacity Planning

In order to guarantee the reliability and availability of any system, it is necessary to provide the means to determine the levels of both system performance and system capacity under operational conditions. The RAS Performance and Capacity Planning subsystem is intended to provide the customer with the tools to enable proactive decision making regarding system performance and capacity issues.

OnePoint Messenger Statistics Reports

OnePoint Messenger includes two new statistical counters, Port Statistics and Message Statistics. These counters are used by its System Alert Report and Statistics Reporting Program, and by Windows NT Performance Monitor to generate data about the performance of Telephony Server. For details, see "Performance Monitoring Overview", on page 201 in Chapter 8.

Call Statistics

Show N Tel Manager provides an interface for configuring the gathering of statistics about average call length and similar statistics. See Chapter 2 of the *Show N Tel Manager User's Guide,* in PDF format, on the OnePoint Messenger CD-ROM. Note, however, that the PowerBlock functionality that is described is not enabled.

RAS Operational Characteristics

The OnePoint Messenger configuration includes starting the NT Performance Monitor automatically at system initialization, using the default System Alert Report monitoring profile, as described above and in "Using the System Alert Report", on page 203 in Chapter 8 of this guide.

Hardware and Software Requirements

OnePoint Messenger components have no special hardware or software requirements beyond those required by Telephony Server. These are discussed in Chapter 2 and Appendix A of the *OnePoint Messenger Installation Guide*.

System Resource Usage

RAS components should use less than 10% of CPU cycles with both tracing and Performance Monitor active. The disk space usage goal for RAS components is to consume less than 20 MB in total. This does not count the various log files, whose size may vary depending on customer configuration.

Connectivity

In general, the RAS tools use standard Windows NT graphical interfaces. All of the RAS tools can be accessed from:

- The OnePoint Messenger desktop icon group

- The OnePoint Messenger program group in the Windows Start menu on the Telephony Server

- The Unified Messaging Snap-in Utilities node in Microsoft Management Console on the Telephony Server

A remote control program such as pcAnywhere (included with OnePoint Messenger) can provide remote access to those tools. OnePoint Messenger customers who want to provide remote access to their systems by OnePoint Messenger Technical Support will be required to install pcAnywhere32, version 8.0 or greater.

The RAS subsystem is designed to be run on Telephony Server processes. Some exceptions, primarily Statistics Reporting Program, can access other systems.

Configuration

All OnePoint Messenger RAS components support configuration in the sense that you can configure reports and output formats.

- Statistics Reporting Program supports the design of new kinds of reports.

- System Service Tool and TSMon allow view-option configuration on a per-user basis, such as window-sizing persistence—when you size a window, then close and reopen the program—the window size and location reappears as when closed.

6. System Validation

This chapter discusses system validation, including using NT utilities, Telephony Server Monitor, Version Reader, and cvNotify. It contains the following sections::

Validation Overview

System validation is the process of verifying that hardware and software components have been correctly installed and configured, and that they can communicate with each other. Validation consists of inspecting hardware and software, and testing connectivity and processes. Generally, and in the case with OnePoint Messenger, validation starts at installation and continues at specific times throughout the lifecycle of the product.

With OnePoint Messenger, much validation can occur simply as a by-product of doing other tasks, especially by being observant while waiting for software to load. Most validation tasks are not absolutely necessary, but they provide data that can be used when necessary to simplify diagnostics.

The basic validation task, which is in that category of being useful but not absolutely necessary is to make a visual inspection of hardware and connections if equipment has been moved—between network plugs and wires, between plugs and sockets, etc. This task is like the advice to walk around your car checking for flat tires, errant babies, etc. It rarely pays off, but it only takes a moment and pay off big. If a lot of equipment movement was involved, you should open the case

to check that line cards are seated tightly and that screws securing card brackets have not come loose or fallen out. If you are starting the system for the first time after installing, leave the case off until you know all systems are working well. If they are not, you have quick access to the line cards to check and change physical settings.

Software Validation

OnePoint Messenger software validation begins during program installation. The OnePoint Messenger license diskette contains information about the feature resources that you have purchased. When you run the Installation Program, you copy the license files to the Telephony Server. After you reboot, you can run the License Install program to compare the feature resource availability that it reports with what feature resources you expect. Knowing what limitations might exist in the resources can help you more quickly correct performance problems. You can run License Install at any time.

After installation is complete, software validation starts with a quick overview of program folders using the Windows Start menu and desktop icons and folders. A more thorough review of the directory structure can be made using Windows Explorer. The OnePoint Messenger Installation Program creates several directory structures off the C:\\ root directory, including directories for Show N Tel, NMS, Vintra, and WinFT, in addition to the core directory for OnePoint Messenger, shown in Figure 6-1.

Before and while starting programs, check the Windows NT Event Viewer for warnings. All OnePoint Messenger applications send informational event messages, error messages, and trace messages to the Event Log. Also check the Show N Tel Error Log (click the dynamite icon in SNT Manager.)

Appendix F (see "Validating the TUI Configuration" on page 312) provides a number of test cases that you can perform to validate that the telephone interface parameters you set are operational. The tests include calling individual extensions to leave messages with various kinds of attachments, calling the Message Center to access and send messages, calling the Automated Attendant, etc. The validation process also includes inspecting settings in Microsoft Management Console. Appendix F also contains diagnostic suggestions for further investigation.

Figure 6-1   OnePoint Messenger Directory

Validating Network Connectivity

Network connectivity is essential for OnePoint Messenger to function. Since network integrity depends on elements that can fail after you install OnePoint Messenger, validating network connectivity only at installation is not sufficient; it is a continual process.

Fortunately, OnePoint Messenger processes indicate fairly clearly, in the course of their operation, when the network is unavailable. At installation, you run the **Configuration Wizard** (see page 59). If it is not able to write to the designated primary Exchange Server, it issues an alert. You also run the Configuration Wizard at other times, such as to designate a new primary Exchange Server.

When you edit a user profile on the Exchange Server, the **Unified Messaging tab** indicates the name of the Telephony Server. If that Telephony Server is off-line, the tab cannot be edited.

Validating the connection between the PBX and the Telephony Server depends on the kind of PBX integration you have. The Mitel SX-2000 and SX-200 PBXs use MiTAI (Mitel Telephony Application Interface) software on the Telephony Server to maintain the communication link. MiTAI boots when the Telephony Server boots. You can use the **MiTAI Settings** dialog to monitor that bootup process, validating the PBX link. MiTAIx is another program that validates Mitel PBX connectivity. The use of both of those programs in the SX-200 and SX-2000 integration guides.

When Telephony Server services start, you can follow the establishing of inter-process communication with the Exchange Server by viewing the **Operate and Monitor** window of Show N Tel Manager. Each port assigned the Telephony Server application displays it readiness status in this sequence:

1   Initializing

2   Waiting for Post Office

3   Post Office is Up

4   Initializing Fax

5   Waiting for Call

If the Exchange Server is off-line, the status will not change from "Waiting for Post Office". For details on using Operate and Monitor, see "Monitoring Port Activity in Show N Tel Manager" on page 174.

In addition to using the built-in validation capabilities of OnePoint Messenger, it can be helpful to do simple network validation on the Telephony Server in Windows Explorer. See if the Network Neighborhood is visible, especially the primary Exchange Server. If the network neighborhood is not visible, check physical connections, then use the ping utility provided by Windows to test connectivity to the Exchange Server. The ping utility validates that a specified computer can be reached, and it provides statistics on the timing of the round trip message. This kind of data is useful as the first step in problem diagnostics.

Telephony Server Monitor

OnePoint Messenger provides several tools on the Telephony Server that support system validation. One tool is Telephony Server Monitor (TSMon), which is detailed in "Using Telephony Server Monitor (TSMon)" on page 168 in Chapter 5. The main TSMon window shows the status of all Telephony Server services. The OnePoint Messenger Installation Program sets all Telephony Server services to start in manual mode, so, when you first start TSMon, its main window should show that all services are stopped. After you manually start services, or after you change the start mode to automatic and reboot the Telephony Server, the TSMon main window should show all services running unless you use TSMon to stop them.

Using Version Reader for System Validation

Version Reader is a handy OnePoint Messenger utility on the Telephony Server that displays program version information. The client installation program also copies it to the OnePoint Messenger directory on client PCs. You can point Version Reader at any directory (not just OnePoint Messenger directories), to have it list the version information entered in the registry for the programs stored in that directory. This is useful in system validation by telling you not only that software has been installed in the correct directories, but also that the registry has been updated.

When you request advice from offsite technical support, being able to tell them what versions you have of each OnePoint Messenger component will help them to isolate possible issues of concern.

In Figure 6-2 below, Version Reader is displaying the version information for each of the programs that are stored in the directory listed in the "Directory to search" box—in this case, the \OnePoint Messen-

ger\bin directory. This directory contains most of the OnePoint Messenger programs running on the Telephony Server.

Figure 6-2   Version Reader

Using cvNotify to Test MWI and Notification Server

cvNotify is a OnePoint Messenger utility that you can use to test the Message Waiting indicator (MWI) and pager notification functions of Notification Server.

The Message Waiting Indicator on a OnePoint Messenger user's telephone is activated when a unified message is delivered to the user's mailbox and the Enable Message Waiting Light option is selected in the user's Exchange profile. Similarly, a pager notification alerts users with pagers of new unified messages. A unified message is one that arrives from a telephone or one that is created in Outlook using a OnePoint Messenger unified message form. The form does not need to be used to record a voice message; it can be used simply to create a text message.

For details on activating the Message Waiting option and choosing among pager notification options for a user, see "Managing OnePoint Messenger Users" on page 63 in Chapter 2 of this guide.

For more information on cvNotify, see Chapter 4 of the *OnePoint Messenger Installation Guide*.

To run cvNotify:

Browse in Windows Explorer to the \bin subdirectory within the OnePoint Messenger directory, then double-click cvNotifyTest.exe. The main screen appears, as shown in Figure 6-3.

The cvNotify application has two tabs—**MWI** and **Paging**.

To test the functioning of Notification Server and the Message Waiting Indicator (MWI) for a particular user's telephone:

1   Click the **MWI** tab.

2   Click the down arrow by **User Data**, then select the name of the user.

3   Select **On** in the **MWI Type** radio button group.

4   Click **Go**. The test runs and "OK" should appear in the **Status History** field of the **Transaction History** window.

Figure 6-3   cvNotify Main Screen, MWI Tab
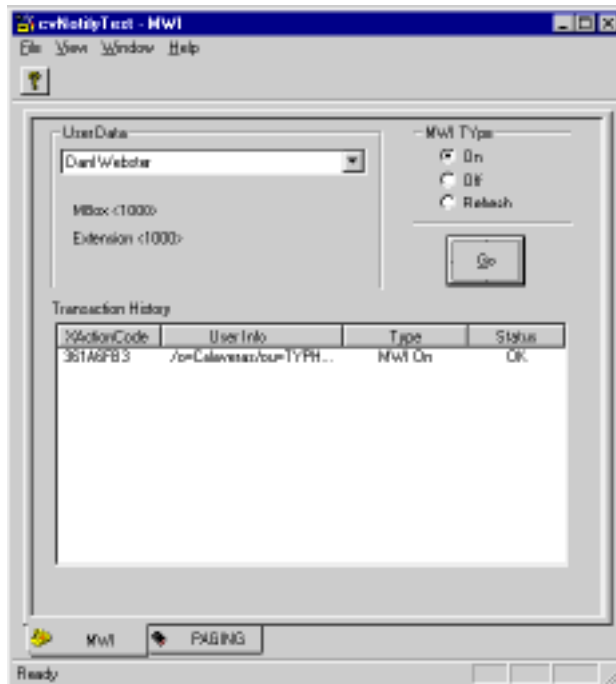
Figure 6-4   cvNotify Main Screen, Paging Tab
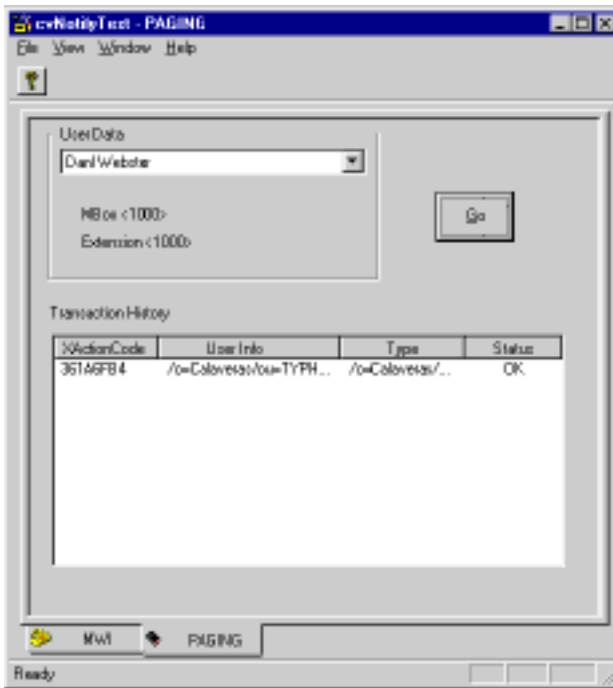
To test the functioning of Paging for a particular user:

1   Click the **Paging** tab of cvNotify.

2   Click the down arrow by **User Data**, then select the name of the user.

3   Click **Go**.

4   The test runs and "OK" should appear in the **Status History** field of the **Transaction History** window.

7. Using Trace Facilities

This chapter tells you how to use OnePoint Messenger Trace Manager and SNT Trace Manager to monitor Telephony Server operation for problem determination and resolution. It contains the following sections: :

Section	Page
Problem Resolution Overview	**191**
OnePoint Messenger Trace Manager Overview	**192**
Using OnePoint Messenger Trace Manager	**195**
SNT Trace Manager	**197**

NOTE: OnePoint Messenger 2.0 has added new Sources to the OnePoint Messenger Trace Manager, so, for example, you can use the NT Event Log to monitor SMDI packets.

Problem Resolution Overview

When the OnePoint Messenger system's behavior is not as expected, you have several options to discover what is causing the unexpected behavior. Chapter 5 introduces you to a general strategy for problem determination and resolution. Chapter 6 describes system validation, which should be your routine first step in system startup, to establish a baseline for problem determination. If no problems are apparent before starting services, it is easier to diagnose problems once they appear in operation.

The first step in problem diagnosis is to inspect the the SNT Error Log and the Windows NT Event Viewer. For details on using the NT Event Viewer, see Appendix C (see page 243.) Show N Tel and the line cards send error messages to the SNT Error Log, and all other OnePoint Messenger applications send errors and informational events data to the NT Event Log. The description of the errors in the logs can help you and technical support personnel decide what type of

event tracing is most appropriate. OnePoint Messenger trace messages also are sent to the NT Event Log.

Two types of event tracing, managed by two OnePoint Messenger applications, are useful for detecting application irregularities:

- OnePoint Messenger Trace Manager, discussed next, provides you the ability to set the levels and types of application event trace data sent to the NT Event Log.

- SNT Trace Manager manages Show N Tel Server, which creates a log useful for evaluating call performance degradation. See the section "SNT Trace Manager" on page 197.

OnePoint Messenger Trace Manager Overview

To help OnePoint Messenger Customer Support identify the cause of unexpected behaviors, you can use OnePoint Messenger Trace Manager to control the level of tracing of OnePoint Messenger processes. You can specify what process to trace and at what level of detail. Trace messages are sent to the Windows NT Event Log. The trace messages are generally fairly obscure, usually intended by the programmers for their own use, so reproducing them here would not be appropriate, but you should understand how to set tracing in Trace Manager, so that you can capture and send to Customer Support the appropriate set of NT Event Log messages.

The meanings of "Source" and "Category" in Trace Manager duplicate those of "Source" and "Category" that appear in the NT Event Viewer. The names that appear in the "Source" and "Category"columns in Trace Manager are those that you see in the NT Event Viewer. This means that you can set NT Event Viewer filters to focus on particular Trace Manager Sources and Categories. For details on using the Event Viewer with OnePoint Messenger event messages, see "Using the NT Event Viewer" on page 243 in Appendix C.

Figure 7-1 contains descriptions of the various Sources and Categories defined for OnePoint Messenger process tracing. The Categories that are available to you depend on your configuration. For example, a Mitel PBX integration does not use Datalink objects, so the Datalink-related Categories of the PBX Source would not appear in Trace Manager. Also, Sources and Categories do not appear in the Trace Manager until their associated processes are registered. Some processes are not registered until they are used.

Table 7-1 Process Categories Available to Trace Manager

Source	Category	The Active Process
Admin/Cfg	Group Config	Traces the operation of CfgGroupObjectsU.Dll, which uses the settings of the Group Configuration node of the UM Snap-in; Event ID range is 27000-27200
Admin/Cfg	System Config	Traces the operation of CfgSystemObjectsU.Dll, which uses the settings of the snap-in System Configuration node
Admin/Cfg	Tserver Config	As above for the "TServer One" node settings
Advise/Sink	Notification	Conga SNT Client, providing Message Waiting notifications
CallMe-MeetMe	Dispatch Client	cvDispatchClient; Event ID range from 25000
CallMe-MeetMe	Dispatch Server	cvDispatchSvr; Event ID range from 23500
Directory	Dir. Cache	Directory
Directory	Dir. Server	Subscriber information update management between Exchange and Telephony Server—adds, deletes, changes
Directory	Synchronization	Polling—Maintains synchronization between Exchange and Tel. Server
FAX Gateway	General	General operation of the Fax Gateway
FAX Gateway	Incoming Message	Operation of the Fax Gateway while receiving message
FAX Gateway	Outgoing Message	Operation of the Fax Gateway while sending message
GMD Object	GMD	GMD = Guaranteed Message Delivery; the message cache on TServer when Exchange is down
Message Queue Object	Message Queue	
MWI	Notification	Message waiting notification
Notify Queues	MWI QMon	Traces the operation of cvCongaServer, used for MWI
Notify Queues	MWI Queue	
Notify Queues	Paging QMon	
Notify Queues	Paging Queue	
Notify Queues	Queue Server	
PBX	Data Port	The PBX Source only appears for SMDI integrations and provides tracing on the SMDI data transmission from the PBX
PBX	Datalink Engine	
PBX	Datalink Svr	
PBX	Inband	
PBX	Parser	
Post Office	Mailbox	Errors only; no tracing currently available
Post Office	Msg Object	
Post Office	PO Client	Subscriber login from a telephone; accessing and leaving messages
Post Office	PO Monitor	Activity of PO Monitor as subscribers log in from a telephone; accessing and leaving messages
Post Office	Post Office	

Table 7-1 Process Categories Available to Trace Manager

Source	Category	The Active Process
SNT Cfg	Auto Attdt	The Categories with Source = SNT Cfg have somewhat cryptic names, but they can be understood basically as abbreviations of the names of the pages that appear in the Unified Messaging Snap-in to MMC. The trace messages for a particular category are driven by TUI activities that utilize the corresponding snap-in page settings. The NT Event Log ID range is 27700 to 27800
SNT Cfg	Bus. Hrs.	
SNT Cfg	COS	
SNT Cfg	Dial Plan	
SNT Cfg	DialByName	
SNT Cfg	FaxCoverPage	
SNT Cfg	FaxDlvy	
SNT Cfg	FaxDoc	
SNT Cfg	FaxOnDemand	
SNT Cfg	GroupInfo	
SNT Cfg	LinecardInfo	
SNT Cfg	MB Defaults	
SNT Cfg	Messaging	
SNT Cfg	Pgr Settings	
SNT Cfg	PostOffice	
SNT Cfg	Prompts	
SNT Cfg	SDRTable	
SNT Cfg	Security	
SNT Cfg	SystemInfo	
SNT Cfg	SystemLimits	
SNT Cfg	TServerInfo	
System Monitor	System Admin.	start up and shut-down util
System Serv.	Exchange Ext.	Calls accessing user properties from Exchange
System Serv.	Greetings	Calls launching user greetings
System Serv.	Exchange Store	cvCommon; Event ID range from 7100
System Serv.	Registry	cvCommon; Event ID range from 3000
System Serv.	Service	Traces activity of cvService as it manages services, such as Message Notification Service, Directory Polling, and Service Query Manager (Event ID 5400+)
TUI	SNT	
TUI	Text to Speech	
VPIM Server	Incoming MIME	Translation of incoming SMTP format to internal format
VPIM Server	Outgoing MIME	Translation of internal format to SMTP format
VPIM Gateway	General	General operation of the Fax Gateway
VPIM Gateway	Incoming Message	Operation of the VPIM Gateway while receiving message
VPIM Gateway	Outgoing Message	Operation of the VPIM Gateway while sending message

Using OnePoint Messenger Trace Manager

To start OnePoint Messenger Trace Manager, double-click its icon in the OnePoint Messenger folder on the desktop. Alternatively, start Trace Manager from the **Utilities** node of **TS Admin**, or click the Windows **Start** button, then choose **Programs**, then **OnePoint Messenger**, then **Trace Manager**.

Figure 7-1 shows the Trace Manager dialog. The view in the left **Source** pane contains a simple two-level tree. The Telephony Server computer name is at the root of the tree view ("Aurora1" in this example). Under it is a list of OnePoint Messenger subsystem Sources on the Telephony Server.

The **Categories** pane on the right lists processes of the selected subsystem. For example, Figure 7-1 shows SNT Cfg selected in the Source pane, so its Categories appear on the right. The Trace Level has been set to **Off** for all of them. If tracing were on for any of the Categories, the same Source and Category names would be reflected in the NT Event Viewer, shown in Figure 7-2. OnePoint Messenger trace messages are signalled by a leading asterisk in the Category field, while OnePoint Messenger error messages do not display an asterisk.

Figure 7-1   OnePoint Messenger Trace Manager Dialog
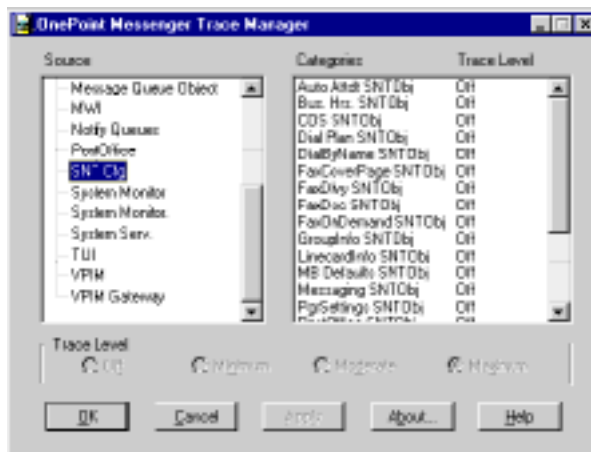
To operate Trace Manager:

1   Select a subsystem in the **Categories** pane to show its traceable elements in the right **Source** pane.

2   Select a subsystem source in the **Source** pane.

3 Select a **Trace Level** radio button (**Off**, **Minimum**, **Moderate**, or **Maximum**) for each source in the category to be traced.

4 Click **Apply** to save changes (or **OK**, **Cancel**, or **Help**) and keep Trace Manager open.

or

Click **OK** to apply changes and quit the program. Tracing continues when you quit Trace Manager until you restart Trace Manager and deselect tracing in traced sources.

or

Click **Cancel** to quit the program without saving changes.

5 Open and observe the Windows NT Event Viewer application log to see trace messages from OnePoint Messenger subsystems. OnePoint Messenger notes trace messages with an asterisk in the Event Log **Category** column, such as "*Post Office"

Figure 7-2   Event Viewer Application Log.

What appears in the Windows NT Event Viewer depends on what each OnePoint Messenger subsystem sends to the Event Viewer at each trace level. Generally, of course, the number of events sent to the Event Log increases for each traced subsystem from Minimum through Moderate up to Maximum. Also, generally, what is being traced is the starting and exiting of individual functions within the program. Without intimate knowledge of how a program works, you will probably not learn much from the Moderate and Maximum trace settings, other than to note when an error is recorded. These messages will, however, enable the OnePoint Messenger product support team to solve the problem more quickly.

NOTE: What you see in the Event Detail window for an event depends in part on how you access the window. If you save the Event Log to another computer as anything other than an ".evt" file, it makes the details unavailable. Even as an .evt file, if the other computer does not have the Telephony Server DLLs, the full details of some Telephony Server DLL events will not be able to be displayed.

SNT Trace Manager

SNT Trace Manager is a OnePoint Messenger utility that enables you to set the tracing levels and output destination of trace messages created in Show N Tel Server, which is a Show N Tel application that traces call processing on individual ports. The SNT Trace dialog is shown in Figure 7-3.

Figure 7-3   SNT Trace Manager Setup Dialog
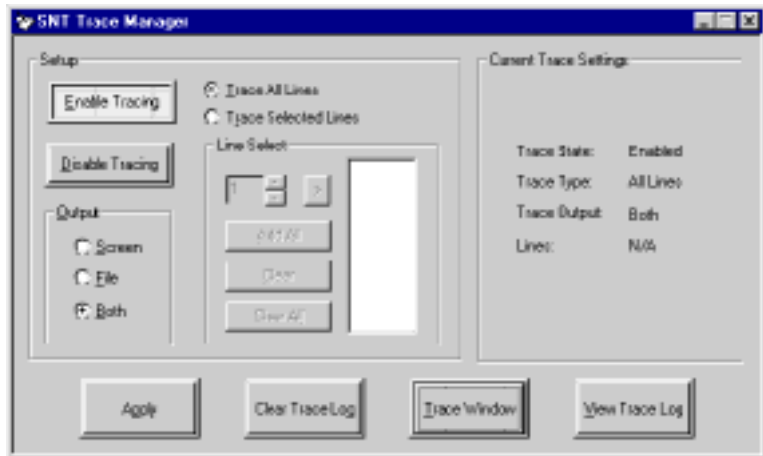
To set up Show N Tel Server tracing using SNT Trace Manager:

1   Start SNT Trace Manager in the OnePoint Messenger desktop program group.

2   If you want to clear the file before beginning another trace, you have two options:

  •   Click **Clear Trace Log**.

  or

  •   Rename "trace" so that you can save the existing trace output for future reference as a separate entity from the trace output you generate with the new settings.

3   Click **Enable Tracing** to enable tracing by Show N Tel Server.

4   Select the lines to trace. These are the lines to which you assigned applications in Show N Tel Manager. If you have not assigned applications, the trace output will be empty.

- If you want to trace all or nearly all lines, select **Trace All Lines** or **Add All**. If you want to remove a few lines from tracing, select a line in the list to remove, then click **Clear**.

- To trace only a few lines, select **Trace Selected Lines**. Click the **Line Select** spin control to select a line to trace, then click the arrow. The selected line appears in the window.

- To start over, click **Clear All**.

5   To select where you want the trace output, select **Screen**, **File**, or **Both**. Selecting **File** saves continuous output to a file called "trace" in the Show N Tel directory.

6   Click **Apply**. You can review your new settings in the **Current Trace Settings** list on the right side of the dialog. You can make changes to your settings now or while Show N Tel Server is running.

7   Start Show N Tel Server from the Show N Tel program group.

8   If you selected to trace to the screen, you can click **Trace Window** to monitor a continuously updated log. If you selected to send trace output to a file, you can click **View Trace Log** at any time to view the trace file as it exists up to the point at which you open it.

9   If you want to continue tracing but want to remove SNT Trace from the screen, click its **Minimize** button (top right).

or

Click Exit to quit SNT Trace; tracing will <u>not</u> stop.

10   To quit tracing, click **Disable Tracing**.

or

Quit SNT Server.

Controlling SNT Trace Log File Sizes

The trace log generated by SNT Trace grows very quickly, requiring CPU and disk resources. If you want to continue running SNT Trace,

consider moving the file periodically to another drive and deleting it from the Telephony Server so that the file does not take too much disk space.

Using Tracebak.cfg

OnePoint Messenger 2.0 Service Pack 1 provides an upgraded full installation of OnePoint Messenger 2.0 that includes a new configuration file, *Tracebak.cfg*, which enables you to set the maximum size and the number of log files created by SNT Trace.

To edit Tracebak.cfg:

1   Navigate in Windows Explorer to **Tracebak.cfg** in **C:\SNT**.

2   Open **Tracebak.cfg** in **Notepad**.

3   On the second line of the file, enter the desired maximum size of the log (there is no limit other than available disk space; the default is 100MB).

4   On the third line of the file, enter the number of logs to save (there is no required maximum; the default is 5).

5   To enable the configuration changes, click **Disable Tracing** (if tracing is running) in SNT Trace, then click **Enable Tracing**.

The first log, named *Trace.log*, is created in C:\SNT. When it reaches the maximum specified size, it is automatically renamed *trace1.bak*, and a new Trace.log is created to collect the most recent tracing data. When Trace.log fills up again, trace1.bak becomes *trace2.bak*, and Trace.log becomes trace1.bak. The file renaming process repeats up to the number of backup files specified, and then the system begins to overwrite the oldest file. For example, if the default of 5 is used, six trace files can be automatically created, and the next log created forces the system to overwrite *trace5.bak*. In that case, to keep trace5.bak, either rename it or move it.

Show N Tel Server

Show N Tel Server is the Brooktrout Technology call processing trace utility that is part of Show N Tel Runtime, included on the OnePoint Messenger CD.

Show N Tel Server traces the functioning of the telephony applications that you have assigned to ports, such as TTS, fax services, and message notification.

You can run Show N Tel Server without the intervention of SNT Trace. If you do, the trace output goes to a DOS window. The trace messages are clear enough so that you can follow the progress of calls. Figure 7-4 displays a sample of SNT Server trace output, and below it is an explanation of the trace messages.

Figure 7-4   Show N Tel Server Trace Output

The call processing sequence noted in Figure 7-4 is:

- **Step 1** (not shown)—The TUI prompts the caller for a mailbox password on Line 1 ("Ln: 1") These are line card ports.

- **Step 2**—The caller enters "1234" as the mailbox password.

- **Step 3**—TUI gets mailbox name (alias for full name): "MuldF"

- **Step 4**—A successful login to a mailbox from the TUI.

- **Step 5**—TUI enumerates total messages in the mailbox.

- **Step 6**—TUI enumerates urgent messages, by type.

- **Step 7**—TUI enumerates saved messages, by type.

Tracing quits when you quit Show N Tel Server.

8. Performance Monitoring

This chapter describes OnePoint Messenger statistics collection and reporting. It includes a description of Windows NT Performance Monitor, Statistics Reporting Program (SRP) and its reports, and System Alert Report. Also described are two counters (Message Services and Port Statistics) added to the resources of Performance Monitor and SRP. This chapter contains the following sections:

Section	Page
Performance Monitoring Overview	**201**
Using the System Alert Report	**203**
Using the Statistics Reporting Program	**203**
Call Statistics	**212**
Using Windows NT Performance Monitor	**212**

Performance Monitoring Overview

OnePoint Messenger provides the Statistics Reporting Program (SRP) on the Telephony Server to enable you to monitor system activity through several defined report formats and through report formats that you can design yourself. SRP uses the same counters used by Windows NT Performance Monitor, but it provides more features—a better interface for setting up logging and database purging intervals, new statistics counters, pre-configured reports, and a reporting interface to help you monitor resource utilization, call activity, and error conditions.

You can also use the new port statistics counter in Performance Monitor, if you prefer. Table 8-1 lists the pre-configured reports available in SRP to monitor system activity.

Table 8-1 Reports used to Monitor System Performance

Report Type	Data Itemization	Output
Call-Me/Meet-Me	Hourly, 15-minute, or daily interval	Display or printer
Custom reports *	Flexible	Display or File
Resource Utilization	Hourly, 15-minute, or daily interval	Display or printer
Port Statistics	By port	Display or printer
System Activity Summary	Hourly, 15-minute, or daily interval	Display or printer
System Alert **	By alert event	Display or Event Log
VPIM Statistics	Hourly, 15-minute, or daily interval	Display or printer

∗∗ Custom report formats can be created by purchasing Crystal Reports*TM* (manufacturer is Seagate Technology); it is not included with OnePoint Messenger. Put the report template in the \Custom Reports directory. Custom reports can use Statistics Reporting Program or Performance Monitor.

∗∗ System Alert uses Performance Monitor to report.

See "Samples of Reports" on page 209 to see the report formats used by the reports in Table 8-1, above.

Statistics Collection

During system operation, call activity statistics are collected continuously. Statistics are set up in two categories:

- **Message Services**: Recorded for the server

- **Port Statistics**: Tracked on a per port basis

These statistics are sent to a statistics history database at 15-minute intervals, unless you change the logging interval to hourly. For details about setting logging intervals and other reporting options, see "Setting the Logging and Purge Interval" on page 205 in this chapter.

Using the System Alert Report

The System Alert Report is a pre-configured report designed to monitor OnePoint Messenger operational status. It runs automatically in Windows NT Performance Monitor, in background mode. Therefore, it is not visible by simply starting NT Performance Monitor and selecting Alert report type. It monitors the following statistics as they are collected:

- All ports busy time exceeds 20%

- All fax resources busy time exceeds 20%

- All TTS resources busy time exceeds 20%

- CPU utilization exceeds 90%

- RAM committed bytes in use exceeds 95%

- Disk free space is less than 10%

- Physical disk time exceeds 90%

When the limits are reached, Performance Monitor logs a message in the Event Application Log. You can use Performance Monitor to change the logging intervals, alerting thresholds, and the alerting mechanism. For example, if System Alert Report (AlertReport.pmr) generates a threshold warning, you can instruct Performance Monitor to launch an alert window on another Windows PC in the LAN.

Performance Monitor generally captures data at five-second intervals. Some Telephony Server processes may execute in less than five seconds. If for example, a utilization of TTS occurs in less than five seconds, that instance is not recorded unless you reduce the capture interval.

Using the Statistics Reporting Program

Statistics Reporting Program (SRP) is a OnePoint Messenger call statistics reporting program. From its statistics history database, it creates the following reports, each for configurable time periods:

- **Call-Me/Meet-Me**: By time period—three calculations each for Call-Me and for Meet-Me—total number of sessions, maximum coincident Call-Me sessions, and average minutes per session

- **Port Statistics**: By port number—calls incoming and outgoing, total busy time, and % busy time

- **Resource Utilization Report**: Maximum number of ports, fax, and TTS used by hour; amount of time when all ports, fax resources, or TTS resources are used; number of times when a fax or TTS resource was unavailable

- **System Activity Summary**: For all ports by hour—summarizes number of incoming calls, faxes received, outgoing calls, faxes delivered, pages, messages that were played or recorded or used TTS, and fax delivery failures

- **VPIM Statistics**: By time period, number of VPIM messages received, sent, and average size in KB for each

The report formats are shown in the section "Samples of Reports" on page 209 of this chapter. Before you can generate reports using SRP, you must set the logging interval in SRP, then wait for Telephony Server to collect system usage data.

To start System Reporting Program:

Double-click the **Report** icon in the **OnePoint Messenger** desktop folder to start SRP, or launch it from the OnePoint Messenger group on the Windows **Start** menu. The SRP main window, the **Report Options** dialog, appears, as shown in Figure 8-1.

Figure 8-1   Statistics Reporting Program Main Window
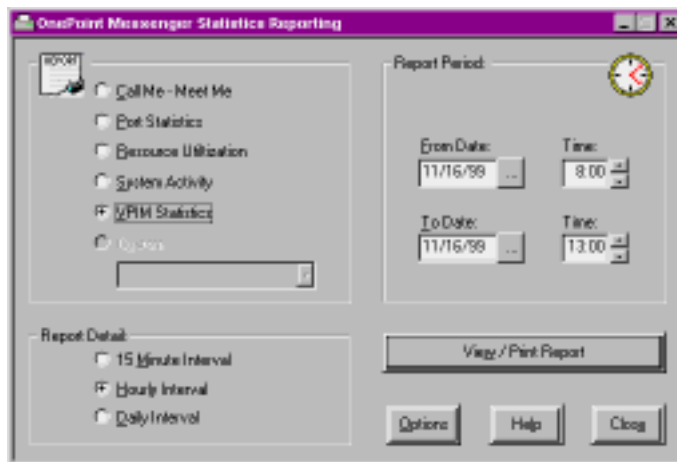
The following sections provide details about using SRP:

- Setting the Logging and Purge Interval

- Selecting and Configuring a Report

- Resetting Defaults

- Error Checking

- Using the Statistics Reporting Program Reports Toolbar

- Samples of Reports

Setting the Logging and Purge Interval

Performance Monitor collects OnePoint Messenger call activity constantly for use by SRP. The default logging interval is 15 minutes. In other words, it is set to store 15-minute totals. You can choose between 15-minute and 60-minute logging intervals using SRP.

The default purge interval is 60 days. In other words, Performance Monitor removes data from the database that is older than 60 days. You can use SRP to set the purge interval for any length of time between seven and 120 days.

To set the logging and purge intervals:

1   On the SRP main window, click the **Options** button. The **Logging Options** dialog appears, shown in Figure 8-2.

Figure 8-2   Statistics Logging Options
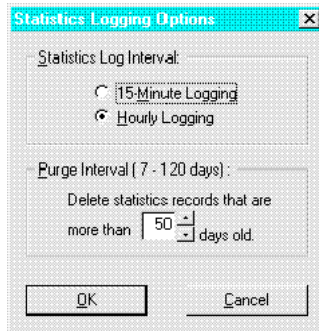
2   In the **Statistics Log Interval** group, select either the **15-minute Logging** or **Hourly Logging** radio button.

In deciding whether to use hourly or 15-minute logging, consider that if you use the hourly logging interval, the 15-minute reporting interval is not supported.

3   In the **Purge Interval** group, click the spin control to the number of days of data to keep.

You might want to note the start date, because, when you run your reports, two factors play a role—the purge time limit and the date you started collecting data. Average usage calculations could be

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misleading if one or more of the periods included did not contain data for the whole period.

Also, consider the impact on the disk capacity of the server of long purge times, especially with 15-minute logging. One test on a 40-port system grew the statistics history database about 2MB per day with a 15-minute logging interval, which is 120MB of space for 60 days. Depending on what and when you back up, your backup times and files will also be impacted.

Selecting and Configuring a Report

To generate an accurate report, collect enough data for the time period that you want the report to cover by setting your logging and purge intervals, as explained above.

To select and configure the report:

1   On the Statistics Reporting Program's main window, click the radio button of the report you want to generate. Your choices are **Port Statistics**, **Resource Utilization**, **System Activity**, **and Custom**. The pre-configured reports are described above in the section "Using the Statistics Reporting Program" on page 203.

For samples of the three pre-configured reports, see the section "Samples of Reports" on page 209 of this chapter.

Custom reports are those that you design in Crystal Reports. If you install the full Crystal Reports development tool, you can design reports that you can access from the **Custom** edit box. Store the custom reports in Baypoint\OnePoint Messenger\Custom Reports. If SRP does not find a report form in the Custom Reports directory, the **Custom** radio button is grayed out. If there is a report form in the directory, the **Custom** radio button is active, but the **Custom** edit box is grayed out until you click the **Custom** radio button.

NOTE: You can configure the report by making your setting choices in any order. Also, once you have set your report times, all reports that you run will use those times until you change them, or until you stop and restart SRP.

2   In the **Report Detail** group, select the reporting interval that you want—**15-minute**, **Hourly**, or **Daily** intervals.

Reports using 15-minute intervals do not report data for periods in which logging intervals other than 15-minute logging were in

effect. Also, reports always start and end on an hour, even if 15-minute detail is possible.

3   Select a start and an ending date for the report by editing the **From Date** and **To Date** fields in the main window.

You can type in a date, but do so without entering the slash separators. SRP fills those in automatically. Alternatively, click the **From** or **To** "**...**" button to the right of the appropriate date field. A calendar appears, as shown in Figure 8-3 below.

Figure 8-3   Statistics Reporting Tool, Calendar
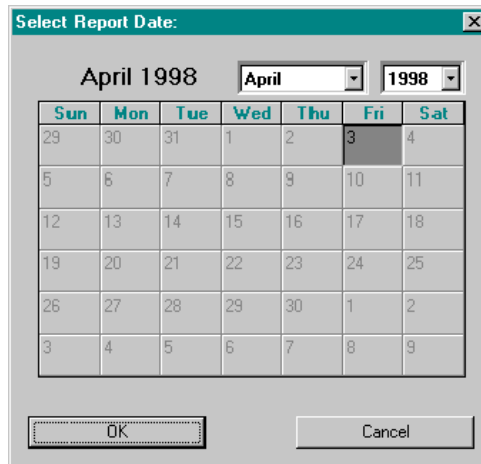
On the calendar, to change the start or end date of the report (depending on whether you clicked the **From** or **To** button in the main window):

a.   Click the down arrow in the **Year** edit box to select another year.

b.   Click the down arrow in the **Month** edit box to select another month.

c.   Click the appropriate day on the calendar.

d.   Click **OK** to accept the changes and return to the main window. Clicking the **Close** box (the X) on the calendar is equivalent to clicking **Cancel**.

5   Back in the main window, shown in Figure 8-1, click the **Time** spin control by **From** and **To** to set the start and end times for the report.

6   After setting the date range, time range, and reporting interval in the main window, click the **View/Print** button to start the report.

Resetting Defaults

When SRP is shut down and restarted, the report option defaults are used. When the Report Options dialog is used to change the time, date, or report interval, these changes remain in effect for all reports generated until the program exits.

Data collection options (purge interval and log interval) that you select stay in effect until you change them. Stopping and starting SRP has no effect on those settings.

Error Checking

An error message appears if you set a report range with an invalid month, day, or year value.

If you request a report range for which the level of detail requested is not all in the history database (such as empty time periods), the report will include only existing records. However, if hourly logging is in effect, the 15-minute reporting option is disabled.

If you switch from hourly logging to 15-minute intervals, you can start a report that requests 15-minute intervals, but the report will include 15-minute details only for the periods in which data was logged at 15-minute intervals. For example, if you set the logging interval at one hour for one week, and then change the interval to 15 minutes the next week, then run a report with 15-minute reporting intervals. The report will show 15-minute intervals only for the week in which 15-minute collection interval was active.

Periods that contain no call activity are not reported.

Using the Statistics Reporting Program Reports Toolbar

SRP reports appear with the toolbar shown in Figure 8-4. You can also use Performance Monitor reporting, discussed below in Using Windows NT Performance Monitor.

Figure 8-4 Reports Toolbar
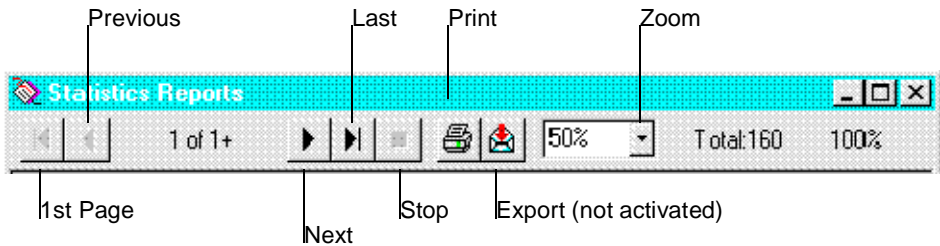
Most of the toolbar controls are familiar. The report processing status is shown at the right end of the toolbar. Figure 8-4 shows 100% of the report has been processed, a total of 160 records. You can interrupt the processing by clicking the **Stop** button.

Samples of Reports

This section provides samples of the report formats available through the Statistics Reporting Program, and explains how to interpret and use the information presented on these reports. The common features of the reports are the:

*   **Organization name**: The name of the organization, as designated during the OnePoint Messenger setup, appears below the report title at the left. For example, in Figure 8-5, the organization name is shown as "Calaveras".

*   **Server and Site**: "Server" is this Telephony Server ("Spacely" in Figure 8-5). "Site" is the Exchange site for this Telephony Server.

Figure 8-5   Statistics Report Program, Call-Me/Meet-Me Report

Figure 8-5 shows a Call-Me/Meet-Me Report. This report can help you decide how many ports to dedicate to Call-Me by assigning Notifications (Full) or Notifications (CM) in Show N Tel Manager.

Figure 8-6 shows a Port Statistics Report. One use for this report is for load balancing. Your PBX may be using an algorithm that does not correctly balance calls across the available ports, so that one port handles so much traffic that some calls get busy signals. Note that when the title—"Port Statistics" in this case—does not indicate the reporting interval, the interval is 15 minutes.

Figure 8-6   Statistics Report Program, Port Statistics Report
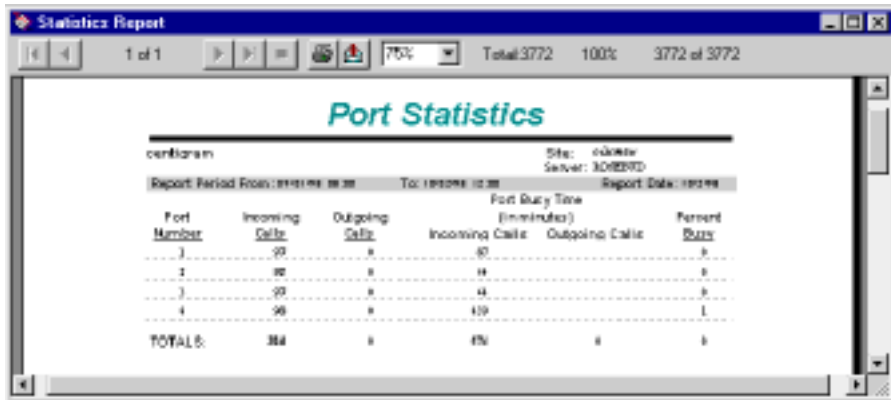
Figure 8-7 shows a sample Resource Utilization Report. This report can be used to identify times when particular resources are more highly committed. If you run the Port Statistics Report and see that Percentage Busy is relatively high, you can run the Resource Utilization Report to identify times and types of utilization that can be the focus of a more focussed time study in the Port Statistics Report.

Figure 8-7   Statistics Report Program, Resource Utilization Report.
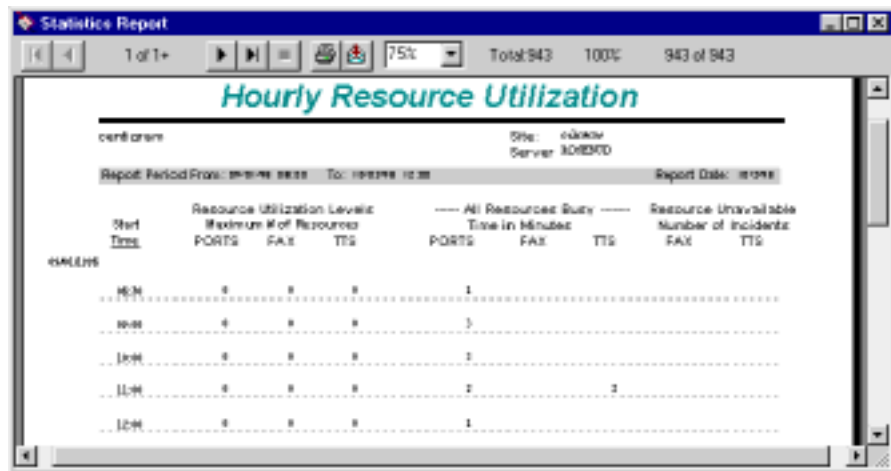
Figure 8-8 shows a sample System Activity Summary. This report details the use of types of services, such as message playback and recording, the use of TTS for listening to e-mail, and the use of fax. This report might show low use of a function, alerting you to the need to educate users in the use of that function, or it might show high use, suggesting the need to add more resources to support it.

Figure 8-8   Statistics Report Program System Activity Summary
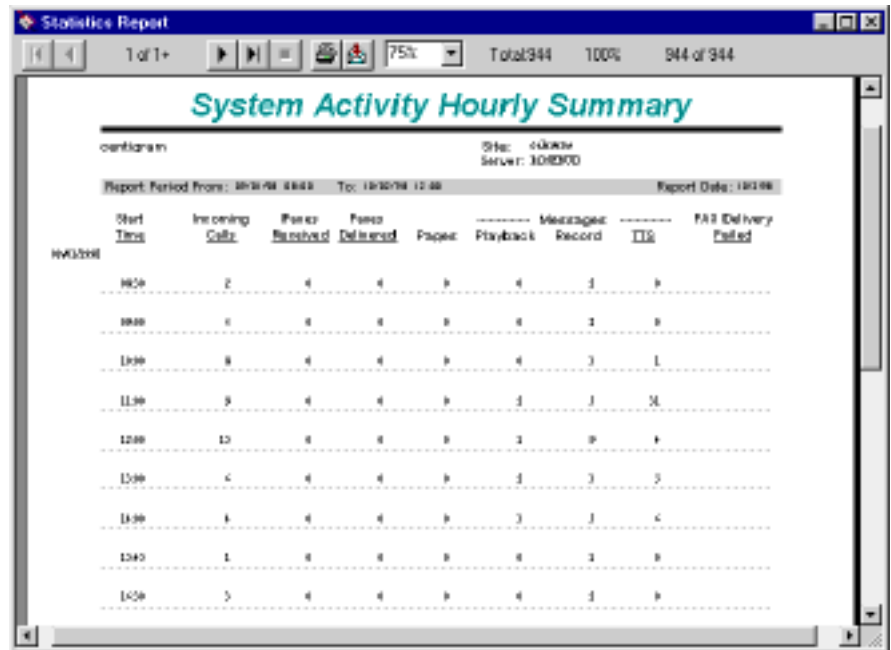
The Voice Profile for Internet Messaging (VPIM) messaging service on the Telephony Server enables users to use the Internet to transport voice messages between disparate voice mail systems. It is probably the most resource-intensive activity in unified messaging. In addition to using the substantial resources required by standard voice mail—ports, RAM, and CPU cycles on the Telephony Server, and storage space on Exchange, VPIM messages also require extra cycles for transcoding sound file formats, post office, directory, and gateway services, and extra network bandwidth for moving messages between the voice mail systems. Figure 8-9 shows the header of the VPIM Messaging report format.

Figure 8-9   Statistics Report Program, VPIM Messaging
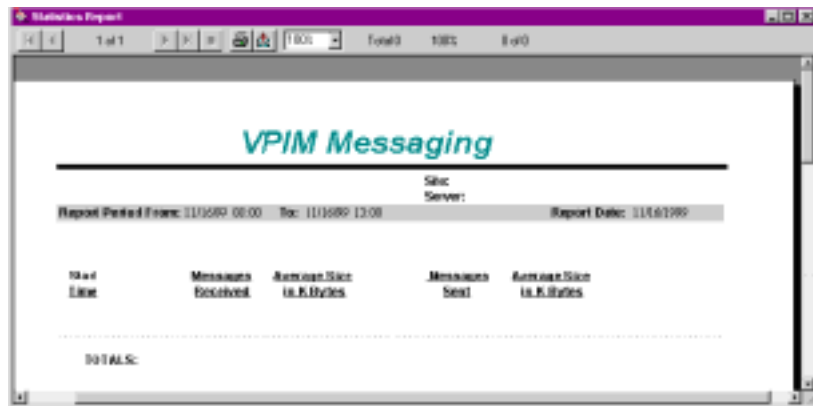
Call Statistics

Show N Tel Manager provides an interface for configuring the gathering of detailed statistics about call length and similar data. For example, you can gather for each call:

- Number of First Minutes
- Number of Additional Minutes
- Number of Hang-ups
- Number of First Seconds
- Number of Additional Seconds
- Number of Hang-up Seconds

Number of Hangup Seconds is how soon into the call that the caller quits the call. This kind of data could be valuable to an automated call center delivering promotional messages. See Chapter 1 in the *Show N Tel Manager System Administrator Guide* for more on monitoring this kind of activity. The guide, in Acrobat PDF format, is on the OnePoint Messenger CD-ROM as sntmgrguide.pdf. Note, however, that the PowerBlock functionality that is described is enabled in OnePoint Messenger only for licensed developers.

Using Windows NT Performance Monitor

You can use Windows NT Performance Monitor to create custom reports that periodically display statistics or log the statistics to a disk file. Performance Monitor can display charts using data collected in real time or from the log file. Statistics collected by the Statistics

Reporting Program are also available to Performance Monitor. Performance Monitor provides only daily totals, while SRP can provide 15-minute, hourly, or daily totals.

To configure a Performance Monitor report:

1   To start Performance Monitor, click the Windows **Start** button, then choose **Programs**, **Administrative Tools**, and **Performance Monitor**.

2   From the **File** menu, choose **New** to create a new report.

3   Click **Report** (or from the **View** menu, choose **Report**) then click the "+" toolbar button to open the **Add to Report** window, shown in Figure 8-10.

Figure 8-10   Add to Report Window
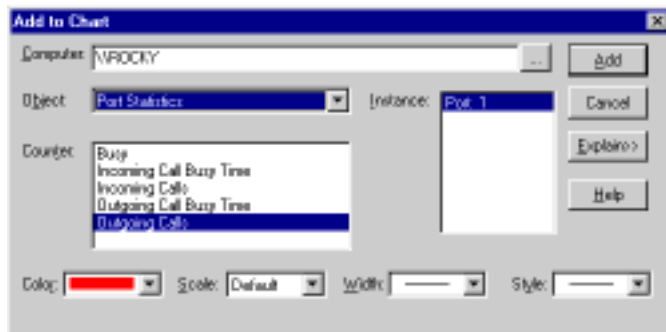
4   Click the down arrow in the **Object** list box to select the type of report you want to generate. The Port Statistics counter included with OnePoint Messenger is available to Performance Monitor.

5   The counters (types of statistics available) for the report you select appear in the **Counter** list box. Select the counters you want to include in the report. For each counter you want to include, click it, then click **Add**. Use [Shift]-click to select multiple counters that appear sequentially in the list and [Ctrl]-click to select non-contiguous counters.

    NOTE: When you select a counter, a definition of that counter appears in the Counter Definition panel at the bottom of the window. You can get a description of counters by first clicking the **Explain** button.

6   In the **Instance** list box, select the ports you want to monitor. In the example above, there is only one port available. You will probably have many more.

7   Click **Done** (the **Cancel** button changes to **Done** after you select
     and add counters.)

Figure 8-11 shows a sample format of a Performance Monitor report
using all of the Port Statistics counters monitoring one port.

**Figure 8-11   Sample Performance Monitor Report Format for
Port Statistics**
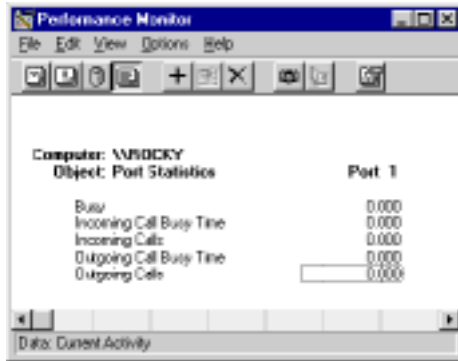
9. System Maintenance

This chapter describes how to maintain your OnePoint Messenger software, discussing the types of service and the associated tools and procedures. It provides discussions of backups, reinstalls, removal, hot fixes, service packs, version analysis and upgrades, configuration modification, and feature licenses. Tools discussed include License Install, Telephony Server Monitor (TSMon), System Service Tool (SST), and backup programs. This chapter contains these sections:

Section	Page
Service Terminology	**215**
Upgrading and Repairing OnePoint Messenger	**217**
Reinstalling or Removing OnePoint Messenger	**218**
What You Can Do with System Service Tool (SST)	**219**
Upgrading OnePoint Messenger Feature Licenses	**220**
Managing OnePoint Messenger Backups	**225**

Service Terminology

This chapter uses industry-standard terms for the various kinds of changes that can be made to installed software. It is important that you be familiar with these terms in order to understand this chapter. The following terms describe the levels of software service. See also the glossary at the end of this guide.

Base release: (also called *version* or *rev level*) A base release is a complete OnePoint Messenger codeset. Base releases are the only OnePoint Messenger service level that can contain new features or functionality. It is possible that they may only contain additional corrective and/or preventive maintenance. Base releases are identified by "OnePoint Messenger" and a number in the form x.x, such as: "OnePoint Messenger 1.0," "OnePoint Messenger 1.12," or "OnePoint Messenger 2.1."

Hot fix: A hot fix is a patch, a software repair, or preventive maintenance for a particular base release. It contains complete files but not the complete package. A hot fix that is sent to all sites is called a *general availability hot fix*. A hot fix that is specific only to a particular site is called a *site specific hot fix*. Hot fix part numbers represent their build levels and build numbers (e.g., "Hot Fix 4098-100001 Build 2.")

Service bundle: The hot fix or service pack that you receive will probably be delivered as a single compressed file called the *service bundle,* because it will contain several files. Use only System Service Tool to open the bundle. Do not try to extract the files individually.

Service level: This is the basic measure of the service status of a OnePoint Messenger system. A service level is a composite label, containing the combination of base release, service pack and release status information as in: "OnePoint Messenger 1.0 Released."

Use System Service Tool (SST) to manage the application of hot fixes and service packs. SST matches them against the current service level, so that, for example, you do not apply service for an older service level of the software than the most recent one that you have installed.

Service pack: A service pack is a maintenance release that can contain collections of both preventive and corrective service. They are applied to the OnePoint Messenger system in a single service operation. Service packs are cumulative — a successor service pack includes the service of the previous service pack, and contains a collection of subsequent hot fixes. It occasionally contains other maintenance for a particular base release. Installation of the service pack generally obviates the need to install prior hot fixes. If there is an exception, the service pack will include an information file to alert you. System Service Tool. Service packs do not add features.

Upgrade: Installing a base release on a system where OnePoint Messenger has been previously installed is referred to as an *upgrade or version upgrade*. Base releases and upgrades contain feature enhancements, as well as all previous fixes provided by previous hot fixes and service packs. Base releases and upgrades are not managed by System Service Tool (SST), but their installations are noted in the SST Service History database.

Version: See the definition of Base Release, above.

Upgrading and Repairing OnePoint Messenger

Currently, there are several ways to upgrade or repair OnePoint Messenger. For detailed definitions of the terms here, see the glossary.

Base Release Installation

If you experience problems with the operation of the Telephony Server, or you want to install a new base release, first use Telephony Server Monitor (TSMon) to stop Telephony Server services, then install or reinstall all or part of OnePoint Messenger using the OnePoint Messenger Installation Program from the OnePoint Messenger CD-ROM. The installation program contains several installation options, such as what line cards to install. For details, see "Reinstalling OnePoint Messenger" in Chapter 5 of the *OnePoint Messenger Installation Guide*. For more on reinstalling a base release of OnePoint Messenger, see "Reinstalling or Removing OnePoint Messenger" on page 218.

Generally, for new base releases, you do not need to remove the previous version of the OnePoint Messenger software. That is not true for installing OnePoint Messenger 2.0 on a system running OnePoint Messenger 1.1. Follow the instructions that come with the release.

When the OnePoint Messenger Installation Program installs a base release over a currently installed version, it alerts System Service Tool, which records them in its Service History database, which you can view from the System Service Tool main screen.

Hot Fixes and Service Packs

Use System Service Tool to compare installed software with the available hot fix or service pack. See "What You Can Do with System Service Tool (SST)" on page 219. Also use Version Reader to note currently installed versions. For details on Version Reader, see "Using Version Reader for System Validation" on page 187 in Chapter 6. To install software, first use TSMon to stop Telephony Server services, then use System Service Tool to manage the installation of hot fixes and service packs. See Chapter 5 in the *OnePoint Messenger Installation Guide*.

Upgrading Feature Licenses

To upgrade OnePoint Messenger feature licenses, see the section "Upgrading OnePoint Messenger Feature Licenses" in Chapter 5 of the *OnePoint Messenger Installation Guide*.

Revising the Network Configuration

During installation, Configuration Wizard is invoked to provide you the opportunity to set up OnePoint Messenger software on the Exchange Server and set the configuration between the Telephony Server and the Exchange Server. For example, you can set the primary Exchange Server, create a mailbox for Telephony Server on Exchange, and set up Exchange administrative permissions.

You can also launch Configuration Wizard on the Telephony Server at any time after installation to change the Exchange Server, upgrade its software, and change the Telephony Server Administrator Exchange profile. For details, see "Revising the Telephony Server/ Exchange Integration" on page 59 in Chapter 2 of this guide or see Procedure 5 in Chapter 3 of the *OnePoint Messenger Installation Guide*.

Microsoft also provides the Microsoft Exchange Move Server Wizard, which helps you to change the structure of, or information about, your Exchange site or organization. For more information, see the section "Microsoft" on page 239 in Appendix B of this guide.

Renaming the Telephony Server

With OnePoint Messenger 2.0, you can change the computer name of the Telephony Server. See "Renaming the Telephony Server" in Chapter 5 of the *OnePoint Messenger Installation Guide*.

Reinstalling or Removing OnePoint Messenger

You can reinstall the same version or a new version of OnePoint Messenger server components over a current version, with some exceptions. Refer to the Release Notes that accompany the service for details.

On a system that has had OnePoint Messenger installed, it is wise but not absolutely necessary to back up that installation of OnePoint Messenger before removing and reinstalling the base release. Then use the OnePoint Messenger Installation Program on the software CD-ROM to install or reinstall the base release software.

For details on installing a base release of server or client components of OnePoint Messenger, or for details on removing OnePoint Messenger, see Chapter 5 in the *OnePoint Messenger Installation Guide*.

SmartUpdate Automated Configuration Backup and Restore

SmartUpdate is an installation utility that allows you, when reinstalling a base release or when upgrading from one base release to a newer release, to preserve and restore the current system configuration. When you insert the OnePoint Messenger CD-ROM and the installation starts, the installation program tests to see if a previous version of OnePoint Messenger exists on the system. If there is one, it invokes SmartUpdate, which offers to back up the configuration files.

In order to back up and restore a OnePoint Messenger database, the file must be stored in its default directory. Also, all of the database files must reside on one drive.

The OnePoint Messenger 2.0 Installation Program comes with SmartUpdate to help you save and reinstall your configuration files if you need to reinstall OnePoint Messenger or for when new releases become available. SmartUpdate is not available to migrate configuration files from earlier versions of OnePoint Messenger to OnePoint Messenger 2.0.

For more on reinstalling OnePoint Messenger, see Chapter 5 in the *OnePoint Messenger Installation Guide*.

What You Can Do with System Service Tool (SST)

System Service Tool (SST) is a OnePoint Messenger utility with which you manage the installation of hot fixes and service packs on Telephony Server. SST also maintains and presents an interface to the OnePoint Messenger Service History database, which records all servicing, including all base releases installed on the Telephony Server. SST makes the installation history available to offsite technical support. It is augmented by a notification record that you as the administrator enter about yourself in SST, so that offsite personnel have a quick reference for how to contact you.

SST manages the application and removal of hot fixes and service packs by:

- Controlling the sequence of application and removal of service levels to conform with version numbers

- Compressing and archiving replaced files, so SST can roll back multiple levels of service if necessary

- Replacing obsolete files with those of the new service level

- Updating the Windows registry with the settings of the current service level

- Managing rollbacks of service

SST provides service tracking through its Service History database, which records these operations:

- Base level server software upgrades

- Application of hot fixes for specific base levels

- Application of service packs for specific base levels

- Removal of hot fixes, service packs, and base levels

For details on the use of SST, see Chapter 5 in the *OnePoint Messenger Installation Guide*.

Upgrading OnePoint Messenger Feature Licenses

When you add OnePoint Messenger to Exchange, unified messaging is not automatically available to everyone. One condition is that your OnePoint Messenger system license must include the appropriate feature licenses, sized to the number of users that need each feature.

If your license does not support enough of a needed feature, you can purchase an upgraded license from your sales representative. To review your installed licenses, run License Install from the OnePoint Messenger program group. The license review screen is also available at the beginning of the OnePoint Messenger Installation Program sequence. The main dialog appears, as shown in Figure 9-1.

Figure 9-1   Select License File Name Dialog
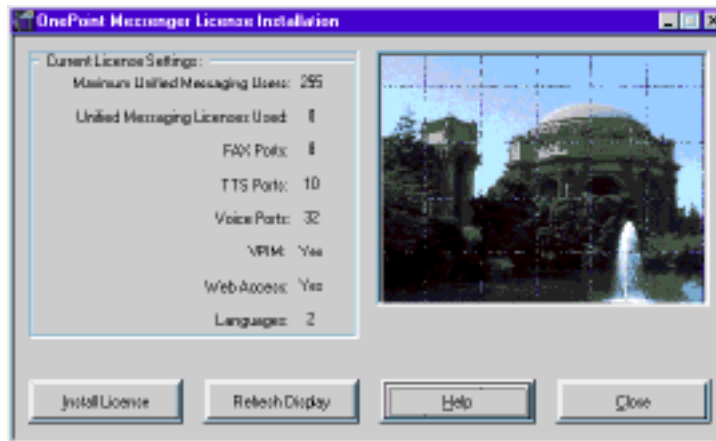
Reviewing License Status

The left side of the main License Install dialog, as shown above, displays the current number of installed feature licenses of the five available types. Click **Refresh Display** to be sure you see the current information.

The license types are:

• **Unified Messaging Users:** The display lists the total available licenses for full unified messaging and the number assigned. This resource decrements by one when a user is assigned the Full Unified Messaging permission on the Unified Messaging tab of Exchange Administrator on the Exchange Server. For details on assigning licenses, see "Managing OnePoint Messenger Users" on page 63 in Chapter 2 of this guide.

• **Fax Ports:** Fax ports are used to send and receive faxes, supporting e-mail downloads from users' mailboxes, Fax on Demand, and standard fax transmission. To send faxes, you need to acquire both a Voice Port license and a Fax Port license. After acquiring and installing the licenses, assign the SendFax telephony application to a port. The Fax on Demand telephony application can be assigned to a port to support dedicated access to the Fax on Demand service. Alternatively, you can allow the general purpose Telephony Server telephony application to handle Fax on Demand calls.

• **Languages**: The base OnePoint Messenger license provides two TUI languages of your choosing. To have access to a third choice

for system and user mailbox prompts, purchase the language license. All three currently available languages are installed at installation time, so the third language is automatically available when you use the License Install program to install the optional language license.

- **TTS Ports:** Text-to-Speech (TTS) ports are used primarily by OnePoint Messenger for reading e-mail to users over the telephone. TTS speaks the name of the sender, then the message subject line, then any text in the body of the e-mail. Attachments are not rendered. TTS also speaks the text name entered in the user's profile when the user has not recorded a name.

    TTS ports may be used by any voice port application. Each used TTS port must be licensed. In other words, you must purchase both a Voice Port license and a TTS Port license for each port that supports TTS. TTS ports are dynamically allocated and released so that they are shared among voice port applications. The number of licensed TTS ports determines how many TTS operations can occur simultaneously.

    At least one TTS license is required to use the Text-to-Speech feature. The number of callers allowed to simultaneously use TTS is limited to the number of TTS port licenses installed.

    Although fax and TTS licenses are not assigned to individual users, you can assign (or not assign) fax and TTS rights to individual users in Exchange Administrator in order to keep the demand for those services within the constraints of the number of port licenses that you have.

    NOTE: If additional TTS licenses are installed while Show N Tel applications are running, use Show N Tel Manager to stop and restart all lines to enable the new TTS licenses.

- **Voice Ports:** These licenses support voice and fax telephony through the line card ports. You can purchase more or fewer voice port licenses than you have physical ports on your line cards. The resource constraint is the lesser of the two. In other words, if you purchase 25 voice port licenses but have only a 24-port card, one voice port license is unusable. Also, any fax port that you assign to Fax on Demand or SendFax is deducted from the line card ports that are available to the voice ports.

    When you assign Voice and Fax Mail on the Unified Messaging tab in an Exchange profile, you do not decrement any feature

license, but assigning Voice and Fax Mail or Full Unified Messaging to more and more users will ultimately impact the availability of voice ports, TTS ports, and fax ports.

- **Web Access:** This is a site license that allows you to provide all users Web access to their mailboxes. The Web client works only for users who have the Full Unified Messaging option set in their Exchange profiles. You must install Microsoft Exchange 5.5 and other software components to provide this. See Chapter 2 of the *OnePoint Messenger Installation Guide* for details.

- **VPIM:** A message transport agent application on the Telephony Server receives and transfers messages to Exchange from remote voice mail systems. To give users the ability to reply to or create new messages to other VPIM-compliant voice mail systems, you must install the VPIM license.

Estimating Your License Needs

As summarized in Table 9-1 below, you must purchase a Voice Port license for each line port that you wish to use, whatever its use, including TTS, Fax, etc. In addition, you must purchase Fax Port or TTS Port licenses for the total number of simultaneous ports that you want to support with fax or TTS. Web access and Unified Messaging (UM) user licenses are independent of ports and port licenses.

For example, if you have 100 users and want UM licenses for 80 of them, purchase 80 Unified Messaging User licenses, and, optionally, a Web Access license. If you have 20 line ports that you want to enable, purchase 20 Voice Port licenses. To support five simultaneous lines of TTS, also purchase five TTS Port licenses. To support two fax ports, also purchase two Fax Port licenses. You can then assign up to two ports to SendFax or Fax on Demand.

Table 9-1 Required Elements for Unified Messaging Features

Feature	Physical Line Ports	License	Application Assigned to Port
Telephone access to voicemail	1 per simultaneous call	1 Voice per caller	Telephony Server
TTS of text messages	no ports necessary beyond those needed by voicemail users	1 TTS (dynamically assigned) and 1 Voice for each TTS use	Telephony Server
Send or receive Fax	1 per simultaneous fax transmission	1 Fax and 1 Voice per simultaneous fax	SendFax
Calls to Fax on Demand service	1 per simultaneous call	1 Voice per simultaneous call	FaxOnDemand (on dedicated port) or else calls use any available port running Telephony Server
Full Unified Messaging services	as needed per above	as above plus Full Unified Messaging	as above
Web access to mailbox	no	site license; user needs Full Unified Messaging	no
VPIM	no	site license	no

Using License Install

Once you have purchased a feature license, you need to assemble license files on a license diskette. Then use the License Install utility to install it. For details on acquiring an optional license, see the section "Upgrading OnePoint Messenger Feature Licenses" in Chapter 5 of the *OnePoint Messenger Installation Guide*.

NOTE: Acquiring or creating a license diskette also pertains to replacing Telephony Server hardware components, also discussed in Chapter 5 of the *OnePoint Messenger Installation Guide*.

Managing OnePoint Messenger Backups

This section discusses backup strategies for Exchange and Telephony Server, using the backup program supplied with Windows NT as an example. In addition, it discusses compression and backup of OnePoint Messenger databases.

While not required, it is always wise to do a full backup before performing a service operation. The OnePoint Messenger program suite does not include a backup program, but the backup utility included with Windows NT should suffice for performing the foreseeable OnePoint Messenger backup tasks.

Using Windows NT Backup

To use the Windows NT Backup utility, you will need to attach a tape drive to some Windows NT system in the LAN to perform the backup. The backup management server does not have to be the Exchange Server or Telephony Server, as long as the backup system has network access to those computers and access permissions to the directories (and registry) that you want to back up.

To access Backup:

Click the Windows **Start** button, then choose **Programs**, then **Administrative Tools**, and then **Backup**.

To integrate a tape drive with your NT system:

1 Click the **Tape Drives** icon in **Control Panel**.

2 Click the **Detect** button.

3 If you need to choose or add a driver, click the **Driver** tab.

4 If your drive and driver are not in the displayed list, click the **Add** button. If you do not have the tape driver on disk, you may find it among the driver files that are located on the Windows NT CD-ROM.

Windows NT Backup provides the ability to:

• Select files for backing up or restoring by volume, directory, or individual file name. You can back up the registry backup by selecting its check box. Backup allows you to view file information, such as file size and modification date.

• Select an optional verification pass to ensure reliable backups or restorations.

- Perform any of the following common backup operations: **Normal**, **Copy**, **Incremental**, **Differential**, and **Daily Copy**.

- Place multiple backup sets on a tape, and either append new backup sets or overwrite the whole tape with the new ones.

- Span multiple tapes with both backup sets and files, since there is no file-size restriction.

- Create a batch file to automate repeated backups of drives.

- Review a full catalog of backup sets and individual file and directory information so you can select files to be restored.

- Save log information on tape operations to a file. Also view tape-operation information in the Windows NT Event Viewer.

Backing Up OnePoint Messenger Files

What you back up and how often you do so depends on your environment and concerns. If you make configuration changes constantly, you will be more inclined to back up a full system image before making configuration changes. If you never revise the configuration, you may be content to back up only the diagnostic logs on Telephony Server.

The major questions to ask before deciding what to back up are:

- What files have changed and how much?

- What value do you place on current messages and configurations?

- How stable are your servers?

- How fast and dependable is your backup system?

- What competition for system resources exists between your backup system and other services on the network and servers?

Generally, you should do backups before and after you have made many configuration changes and before you perform service level maintenance. Beyond that, you might decide that you do not care enough about saving your messages or minor configuration changes to do regular backups.

However, backup systems are relatively cheap. If you have the bandwidth to back up all your data easily every day without impacting other services, why not do so? If your backup system cannot back up

everything easily, then you might simply set up an automatic schedule of daily differential backups, with a weekly full backup. One fact that should influence you to do backups is that Exchange and Telephony Server can be backed up while running.

You also have verification and validation to consider. These tests can help assure you that you have made a backup tape that you can use to restore what you expect to restore. To select verification, set the **/v** switch on Backup. See the Microsoft Back Office online documentation or see the Backup online help.

Verification can take about one half hour per two hours of backup time. See the Exchange online help for information on the process of validation. It involves restoring a tape to a non-production server, reading messages, creating a profile, and sending messages.

Backing Up Microsoft Exchange

Microsoft Exchange has three kinds of files to back up — the basic configuration, user profiles (including directory, distribution lists, and property pages settings), and the message store (including all folders — files with the .edb extension). The message store changes continuously, while the basic configuration does not change, but the configuration is usually more important to administrators than are the messages (users probably have a different opinion.) Your backup strategy should account for the differences in the frequency of change and the criticality of the information.

The addition of OnePoint Messenger to Exchange impacts Exchange only in degree. Before and after you add the OnePoint Messenger Extension to Exchange, you should back up the system files. When you add OnePoint Messenger users, you should back up the recipient and directory databases. OnePoint Messenger users will have larger message databases, both in number of messages and in number of bytes, because their message containers will include faxes and voice messages. Therefore, you probably will want to back up these containers more frequently.

Backing Up Telephony Server

The first thing to note is that there are no messages on the Telephony Server to back up, so your backup activity is primarily correlated to configuration settings and changes that you want to back up. Since there are many Telephony Server subsystems in many directories with many log files, executables, and databases, OnePoint Messenger Product Support recommends that you simply run full system back-

ups, both periodically and when you make major configuration changes, such as when you record greetings, create new routing menus, create system fax cover pages, and edit the Text-to-Speech dictionary.

Another issue on the Telephony Server are log files, which can become dangerously large if you allow them to grow, so you should archive and remove them when they grow large. You might see a need to back them up, but it can be helpful to have archived baseline data for troubleshooting and performance analysis. The files most likely to grow large are:

- **trace.log** (Show N Tel Server trace log)—This file can grow by many megabytes per day, and because it does not create a new file until you replace the old one, it is a primary candidate for a daily backup (and removal), if only as a matter of cleaning house.

- The Windows **NT Event Log**—You can back up the Event Log to a text file or to an .evt file that preserves the event details. You can use Event Viewer to set limits on the size of the Event Log.

- The **Statistics Reporting Program** logs (**stat.mdb**). These logs can grow quickly if you set logging for 15 minute intervals.

A backup of an individual file can be performed with a simple copy.

Appendix A.   Directory Services

This appendix provides details about the operation of Directory Access Service (DAS), for automatic directory synchronization, and Directory Initialization, for invoking directory synchronization manually. It contains the following sections:

DAS Data Access

Directory Access Service (DAS) is a Telephony Server subsystem. Its function is to provide a directory cache on Telephony Server, so that directory lookups are quicker. DAS is comprised of the entries listed in Table A-1.

Table A-1 DAS Entries

Entry	Provisioned From	Where Stored	Accessible by DBN
Distribution Lists	Exchange Administrator	Recipient Container in Exchange	yes
OnePoint Messenger User	" "	" "	"
VPIM addressees	" "	" " (Custom Recipients with Voice and Fax permissions)	"

In other words, when a caller attempts to connect to a mailbox, the TUI must convert the keys pressed into requests for specific mailbox profile information—the user (subscriber) name, telephone number, mailbox number, and greeting. The function of DAS is to serve this information to the TUI from a directory cache of that information that it builds on Telephony Server.

DAS Queries

The TUI requests mailbox information from DAS when:

- **Dial By Name (DBN)**: An intentional message is composed by a caller—either an outside caller or a OnePoint Messenger subscriber—who does not know the mailbox number of the recipient. This DBN name query allows a caller hear the name of the recipient to verify addressing before depositing the message in the recipient's mailbox. For details on configuring DBN, see the section "Dial by Name: This tab is replaced by the Dial by Name page. See "Dial by Name" on page 117." on page 145 in Chapter 3 of this guide.

- A routing address that is a telephone extension is presented to OnePoint Messenger by the PBX. For example, a fax DID number (a number with no fax machine attached that routes the fax to the user's mailbox) would not ring anywhere. The directory query allows the fax to be deposited in the user's mailbox.

- **Query by account name**: When the caller enters only a mailbox number, DAS provides the account name and greeting to the TUI.

DAS Functional Details

DAS provides fast address lookup to telephone callers by caching mailbox information on the Telephony Server. It retrieves this information periodically from Microsoft Exchange. This process is called synchronization (see below). The mailboxes included in the DAS cache are:

- Exchange subscribers who have OnePoint Messenger service levels above "None"

- System distribution lists that have been similarly enabled (see Chapter 2, "Administering Unified Messaging on Microsoft Exchange" on page 53.)

- Custom Recipients that have been similarly enabled. For details on Custom Recipients, see "Custom Recipient" on page 64 in Chapter 2.

Because Microsoft Exchange can aggregate directory information from multiple Exchange Sites through site connectors, DAS can provide that extended mailbox information to callers through the OnePoint Messenger TUI. This allows users calling their mailboxes to create and address messages to users on other sites, either by entering the users' mailbox numbers or by using Dial By Name (DBN).

DAS also provides telephone extension information to the Automated Attendant so that callers can call local users. DAS excludes from the Automated Attendant the telephones of users on remote sites.

DAS Directory Synchronization

In order for DAS to accomplish its caching function, it must synchronize its directory with the Microsoft Exchange directory. Currently, that can be accomplished in three ways:

1 When you install Telephony Server, DAS is automatically installed as a Telephony Server component. During the installation, an opportunity is provided for you to start directory synchronization manually using the Directory Initialization program. See below (page 231) and see Chapter 4 of the *OnePoint Messenger Installation Guide*.

2 All necessary synchronizations from Exchange to DAS subsequent to installation are invoked automatically. The timing of the synchronization depends on what changes you make on Exchange, as detailed here and summarized in Table A-2:

- **Addition of a new OnePoint Messenger user**: Exchange alerts DAS immediately.

- **Modifications to cached telephony data:** (for example, spoken greeting, mailbox number, telephone number, or fax number) Exchange alerts DAS immediately.

- **Modifications to a user's name and spoken name**: DAS polls Exchange for these changes every ten minutes, and at every reboot and service restart.

- **Deleted users**: Users are deleted from Exchange in one of two ways.

- Users who are completely deleted from Exchange are removed from the DAS cache at 2:00 A.M. Consequently, until the next 2:00 A.M. update, callers could create intentional messages for the deleted user, and the messages would not be delivered. Warnings would be deposited in the Event Log.

- The second way to remove a user from DAS is to reduce the user's OnePoint Messenger permissions to None in Exchange. This change in status is reflected in DAS immediately.

3   You can manually invoke synchronization, but only when necessary and when no call processing is occurring on Telephony Server. See the next section.

Table A-2 Cache Update Timing

Immediate Update	During Poll Cycle (default every 10 minutes)	During Validation Cycle (default once per day, 1st poll after 2AM)
Changed spoken greetings	Changed spoken name from GUI	UM licenses
All changes from UM Tab in Exchange Admin (tel#, MB#, fax DID#)	First name and last name from "General" Tab in Exchange Admin	Users deleted from Exchange Admin
Adds, changes to the level of UM assigned to the subscriber		

Starting Directory Synchronization Manually

Because both the DAS caching service and synchronization run automatically as part of Telephony Server, there should rarely be a need to manually invoke synchronization.

Since manual synchronization is a full rebuilding of the database, forcing synchronization after installation should be necessary only for a system failure (for example, loss of the hard disk). One case is when the Exchange Server is down at the time that DAS starts its full synchronization; in that case, the Telephony Server directory will be erased. If you are intentionally taking the Exchange Server off-line at 2 A.M., you can stop the synchronization by also stopping telephony services. See "Operating the Telephony Server" on page 166 in Chapter 5. If the Exchange Server goes down inadvertently, and

DAS erases the directory, stop telephony services when the Exchange Server returns to service and run the synchronization manually.

To start directory synchronization manually:

1 To manually synchronize the directories, you must first stop Telephony Server services, as described in "Operating the Telephony Server" on page 166 in Chapter 5.

2 To start **Directory Initialization**, you can do so by double-clicking its icon in the OnePoint Messenger desktop program group, by accessing it from the Utilities node of TS Admin or from the Windows Start menu:

Click the Windows **Start** button**,** then choose **Programs**, then **OnePoint Messenger**, and then **Directory Initialization**.

When Directory Initialization starts, a simple dialog appears, as shown in Figure A-1.

Figure A-1   Directory Initialization

3 Click **Start** to start directory synchronization between Exchange and the Telephony Server,

or click **Cancel** to quit. Cancel is unavailable after the synchronization process begins.

With a proper installation and correct Exchange profile, a progress bar will fill the blank window as synchronization proceeds. When the update has completed, an announcement appears, as in Figure A-2 below.

4 When the synchronization concludes successfully, a status message box appears like that in Figure A-2.

Figure A-2   Directory Synchronization Status Message

The results announcement shown in Figure A-2 means:

- "Accounts examined: 2027" = 2027 Exchange accounts were reviewed.

- "Created telephony access: 2027" = Of the 2027 accounts, 17 needed to be replicated to Telephony Server.

- "Account not telephony enabled: 0" = No account without telephony permissions existed, so all were replicated.

- "Failed (possible due to violating DB rules): 0" = All subscribers were accepted and were successfully replicated.

  If "Failed" appears greater than zero, examine the Windows NT application Event Log.

Troubleshooting DAS

OnePoint Messenger Trace Manager (see "Using OnePoint Messenger Trace Manager" on page 195 in Chapter 7) can help you identify DAS problems. In Trace Manager, you can set the severity level of the event messages that DAS sends to the NT Event Log.

DAS uses the Exchange profile used by PONG, which is automatically created at installation. If both PONG and DAS are not running, the Exchange transport profile on the Telephony Server could be the problem. See the test and manual configuration of an Exchange profile described in the section "Troubleshooting PONG Client Installation" on page 316 of Appendix F in this guide.

Appendix B. Technical Resources

This appendix contains lists of information resources for OnePoint Messenger and supporting products. It contains these sections:

Section	Page
OnePoint Messenger Documentation Resources	**235**
Third-Party Information	**237**

OnePoint Messenger Documentation Resources

OnePoint Messenger is directly supported by eight books, five sets of online help, and two sets of electronic training cards, as listed below.

The books included on the OnePoint Messenger software CD-ROM are:

- *OnePoint Messenger Administrator Guide*
- *OnePoint Messenger Getting Started Guide* (for turnkey systems)
- *OnePoint Messenger Installation Guide*
- *OnePoint Messenger User Guide*
- *OnePoint Messenger/SX-200 Integration Guide*
- *OnePoint Messenger/SX-2000 Integration Guide*
- *OnePoint Messenger/Fujitsu 9600 Integration Guide*
- *OnePoint Messenger/Lucent Integration Guide*
- *OnePoint Messenger/NEC Integration Guide*
- *OnePoint Messenger/Nortel Integration Guide*

The online help systems are:

- **OnePoint Messenger Administrator online help**: On the Telephony Server, the file named Admin.chm supports all programs that appear in the OnePoint Messenger program group, except the line card configuration programs. In addition to the help in Admin.chm for TTS Dictionary Editor, it calls the help file cgrm_en.hlp. WinFT, Show N Tel, and the line card programs each call their own help systems.

  Cvumail.hlp is a copy of Admin.hlp. It is placed on the Exchange Server to support the OnePoint Messenger extensions to Exchange.

  There are several ways to access the administrator's online help:

  - To access context-sensitive help topics in the administration help, click the **Help** buttons in the OnePoint Messenger server applications. Also, some applications, such as SVT and SST, have menu item-level contextual help that you can access by highlighting the menu item, then pressing [F1].

  - The **Help** menus within System Validation Tool and System Service Tool access general help topics for those tools. The online help contains descriptions of all buttons, commands, and fields for all of the OnePoint Messenger server applications supported in Admin.hlp. WinFT and the SNT Runtime applications also have contextual links to their own help systems.

  - The administrator "training card" help contains a link to the summary topic in Admin.hlp (see the training-card description below.)

- **OnePoint Messenger for Outlook Help**: Installed on client systems, it supports the OnePoint Messenger components installed through the OnePoint Messenger client installation. This includes the OnePoint Messenger components added to Microsoft Outlook and Unified Fax Printer. The file name is outwin.hlp. The help adds "What's This?" extended balloon help for OnePoint Messenger commands and buttons and context-sensitive help links from all forms. The online help contains descriptions of all buttons, commands, and fields.

  To access online help for OnePoint Messenger on Outlook, choose **Unified Messaging Help** from Outlook **Help** menus and from the **Help** button on the **Unified Messaging** tab. A link to the

help is also in the Outlook training card stack (see the training-card descriptions below).

- **WEB Client Help**: Supports WEB Client for Web access to Exchange. WEB Client Help is a group of HTML pages and the WebHelp™ Java applet from Blue Sky Software. The applet is set up to download to the client PC when the user clicks on Help. Microsoft's Outlook Web Access has a separate help system, also located on the Exchange server.

There are two training card sets:

- **OnePoint Messenger Administrator Training Cards** are located in the OnePoint Messenger directory on the Telephony Server. They cover the basic tasks of managing Telephony Server and OnePoint Messenger on Exchange. The last task item in the list is actually a link to the comprehensive help system.

- **OnePoint Messenger Client Training Cards** are located in the OnePoint Messenger Client directory. As with the Administrator Training Cards, the last item in the topic list is a link to the full client help system.

OnePoint Messenger Administrator help and training cards are installed on both the Telephony Server and Exchange Server. On the Telephony Server the help is in the file admin.hlp. On the Exchange Server, the same help file is named cvumail.hlp.

Third-Party Information

This section contains notes about information sources to vendors of components that support OnePoint Messenger. Those vendors include:

OnePoint Messenger bundles software products from several vendors, some of whose contact information is provided in this appendix so that you can get current product information, including:

- Inprise: Borland Development Environment (BDE)

- Brooktrout Technology/Brooktrout Software: Show N Tel

- Intrinsyc: WinFT ("Watchdog")

- Lernout and Hauspie: TruVoice Text-to-Speech

- Metasoft: ImageMaker, ImageMaker Viewer

- Microsoft: ADO 2.1, Microsoft Management Console, Microsoft Message Queue

  Microsoft also provides software that is critical to the OnePoint Messenger unified messaging system, including various versions of the Windows operating system, Exchange, Outlook, Internet Information Server, and Internet Explorer.

- Seagate: Crystal Reports

- Vintra: Message Transfer Agent (MTA)—VPIM gateway

Other products that complete the OnePoint Messenger unified messaging environment come from PC and PC peripheral vendors and :PBX vendors and line card vendors.

- PBX vendors:
  - Fujitsu
  - Lucent
  - Mitel
  - NEC
  - Nortel

- "Call pickup" box between PBX and Telephony Server:
  - Calista: PBXLink 48

- Line card vendors:
  - Brooktrout Technology (fax cards)
  - Mitel
  - Natural MicroSystems

Brooktrout Technology

Brooktrout Technology supplies the Show N Tel 4.4 software that is the development environment for some applications in OnePoint Messenger. Show N Tel Runtime is included on the OnePoint Messenger CD-ROM and installed with OnePoint Messenger in its own directory. It has its own online help. In addition, the OnePoint Messenger CD-ROM contains Brooktrout Technology's *Show N Tel System Administrator Guide* in PDF format, saved as sntmgrguide.pdf.

OnePoint Messenger customers do not need to be concerned with independently tracking SNT upgrades or documentation updates,

because Baypoint Innovations will provide all relevant SNT upgrades and updates to OnePoint Messenger customers.

However, while the OnePoint Messenger documentation includes information that is enough for you to manage the installation and configuration of Show N Tel components, Brooktrout produces development software tools and publishes books that can help you to improve your use of OnePoint Messenger software. The Show N Tel development kit is included on the OnePoint Messenger CD-ROM, but is not part of the licensed functionality that is installed with OnePoint Messenger. For details on licensing, contact Brooktrout Technology.

Show N Tel books from Brooktrout Technology include:

- *Show N Tel Developer's Guide*

- *Show N Tel System Administrator Guide* (included on OnePoint Messenger CD-ROM, in PDF format)

- *Getting Started with Show N Tel*

Brooktrout also provides the only fax boards that OnePoint Messenger supports. The relevant book is *TR114 Digital Hardware Guide*.

For updated information on Brooktrout Technology products, see their product Web page:

http://www.brooktrout.com/p_info/product_med.html

Calista

Calista provides the PBXLink 48 external "call pickup box" that provides calling line data from Nortel and Lucent PBXs in SMDI format to the OnePoint Messenger Enhanced Data Link software running on the Telephony Server. The *User Guide for PBXLink and PBXLink ISA* for the PBXLink 48 ships with the PBXLink 48 shipped with turnkey Telephony Servers bound for sites using Nortel or Lucent PBXs. You can also download that guide from the Calista website. The website calls it "PBXLink ISA 24", and it downloads as isapbx.ZIP. The URL is:

```
http://www.calista.com/support/tsvoicemail/
ts_vmanual.html
```

Microsoft

Microsoft provides several essential software components for creating the OnePoint Messenger unified messaging environment, includ-

ing Windows operating systems, Exchange Server, Internet Information Server, and Microsoft Outlook. OnePoint Messenger installers and administrators need to both understand Microsoft software and keep abreast of developments.

Specifically, you are expected to have passed the Microsoft Certified Systems Engineer (MCSE) tests for Windows NT Server 4.0 and Exchange Server. If you provide Web access to Exchange, you should passed the MCSE tests for Internet Information Server 4.0. There are several book publishers that publish a series of books on these subjects pursuant to MCSE certification, including New Riders and Sybex. The Microsoft URL covering MCSE certification is:

http://www.microsoft.com/mcp/certstep/mcse.htm

While the OnePoint Messenger product support team will endeavor to keep you informed of the status of OnePoint Messenger support of Microsoft software upgrades and of relevant information updates, you should not rely solely on this source. Here are links to relevant URLs as they exist on the date of the publication of this book:

- **Windows NT Server 4.0**: http://www.microsoft.com/NTserver

  Windows NT Server 4 Service Pack 5:

  http://www.microsoft.com/ntserver/nts/downloads/default.asp#RecommendedUpdates

  or

  http://technet.microsoft.com/reg/download/service/default.htm

  Windows NT Server 4 Option Pack 4:

  http://www.microsoft.com/technet/resource/downloads/service/NT4OP.htm

- **Microsoft Exchange**:

  http://www.microsoft.com/exchange/default.asp

  Microsoft Exchange Getting Started book

  Exchange Server 5.5 Service Pack 2:

  http://www.backoffice.microsoft.com/downtrial/default.asp

  or

  http://www.backoffice.microsoft.com/downtrial/moreinfo/ex55sp2.asp

Microsoft Exchange Move Server Wizard:

http://backoffice.microsoft.com/downtrial/moreinfo/
Ex55sp1wizard.asp

The Microsoft Exchange Move Server Wizard helps you:

- Move a Microsoft Exchange Server between existing sites and organizations.

- Move a Microsoft Exchange Server to create a new site or organization.

- Move a Microsoft Exchange Server to a new site in an existing organization.

- Merge existing Microsoft Exchange Server sites and organizations.

NOTE: You must have Exchange 5.5 SP1 or 2 installed in order to run the Exchange Move Server Wizard. Also, our testing of the wizard indicates that you must first uninstall all the connectors and back up all public folders. Then, after running the wizard, you must manually recreate all the public folders and restore their data from the backup. Then recreate all client profiles.

- **Microsoft Outlook Assistance Library**:

  http://www.microsoft.com/outlook/

  http://www.microsoft.com/com/dcom/dcom1_2/download.asp—DCOM for Win95

  http://www.microsoft.com/products/prodref/118_sup.htm

- **Internet Information Server**:
  http://www.microsoft.com/products/prodref/534_ov.htm

- **Internet Explorer:**
  http://www.microsoft.com/windows/ie/download/default.asp

- **DCOM95:**
  Install DCOM95 1.2 or later on Windows 95 clients. The current DCOM download URL, which also contains a DCOM update for Windows 98 is:

  http://www.microsoft.com/com/resources/downloads.asp

Another source for service packs are the service pack CD-ROMs that are part of the Microsoft MSDN subscription.

Natural Microsystems (NMS)

For information on NMS products, see their website:

- Home page:

  http://www.nmss.com/nmss/Nmsweb.nsf/nmshomeview/
  nmshome

- Products at a Glance:

  http://www.nmss.com/nmss/Nmsweb.nsf/product/prodglance

- Support:

  http://naturaledge.nmss.com/

Appendix C. Event Messages

This appendix contains a short overview of the use of the Windows NT Event Viewer and Event Log. It provides interpretations of messages sent to the Event Log by OnePoint Messenger subsystems. This appendix includes the following sections:

Section	Page
Using the NT Event Viewer	**243**
Using OnePoint Messenger Event Codes	**247**

Using the NT Event Viewer

Each OnePoint Messenger subsystem logs failures, warnings, and informational messages, as well as audit successes and failures, to the standard Windows NT Event Viewer in the Application Log. The messages are of two general types—event messages and trace messages. Event messages note application successes and failures, and they are generally referred to as "error codes".

You can turn on tracing in Trace Manager. Trace messages note transitions within program states. Some trace messages will note processing events that also generate error messages. OnePoint Messenger trace messages are identified by a leading asterisk (*) in the Category field of Event Viewer. For details on tracing, see "OnePoint Messenger Trace Manager Overview" on page 192 in Chapter 7.

Entries in the Event Log are called "log records." You can view the current event logs of other Windows NT systems on the network, so you can monitor the Telephony Server remotely. However, not all event details are available remotely, as discussed below.

To view OnePoint Messenger records in the NT Event Log:

1   Click the Windows **Start** button, choose **Programs**, then **Administrative Tools**, and then **Event Viewer**.

2   From the **Log** menu in Event Viewer, choose **Application**.

Figure C-1 shows an example of events logged by OnePoint Messenger in the Event Viewer of a Telephony Server.

Figure C-1   Event Viewer

Event Viewer Fields (Columns)

Date/Time: All OnePoint Messenger log records have a date and time stamp. An icon to the left of the Date field in each record indicates the severity of the event—Informational, Warning, Error, Success Audit, or Failure Audit. Choose **View** from the **Filter** menu to select what types of events to view.

Source and **Category:** The **Source** column shows the module (software application). The **Category** column shows the subsystem of the module. "Source" and "Category" mean the same thing in both NT Event Viewer and OnePoint Messenger Trace Manager, so you can use NT Event Viewer to easily filter OnePoint Messenger trace messages, which are identified by a leading asterisk in the Source field, such as "*Directory".

Event: The Event column contains an application-defined event code, as detailed below.

For more detail regarding a specific log record in Event Viewer, open the Event Detail window, as shown in Figure C-2.

To open the Event Detail window:

Double-click the listing for which you want details

or

Highlight the listing, then choose **Detail** from the **View** menu.

To inspect details for a continuous series of records without closing and reopening the Event Detail window:

In the **Event Detail** window, click the **Next** button.

Figure C-2   Event Detail Showing Successful Audit
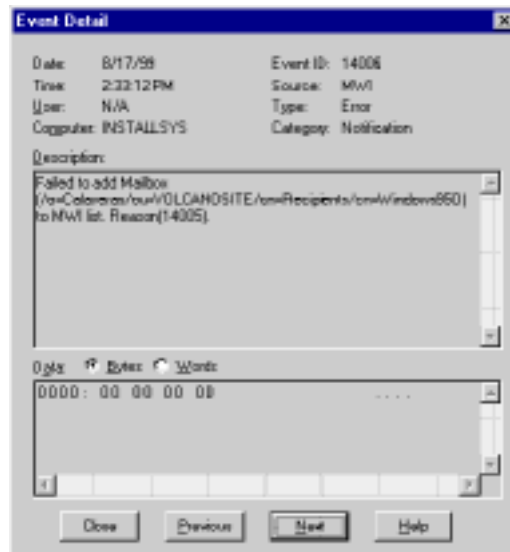
The **Description** pane in the **Event Detail** window contains a text message explaining the reason for the entry in the log. Figure C-2 shows the details for the event highlighted in Figure C-1. However, if you save the Event Log, then open it on another computer that does not have the Telephony Server applications installed, there will be fewer details available. Saved as a text file, no details are available. Saved as an ".evt" file, an event detail typically appears in the form "The description for Event <number> in Source [<name>] could not be found...." Events that contain a variable (noted by "%" in the sam-

ple tables below) display the variable with the text. "It contains the following insertion string(s): <insertion string>."

The text in Figure C-2 is:

```
"Failed to add Mailbox /0=Calaveras/ou=Volca-
nosite/cn=Recipients/cn=Windows950) to MWI list.
Reason (14005)."
```

The data in parentheses is the Exchange Site information. 14005 is another error code, which is the error message in the log that precedes this one. Generically, the text for 14005 is

```
"Unable to access Mailbox (%1). MWI will not be
available for this mailbox.%8."
```

The placeholder "%1" here gets replaced by the extended "Distinguished name" Exchange name above for the "Windows950". account. "%8" gets replaced by "Unspecified error." The message associated with 14005 is

```
"Unable to access Mailbox (%1). MWI will not be
available for this mailbox.%8."
```

Specific error data is reported in the **Data** pane below it. Generally, this data is only useful to the programmer of the module. If you contact Baypoint Innovations Support, pass Data information to them. The two likely causes for error 14005 are that Exchange is down or that the user has been deleted recently, and DAS has not yet updated its cache.

Figure C-3 is an example of an audit failure. Notice that **Type** is "Failure Audit." Audit records are usually concerned with security states of the process. An audit message like the one shown here can help an administrator know that a user is having login problems, which allows the administrator to contact the user regarding loss of a password or a possible break-in attempt.

Figure C-3   Event Detail Showing Failed Audit
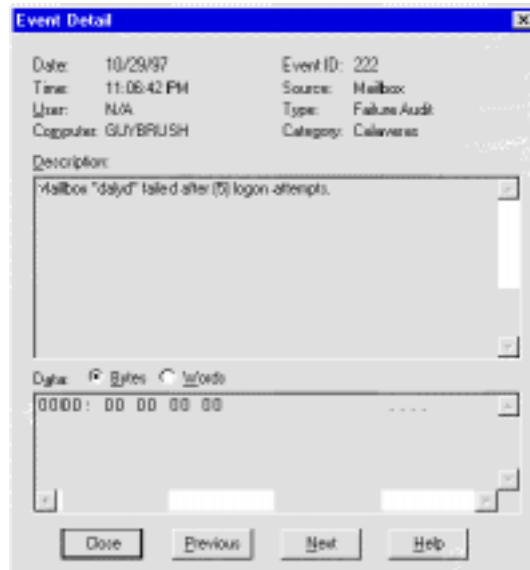
Dealing with Large Amounts of Event Log Information

The amount of information may be so overwhelming that it can be difficult to quickly identify the critical failure. One way to reduce the information set is to filter out the informational events temporarily from the Event Viewer.

To remove informational events from the Event Viewer:

1   From the **View** menu, choose **Filter Events**.

2   From the **Filter** dialog, deselect **Information** from the **Types** group.

3   You can filter events even more by selecting the date range and by selecting the desired Category and/or Source from the **Category** and **Source** fields in the **Filter** dialog.

Using OnePoint Messenger Event Codes

OnePoint Messenger is comprised of many subsystems, each of which sends both event messages and trace messages to the NT Event Log and Viewer. Because of the complex interactions of the processes, it can be difficult to conclude the fundamental cause of the problem simply from one symptom. Therefore, OnePoint Messenger error messages often identify, in very granular detail, which operation

has failed, not the cause of the failure. Messages tend to be more explanatory in cases where the symptom is indicative of something that you can fix, such as a network problem.

Some operational errors may only occur in certain infrequent occasions, possibly even with only a few users. For example, a user may move his or her computer to another NT domain that does not have a two-way trust relationship with the NT domain in which the Telephony Server resides. All of his OnePoint Messenger functionality should continue to be operational, except that he will lose the ability to establish a Call-Me session.

Part of your role as the systems administrator in using the Event Viewer is to gather the appropriate trace and error messages to supply to your product support specialists. For each error message, they will need to know the values that appear in its Source, Category, Event ID, and Description fields. The Data field is also useful if the value is other than zeros.

Because the context of the error is usually important to understanding the problem, allowing support personnel to view the whole Event Log is valuable. The simplest and best way to allow offsite support remote access to your Telephony Server is with a modem and a remote access program such as pcAnywhere. Alternatively, you can save and e-mail the Event Log in its native ".EVT" format so that offsite support can open the log in a remote Event Viewer.

To save and send the log:

1   From the **Log** menu of the Event Viewer, choose **Save As**.

2   Use the default ".EVT" save format.

3   Send the log as an e-mail attachment.

Introduction to the Event Code Tables

The event codes in the tables below are samples of those generated by the Telephony Server processes, such as the Directory Access Service, Post Office, and the TTS process.

Event ID: The column in the table below labelled Event ID correlates to the Event column in the NT Event Viewer.

Description: Those OnePoint Messenger server errors that you as an administrator may be able to correct show more detailed explanations in the Event Log, as listed in the Description field in the Event Viewer, reproduced here in the Description column in the tables.

Percent (%) signs: A OnePoint Messenger event Description that has a percent sign followed by a number indicates where a more extensive description will appear in the Event Viewer. "%8" will be replaced by a system error message, such as noting an incorrectly registered process. The other numbers following percent signs can be replaced by a variety of sources, mostly useful only to the designer.

For example, in Table C-2 below, the Description of Event ID 2005 is:

```
"Logon failed with profile(%1).%8. Make sure
server referenced in Exchange profile is same
server Administration account has rights on." In
the Event Viewer, that statement might appear as
"Logon failed with profile(turnw). DCOM failure.
Make sure server referenced in Exchange profile
is same server Administration account has rights
on."
```

"(turnw)" is a user account name in parentheses. "DCOM failure" is a Microsoft DCOM protocol failure, probably associated with network problems.

Post Office (PONG) Event and Trace Message Table Examples

Post Office Network Gateway (PONG) is a Telephony Server process. PONG is discussed in Appendix F, starting on page 297.

PONG trace messages are in Table C-1 and event codes ("error codes") are in Table C-2. The value displayed for PONG in the Category field of the Event Viewer is "Post Office" or "*Post Office" with an asterisk for trace messages. The Source field will display one of three sources—PO Server, PO Client, or PO Monitor—depending on the object class that generates the message.

When you read down the event list, you can see messages generated by the Post Office on Telephony Server as it carries out the various possible requests of users accessing their mailboxes from the TUI and then getting and sending mail and setting preferences. Trace messages detail the running of processes.

Table C-1 PONG Trace Messages

Event ID	Description
2090	Command line arguments 1(%1), 2(%2), 3(%3), 4(%4).

Table C-1 PONG Trace Messages

2091	Entering Open, profile(%1).
2092	Playback preference (%1), Service enabled(%2).
2093	Verified Exchange Server running on (%1), service(%2), current state(%3).
2094	Verified Exchange Service running on (%1), current state(%2).
2095	Logon successful.

Table C-2 Post Office (PONG) Event Codes

Event ID	Description
2000	Invalid argument to %1 %2 %3 %4 %5 %6 %7
2001	Bad Pointer in %1
2002	Internal list not initialized.
2003	List index out of range.
2004	Out of memory in %1
2005	Logon failed with profile(%1). %8. Make sure server referenced in Exchange profile is same server Administration account has rights on.
2006	Unknown error in %1
2007	Close failed with error(%1)
2008	Submit Message failed: Name(%4)
2009	Bad Password: Name(%1)
2010	Get Mailbox Failed: Name(%1), Error(%2)
2011	Get Summary failed(%1)
2012	Get First Message failed with error(%1)
2013	Get Next Message failed with error(%1)
2014	Get Previous Message failed with error(%1)
2015	Delete Message failed with error(%1)
2016	Create Message failed with error(%1)

Table C-2 Post Office (PONG) Event Codes

Event ID	Description
2017	Set Subject failed with error(%1)
2018	Set Body failed with error(%1)
2019	Get Sender failed with error(%1)
2020	Get Subject failed with error(%1)
2021	Get Body failed with error(%1)
2022	Get Time failed with error(%1)
2023	Get Type failed with error(%1)
2024	Get Attachment Info failed with error(%1)
2025	Create failed with error(%1)
2026	Add Recipient failed with error(%1)
2027	Address Resolve failed on: %1
2028	Address Resolve Ambigous on: %1
2029	Send failed with error(%1)
2030	Reply failed with error(%1)
2031	Forward failed with error(%1)
2032	Get Attachment failed with error(%1)
2033	Add Attachment failed with error(%1)
2034	Create Instance failed with error(%1)
2035	CoRegister Class Object failed. %8
2036	Unregister Class failed. %8
2037	Register Server failed.
2038	Convert CLSID to String failed
2039	No messages in mailbox
2040	Get Options failed with error(%1).
2041	No parts found in Message.
2042	End of parts list.

Table C-2 Post Office (PONG) Event Codes

Event ID	Description
2043	Set Options failed with error(%1).
2044	Get Password failed with error(%1).
2045	Set Password failed with error(%1)
2046	Reply All failed with error(%1)
2047	Get Data Stream failed with error(%1).
2048	Get Data String failed with error(%1).
2049	Get Embedded Message failed with error(%1)
2050	Setting sort order failed with error(%1).
2051	Advise on Mailbox failed. New mail notifications will not be received.
2052	MAPI Initialization failed. Server may not function. %8
2053	Class Registration failed. Server may not function.
2054	Releasing class failed.
2055	Caught exception in service cleanup.
2056	Caught exception in service initialization.
2057	Get User Options failed with error(%1).
2058	Set User Options failed with error(%1)
2059	Access to Post Office Initialization data failed. Server will not function properly.
2060	Get recipients failed with error(%1).
2061	Get first part failed with error(%1).
2062	Get next part failed with error(%1).
2063	Get prev part failed with error(%1).
2064	New mail arrived failed with error(%1).
2065	Exception in main(%1).
2066	Null session handle. %1
2067	Query Interface failed.%1

Table C-2 Post Office (PONG) Event Codes

Event ID	Description
2068	Creation of Store EID failed. %8
2069	Open message store failed. %8
2070	Open address book failed. %8
2071	Unknown Error in Release.
2072	Invalid playback preference. Licensed for(%1), requesting(%2).
2073	Get User Statistics failed with error(%1).
2074	Set User Statistics failed with error(%1).

Table C-3, below, contains Message Waiting Indicator event messages. The NT Event Viewer displays "Notification" in the Category field, and "Message Notification," "MWI," or "AdviseSink" in the Source field. A common error is Event ID 14031, which appears in Figure C-1. It is caused by the inability to turn on Message Waiting on an individual's telephone. .

Table C-3 Message Waiting Indicator Log Messages

Event ID	Description
14001	Bad Pointer
14002	Advising on Mailbox (%1) failed. %8
14003	Validating Subtree on Mailbox (%1) failed. %8
14004	Unadvise on Mailbox (%1) failed. %8
14005	Unable to access Mailbox (%1). MWI will not be available for this mailbox. %8
14006	Failed to add Mailbox (%1) to MWI list. Reason(%2).
14007	Attach to Directory failed. %8
14008	Directory Initialization failed. %8
14009	Reading Directory failed. %8
14010	Reading Directory Next failed. %8
14011	Uninitialize Directory failed. %8

Table C-3 Message Waiting Indicator Log Messages (Continued)

Event ID	Description
14012	Finding Inbox failed for mailbox(%1). MWI will not operate properly for this user. If this user has been deleted, stop and restart the MWI service. %8
140132	Open Entry(%1) failed. %8 MWI will not operate properly for this user.
14014	Get Contents Table failed(%1). %8 MWI will not operate properly for this user.
14015	Set Columns failed(%1). %8 MWI will not operate properly for this user.
14016	Restrict failed(%1). %8MWI will not operate properly for this user.
14017	Get Row Count failed(%1). %8 MWI will not operate properly for this user.
14018	Set MWI timer failed. %8 MWI will not operate properly.
14019	Set Refresh timer failed. %8 MWI will not operate properly.
14020	Conga request failed. %8
14021	Conga initialization failed. %8
14022	Exception detected in OnNotify. Reason(%1). Contact Administrator.
14023	Exception in timer procedure. %8
14024	Connecting to Directory Sink failed.
14025	Creating Directory Server Object failed.
14026	Error (%1) in Test for light off.
14027	Adding user (%1) failed. Reason(%2).
14028	Deleting user (%1) failed. Reason(%2)
14029	Modifing user (%1) failed. Reason(%2).
14030	User (%1) not found.
14031	OpenEntry failed on(%1). Reason(%2).
14032	Exception in Main(%1).
14033	Exception in worker thread(%1).

Table C-3 Message Waiting Indicator Log Messages (Continued)

Event ID	Description
14034	Exception in Initialize(%1).
14035	Exception in Cleanup(%1).
14036	Failed to create worker thread. %8.
14037	Call to IsLocalUser failed. %8.
14038	Putting Search Entry failed. %8.
14039	Get User name failed. %8.

Appendix C, Event Messages

Appendix D. Fax, Greetings, SDR, and Automated Attendant

This appendix augments the instructions in Chapter 3 for creating fax documents, greetings, and Single Digit Routing (SDR) menus, and setting up the Automated Attendant and Fax on Demand services. It contains worksheets that you can use to create prompts, SDR tables, and Fax on Demand lists. This appendix includes these sections:

Section	Page
Organizing Fax Documents	**258**
Designing Greetings and Prompts	**259**
Designing Single Digit Routing Menus	**265**
Configuring the Automated Attendant Service	**279**
Configuring the Fax on Demand Service	**283**

This appendix is organized in the recommended sequence for creating greetings, fax documents, and SDR menus in order to set up the Automated Attendant and Fax on Demand services. In summary:

1   First, collect the fax documents that you want to provide to callers. The section "Organizing Fax Documents" on page 258 includes a worksheet to help you organize the fax list.

2   Next, record greetings and prompts, including the main, introduction, and help prompts for the Automated Attendant and Fax on Demand services, including prompts to support nested menus, other languages, or for menus used by specific departments. The "Designing Greetings and Prompts" section provides a sample worksheet for planning greetings and prompts.

3   Then, create menus. See "Designing Single Digit Routing Menus" on page 265.

4   Finally, configure the Automated Attendant (see page 283) and Fax on Demand services (see page 283).

Organizing Fax Documents

Use Figure D-1 to catalog the documents that you make accessible as faxes to callers. You must convert documents to TIFF or text files.

Figure D-1   Fax Documents Worksheet

<u>**Fax Documents Worksheet**</u>

Sheet #:_____

Document Name:_____

File Name:_____

Source File/Author:_____

Description:_____

Where Used:_____

Document Name:_____

File Name:_____

Source File/Author:_____

Description:_____

Where Used:_____

Document Name:_____

File Name:_____

Source File/Author:_____

Description:_____

Where Used:_____

Document Name:_____

File Name:_____

Source File/Author:_____

Description:_____

Where Used:_____

Fax Documents Worksheet Fields

The meaning of each worksheet field label is probably obvious, except possibly "Where Used", which is for fax document management. You can make a document available as a fax through the Fax on Demand service or through one or more menu options on other SDR menus. When you make documents available through more than one menu option, it becomes more important that you note all those menu options in the Where Used field.

Other possible fields for a fax document worksheet might include who requested that the document be made available as a fax and how long it should remain available.

Rather than reproduce the whole form to show an example, here is how one document might be described on the form:

Figure D-2   Excerpt from Completed Fax Documents Worksheet

Document Name: Product Y2K Readiness FAQ
File Name: TRC1-1-00.txt
Source File/Author: TRC1-1-00.doc/Customer Support (turnw)
Description: Year 2000 product readiness FAQ, 1/1/2000
Where Used: SDR #1 (use until 2/1/00); FoD (use until 3/1/00)

Designing Greetings and Prompts

Use the User Greetings/Prompts node in TS Admin (the Unified Messaging Snap-in to Microsoft Management Console—see "Greetings and Prompts" on page 125 in Chapter 3) to record or import system greetings.

NOTE: "Greetings" includes prompts here. "System" greetings are those used by the Automated Attendant, Fax on Demand, and Message Center services). A sample of a configured Greetings page appears in Figure D-3.

In some circumstances, you can use the recorder toolbar included on the Greetings page to record, but since the sound card is disabled by default on the turnkey Telephony Server in order to preserve IRQ settings, the recorder is not available. In any case, it is generally a better policy to import greetings, because:

•   You can use professional recording talent.

- You can record higher fidelity and more highly edited greetings with a specialized recording program.

- When you import the greeting, you can archive it for later editing or repurposing, such as a base for other recordings or for use on other systems, etc.

Figure D-3   TS Admin, Greetings Page
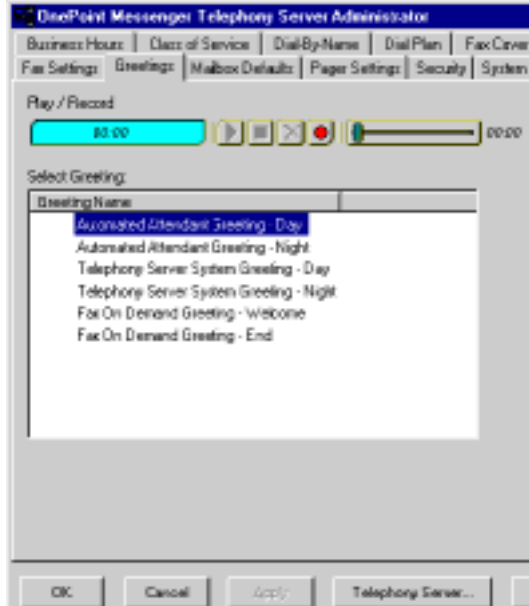
NOTE: In Figure D-3, the note "Greeting/prompt is 9 seconds long" appears above the recorder toolbar to indicate that a prompt nine seconds long has been either imported to the page or recorded through the recorder toolbar. **Record** is selected as the default mode, even when the recording has been imported, as this was.

Using a Telephone to Record a System Greeting

Although you can record with higher fidelity by using a digital sound recording and editing program, you may prefer to use a telephone to record the greeting. In any client account, you can record greetings destined to become system greetings instead of recording the client's Primary, Out-of-Office, Busy, and No Answer greetings. The most convenient client account is the TS Test User account, created in Exchange by the OnePoint Messenger Installation Program for testing purposes. Note which greetings you record in each slot so that you can import the greetings correctly into greetings pages in TS Admin.

To record greetings over the telephone using TS Test User:

1   From a telephone, call your Message Center and log into the **TS Test User** mailbox by entering the mailbox number and password assigned in Exchange to that account.

2   Press the **8-key** on your telephone keypad to access User Options.

3   Press the **4-key** to access Change Greeting.

   a.   Press the **6-key** to access Change Out-of-Office Greeting, the **7-key** to record, the **#-key** to stop, and the **9-key** to save the greeting.

   b.   To record another greeting, press the **7-key** to access Change Primary Greeting, the **7-key** to record, the **#-key** to stop, and the **9-key** to save the greeting

   c.   To record another greeting, press the **2-key** to access Change Conditional Greeting.

   d.   Press the **2-key** to access Change Busy Greeting, the **7-key** to record, the **#-key** to stop, and the **9-key** to save the greeting.

   e.   To record another greeting, press the **6-key** to access Change No Answer Greeting, the **7-key** to record, the **#-key** to stop, and the **9-key** to save the greeting.

4   Using this method, you have been able to record four greetings. You can use the **Change Name** menu to record a fifth greeting.

5   In the \Greetings directory of \Onepoint Messenger, as shown in Figure D-4, you can access the greetings you have recorded after DAS completes directory replication with Exchange.

Figure D-4   Greetings Directory
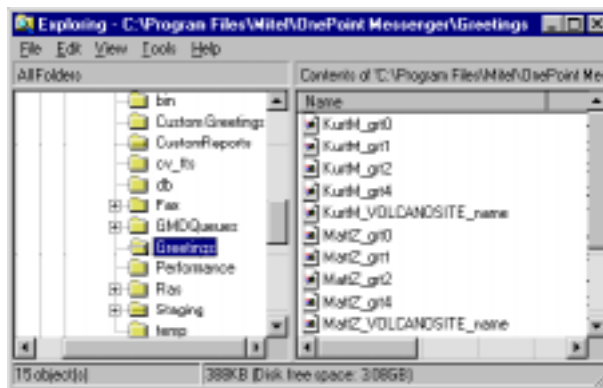
The Primary Greeting appears as "grt0", the Busy Greeting as "grt1", the No Answer Greeting as "grt2", and the Out-of-Office Greeting as "grt4". The name speech appears as "_name".

6   Copy those greetings to the \Custom Greeting folder, then rename them to conform with the use to which you plan to put them, such as "Holiday_SDR_Main", "Thanksgiving_Intro", etc.

7   From an open Greeting page in TS Admin, click **Import**, then navigate to and select one of the greetings in \Custom Greetings. Name the Greeting consistent with the imported greeting.

8   Repeat the import process for each of the recorded greetings.

9   To record more greetings, repeat the complete process, logging into the TS Test User mailbox and recording over the previous greetings.

Using a Greetings Worksheet

Using a worksheet, such as the worksheet shown in Figure D-5, can help you prepare and follow greetings scripts, and plan the use of and organize the greetings. Consider creating a text file with this information and storing it in the Customer Greetings directory of OnePoint Messenger. Save both the text file and the recording using the same name (with .txt and .wav extensions, of course) in that directory, so that you have a visual association of worksheet and recording.

Figure D-5   Greeting/Prompt Worksheet

<u>Greetings and Prompts Worksheet</u>

Greeting/Prompt Name:_____

Description:_____

_____

Prompt Text: _____

_____

_____

_____

_____

Where Used:	Introduction	Main	Help	Key	Menu Description
Menu_____	_____	____	___	___	_____
Menu_____	_____	____	___	___	_____
Menu_____	_____	____	___	___	_____

Filename/path:_____
Talent:_____

Greetings and Prompts Worksheet Fields

Name and Description: The data in these two fields appear in the Result pane of MMC to identify the prompt in the list of prompts under the Greetings/Prompts node.

Where Used: If you create nested SDR menus, some may share prompts. You can note here those menus that use the prompt. Then, if you revise the prompt, you know what menus are affected.

Filename/path: Enter the name and directory path on the Telephony Server where you have placed the recording. Alternatively, you might note the location of an archived version of the recording. OnePoint Messenger supplies the \Custom Greetings directory as a convenient place for you to place your custom greetings for importing into the appropriate Greeting page.

NOTE: After you import a recording into a Greeting/Prompt page, TS Admin (the Unified Messaging Snap-in) saves a copy of the recording in the Telephony Server configuration database. The TUI uses that copy.

Talent: The Talent field is for noting who recorded the prompt, including both the recording service, if used, and the voice talent. You might also include the recording date and whether the recording is part of a set. Knowing the recording set can be especially useful if you need to revise one of the recordings, and you want to have all of the prompts use a consistent voice.

Figure D-6 shows a completed Greeting/Prompt worksheet. It notes that the recording is used by Key 7 in SDR 1, shown in Figure D-16.

Figure D-6   Sample of Completed Greeting/Prompt Worksheet

Greetings and Prompts Worksheet

Greeting/Prompt Name: Directions

Description: Driving directions to main office

Prompt Text: If you are going south on 101, turn off at Bowers. Turn left at the light off the freeway, go over the freeway to the first street, Hichborn. Turn right. At the T intersection with Freedom Circle, turn right, then left at the first curb cut to the office complex. If you are going north on 101, turn off at Great America (Bowers becomes Great America east of 101).

Where Used:	Introduction	Main	Help	Key	Menu Description
Menu 1	____	___	__	7	SDR1: Main Daytime Business Hours menu in English
Menu ____	____	___	__	__	_____
Menu ____	____	___	__	__	_____

Filename/path: \OnePoint Messenger\Custom Greetings\directions.cvv

Talent: Baypoint Innovations -- Cindy

Designing Single Digit Routing Menus

Creating Single Digit Routing menus (SDR) is introduced in "Single Digit Call Routing" on page 136 in Chapter 3. Use the Single Digit Call Routing node, as shown in Figure D-7, to create an SDR menu.

Figure D-7   Single Digit Routing Node in MMC
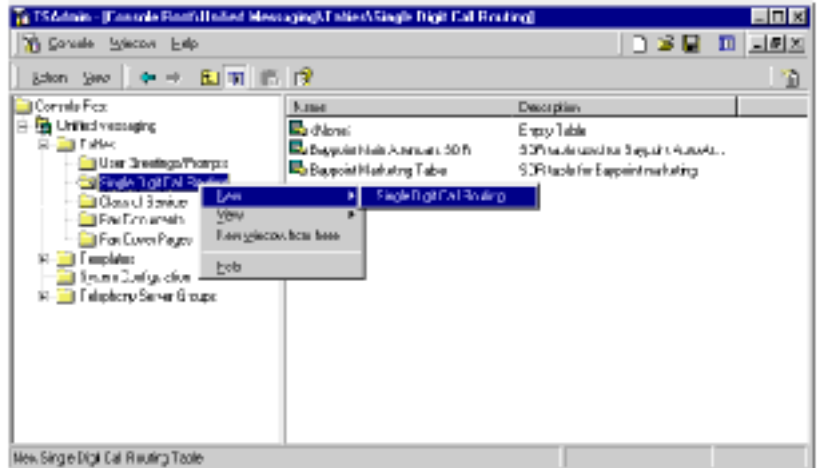
After creating an SDR menu, you can assign it to the Automated Attendant (see "Configuring the Automated Attendant Service" on page 279 in this appendix and "Automated Attendant" on page 111 in Chapter 3) as the primary menu or as a menu accessed from another SDR menu. You can do the same with the Fax on Demand service. See "Fax on Demand" on page 124.

Using the Single Digit Routing Design Wizard

Figure D-8 through Figure D-11 show the Single Digit Routing menu wizard sequence. Figure D-12 and Figure D-13 show the Digit Configuration dialog called by the wizard to configure a digit (key) action. When completed, the wizard stores the menu as a page in the Result pane of MMC for the Single Digit Call Routing node. When you double-click the page to edit it, each of the wizard pages appear as tabs of the completed page.

Figure D-8   Single Digit Routing Menu Wizard, Page 1
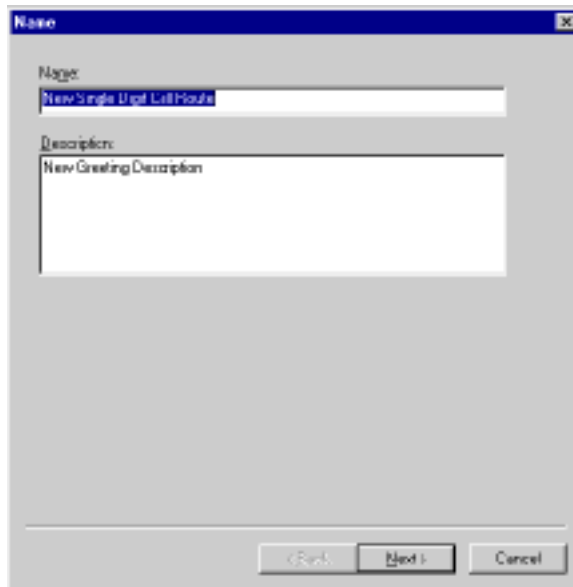
Page 1 of the wizard prompts you for the name and description of the menu. The data in these fields appear in the Result pane of MMC for the page. The page becomes the Name tab of the finished page. An example of the kind of description you might enter here is the circumstances in which the menu is intended to play. You could even enter all of the choices, so that you can quickly see when you need to edit a choice or prompt.

Figure D-9 shows Page 2 of the wizard. The page becomes the Prompts tab of the finished page. Select the Introduction, Main, and Help prompts. The Introduction and Main prompts play when the menu is invoked. To enable the Help prompt, assign a key on the SDR menu to it.

If you have not yet recorded the greeting/prompt that you want to use with this menu, you can finish the setup process without selecting one, save the menu, create the greeting on the Greeting/Prompts node (see "Designing Greetings and Prompts" on page 259), then open the SDR page later to assign the greeting. You would also do this to revise the recording to reflect changes you make in the menu.

Figure D-9   Single Digit Routing Menu Wizard, Page 2
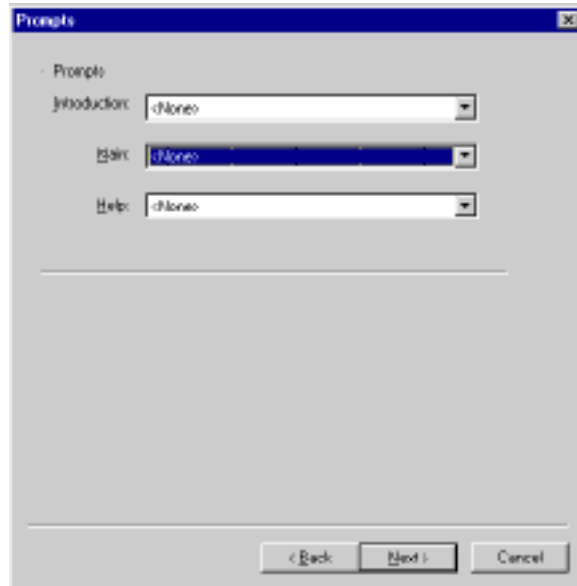
After choosing the appropriate greetings/prompts on the second page of the wizard, click **Next** to access the third page of the SDR wizard, shown in Figure D-10.

Figure D-10   Single Digit Routing Menu Wizard, Page 3
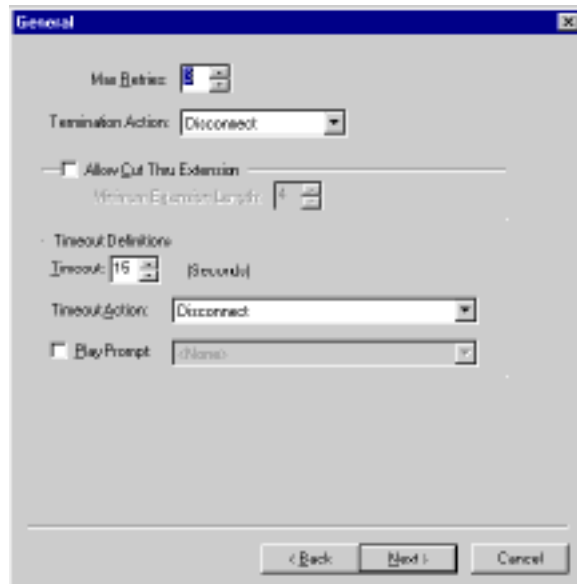
Page 3 of the wizard defines what happens when the caller does not press valid keys. The page is the General tab of the finished page. The fields are:

- **Max Retries:** Click the spin control to set the maximum number of caller keypress retries allowed. You can set this value from -1 to 99. 0 means infinite retries. Default is -1.

- **Termination Action** box: Click the drop-down arrow to select which action to take when the caller exceeds the maximum number of caller keypress retries allowed. Select from:

    - **Hang Up**: The line hangs up, and the PBX sends a dial tone.

    - **Transfer to Operator**: The system transfers the caller to the live operator, if one is available. Otherwise, the operator's phone continues to ring.

    - **Exit**: If the SDR menu is the primary menu (the one played to callers when they call the main number), then the Exit action is the same as Hang Up. If the menu is a subsidiary menu, the main greeting for the parent menu plays.

- **Allow Cut-Through Extension:** This allows the user to interrupt the playing of the prompts by dialing an extension.

- **Minimum Extension Length:** If 'Allow Cut-Through Extension' is checked, click the spin control by this field to set the minimum number of digits that the caller must enter to reach an extension. If the extension string length is less than this value, the entry will be treated as invalid.

- **Timeout:** Click the spin control by this field to set the amount of time in seconds that can elapse with no user input before the application will regard the state as invalid input. The range is from 1 to 180 seconds. 0 means no timeout. The Timeout default is -1.

NOTE: The amount of time that the caller has to press another digit after pressing one digit is controlled on the System Limits page (see "System Limits" on page 142 in Chapter 3). For example, with Cut-Through Dialing enabled, if the caller wants to enter the extension 6111 when there is an SDR menu option 6, the caller has two seconds to press 1 after pressing 6 if the System Timeout is set at two seconds on the System Limits page. Otherwise, the system invokes menu option 6.

- **Timeout Action:** Click the down-arrow to select the type of action that the system will take if the caller presses no keys. The options are, as described above, Hang up, Transfer to Operator, and Exit.

- **Play Prompt:** Check this box to have the system play the prompt selected from the adjacent box for timeout situations. Click the down-arrow by the field adjacent to Play Prompt to select the prompt to play after a timeout occurs.

Figure D-11   Single Digit Routing Menu Wizard, Page 4

Double-click a digit to configure it.
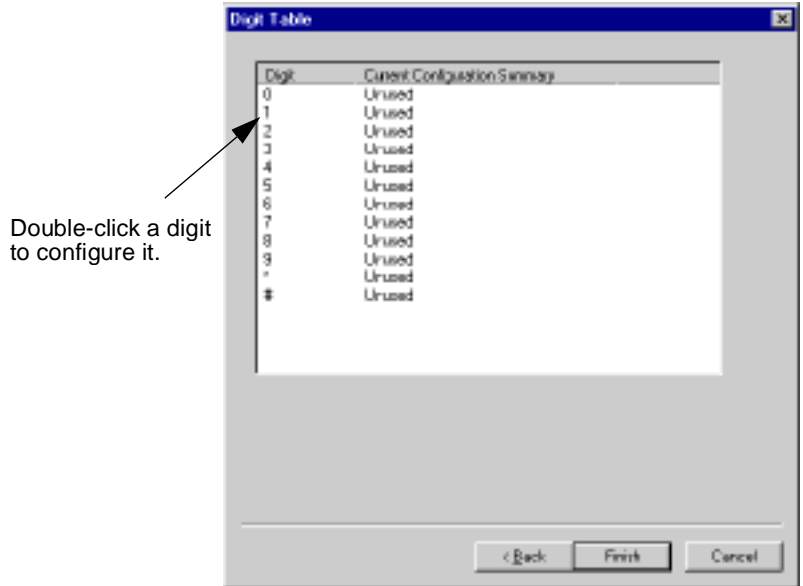
Figure D-11 shows the fourth page of the SDR wizard, which becomes the Digit Table tab of the finished SDR table. It first appears with no digits assigned to actions. To assign an action to a digit, double-click the digit. The dialog shown in the top image of Figure D-12 opens.

Figure D-12   Single Digit Routing Menu Wizard, Digit Configuration Dialog

Operation-specific configuration area (when required)

Drop-down list open, showing possible actions
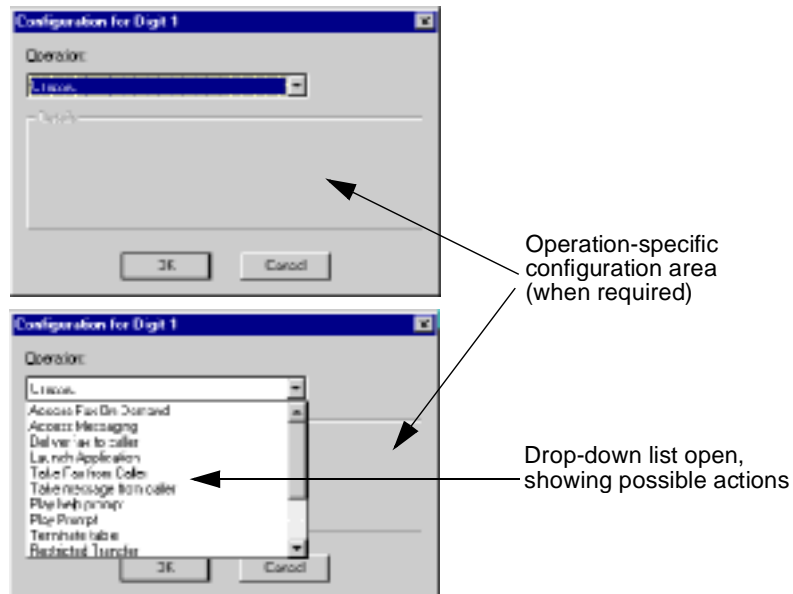
The bottom screenshot in Figure D-12 shows the Operation list open. The list contains the actions that you can assign to a key. When you select an action that requires more configuration, the Details area of the dialog displays fields to enter the extra required configuration information, as shown in Figure D-13.

For example, in the top image of Figure D-13, "Play Prompt" was selected from the Operation list, so a list of available prompts appears in the Details area. In the bottom image, "Take message from caller" was selected, so a Mailbox window appears in the Details area for you to enter the specific mailbox where the message can be sent. Incidentally, this mailbox can be a distribution list mailbox.

Figure D-13 SDR Menu Wizard, Digit Configuration Dialog
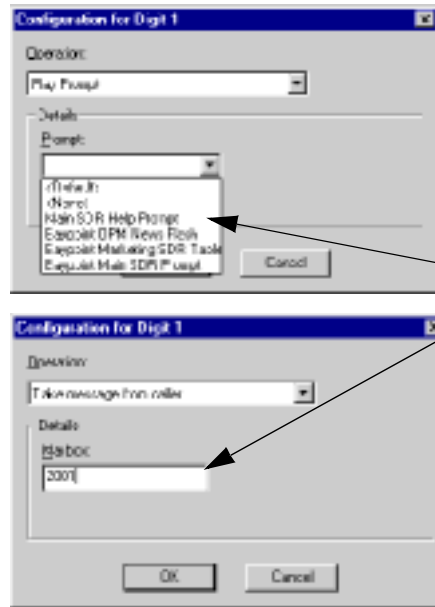
The type of field that appears in this area depends on the digit operation selected in the Operation box.

Unrestricted Transfer

The unrestricted transfer is another digit assignment you can make in an SDR menu. Depending on the restrictions you set through the dial plan (see "Dial Plan" on page 119 of Chapter 3) and on the PBX, the unrestricted transfer might enable a caller to call anywhere in the world through the Automated Attendant. To set up this feature:

1 Open the **Digit Configuration** dialog for a digit in an SDR menu.

2 From the **Operation** list, select **Unrestricted Transfer**. As shown in Figure D-14, the **Details** area changes to display boxes in which you assign the password that callers must enter before making an unrestricted call.

Figure D-14 Configuration Dialog for Unrestricted Transfer

Because the unrestricted call feature can enable callers to make expensive long distance calls, you should consider hiding its availability, such as by putting it in a secondary SDR menu, making it the last digit in the sequence, and not announcing its availability in the greeting.

Since a restricted transfer only allows callers to access the extensions of OnePoint Messenger users serviced by this Telephony Server, you might simply make the Unrestricted Transfer function allow callers to dial non-OnePoint Messenger users in your enterprise. You can do this by setting your dial plan so that the Automated Attendant does not allow callers to dial an outside line, commonly accessed by dialing 9. You can also program the PBX to not allow outdialing from an Automated Attendant port.

Single Digit Routing Design Worksheet

This section provides more detail on the fields used to create Single Digit Routing (SDR) menus, and it provides the Single Digit Call Routing Worksheet (shown in Figure D-15 on page 272) to help you plan your SDR menus. Using a worksheet can be especially useful when you use nested SDR menus and want to maintain records of them. An example of a completed worksheet for the Automated Attendant appears in Figure D-16. An example of a completed worksheet for the Fax on Demand service appears in Figure D-20.

Figure D-15   SDR Routing Table Worksheet
(on following page)

Single Digit Call Routing Table Worksheet

Name:_____Table#:_____

Description:_____

Intro Prompt:_____

Main Prompt:_____

Help Prompt:_____

__Allow Cut-through Dialing   Minimum Extension Length:_____

Maximum Retries:_____

Termination Action: __Disconnect __Exit to Previous Menu __Transfer to Operator

 Timeout:_____seconds

Timeout Action: __Disconnect __Exit to Previous Menu __Transfer to Operator

___Play Timeout Prompt:_____

Digit	Action	Description	Configuration Data
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
*			
#			

Possible actions: Fax on Demand, Messaging, Deliver Fax, Launch Application, Take Fax, Take Message, Play Prompt, Play Help Prompt, Terminate Table, Restricted Transfer, Unrestricted Transfer, Transfer to Operator, Invoke SNT Table, Unused

Single Digit Routing Table Fields

The Single Digit Routing (SDR) configuration fields are:

- **Name**: Name the menu to remind you of its function.

- **Description**: List the menu options (maybe also where you will use it—e.g., as the primary menu in Automated Attendant or where it is accessed as a secondary menu)

- **Introductory Prompt:** If invoked, this is the first prompt played by a menu. It is typically a welcome and an invitation to dial an extension. If you enable **Allow Cut-Through Extension**, your welcome could include "If you know your party's extension, you may dial it at any time."

- **Main Prompt:** This usually lists the menu options. If the user presses an incorrect key or no key, this prompt plays again. It plays if the caller returns to the menu from another operation.

  NOTE: If you create a menu that enables the caller to press a digit to switch to menu options in another language, you could note that option in the other language as part of the Main Prompt. However, be aware that some menu options invoke TUI system prompts. Only one system prompt language can be invoked system-wide at one time, so TUI prompts for only one of the SDR menu languages will be available.

- **Help Prompt:** Play this if the user does not press any key, or if he presses an invalid key. This prompt also plays if a key has been mapped to play the Help Prompt.

- **Allow Cut-Through Dialing:** Allows the caller, by pressing a key, to interrupt prompts. The caller would do this either to dial an extension or to select one of the SDR menu options.

- **Minimum Extension Length:** Minimum number of digits that the caller must press to reach an extension. If the caller presses fewer keys than this value, the entry is treated as invalid; this field is only active if "Allow Cut-Through Extension" is checked.

Termination Action Section of the SDR Worksheet

Max Retries—Click the spin control to set the maximum number of caller keypress retries or time-outs (no keypress) allowed. You can set this value from -1 to 99. 0 means infinite retries. The default is -1.

Determine the action to take when the caller exceeds the maximum number of keypress retries allowed. Here are the options:

- **Disconnect**: The line hangs up. The caller gets a dial tone.

- **Transfer to Operator**: The call transfers to the Operator. If the Operator is not available, the Operator's phone continues to ring.

- **Exit**: If the SDR menu is the primary menu (the first one played to callers when they call the Automated Attendant), the result is the same as Disconnect. If the SDR menu is a subsidiary menu of the primary menu, the Main prompt for the parent menu plays.

The action to take when the caller does not press any key is determined in the Timeout section of the table:

Timeout—Determine the amount of time in seconds that can elapse with no caller input before the TUI replays the menu. After the number of timeouts that you set in Max Retries, the TUI takes the action you specify in **Timeout Action**. The timeout range that you can set is from 1 to 180 seconds. 0 means no timeout. The default is -1.

- **Play Timeout Prompt:** Check this box to have the system play the prompt that you select for timeout situations.

- **Timeout Action:** Select the action that the system takes when the user exceeds the time-out limit more than the number of times specified in Max Retries. The three possible actions are as described above—Disconnect, Transfer to Operator, and Exit.

Digit Routing Table Section of the Worksheet

The Digit Routing table contains three columns:

- **Digit column**: The key that the caller must press to invoke the action described in the next column

- **Action**: The action to invoke when the caller presses the associated digit. For example, if you want to associate the 0-key with transferring to the Operator, as is typical, select the Transfer to Operator action in the Action field next to Digit 0. The available action names that would appear in the Action column of the Digit Routing Table are listed here in Table D-1 along with explanations in the Description column.

- **Configuration Data**: Some actions require you to enter more information for them to complete their role. The Configuration Data column lists that data. For example, for the Invoke SDR Table action, you enter the name of the SDR table to invoke. Some actions, such as Transfer to Operator, require no other data to complete their role, because the needed data is programmed into them.

Table D-1 Single Digit Routing Actions

Action Name	Description	Config. Data
Access Fax on Demand	Routes caller to Fax on Demand	None
Access Messaging	Routes caller to Message Center	None
Deliver fax to caller	Prompts the caller for a fax machine number and sends the fax associated with the prompt to the fax machine	Fax ID
Invoke SDR table	Loads and executes specified SDR table	SDR table name
*Launch application	*Invokes Show N Tel (SNT) telephony application	*Full path and name of SNT application
Play Help prompt	Plays the help prompt specified in the Help field in the second dialog	None
Play prompt	Plays the specified greeting	Greeting name
Restricted transfer	Allows a caller to enter a name or extension of a OnePoint Messenger user to which to transfer	None
Take fax for mailbox	Takes a fax message from caller and deposits it to the mailbox specified in the configuration	Mailbox that receives fax
Take message for mailbox	Takes a voice message from caller and deposits it to the mailbox specified in the configuration	Mailbox that receives message
Terminate table	Terminates the current table	Termination is defined in the table configuration
Transfer to Operator	Transfers to Operator	None
Transfer to extension	Caller is transferred to extension specified in prompt	Extension to which to transfer
Unrestricted Transfer	Allows caller to transfer to any extension as permitted by dial plan and PBX restrictions. This includes external and long distance transfers.	Password confirmation is required before user can invoke a transfer.
Unused	The digit is not used.	None

NOTE: *The action "Launch application", described as "Invokes Show N Tel (SNT) telephony application", is not yet supported.

3   In the Digit Configuration dialog for the selected digit, click the **Operation** field down-arrow to select the action associated with the digit from those listed in the **Action Name** column above.

4   If the action needs data, as listed in the **Configuration Data** column above, click the down-arrow in the field that appears in the **Details** area.

For example:

- If you select **Deliver Fax**, the **Fax Document** field appears for you to select a document to fax.

- If you select **Leave Message for Mailbox**, the **Mailbox #** field appears for you to enter the target mailbox number.

- If you select **Unrestricted Transfer**, two fields appear in the Details area -- **Password**, for you to enter the password you want callers to enter, and **Verify**, for you to reenter it. To clarify, a caller is "Unrestricted" in the numbers he can dial once he has entered the correct password.

Figure D-16 on the following page shows an example of a completed SDR menu worksheet to provide the first level menu at the Automated Attendant.

Figure D-16   Completed Single Digit Routing Table Worksheet

Single Digit Call Routing Table Worksheet

Name:_____Main Daytime Menu in English_____Table#:__1____

Description:_____Business Hours menu: Operator, Marketing, Support, HR, Cut-thru, FoD, Span.____

Intro Prompt:_____Standard Daytime Welcome prompt_____

Main Prompt:_____Main Daytime Menu in English (To transfer to the Operator, press 0 . For Marketing, press 1; for Customer Support, press 2....")_____

Help Prompt:_____Standard Daytime Main Help prompt_____

X__Allow Cut-through Dialing   Minimum Extension Length:____4 digits____

Maximum Retries:____3____

Termination Action: __Disconnect __Exit to Previous Menu _XTransfer to Operator

Timeout: _10___seconds

Timeout Action: __Disconnect __Exit to Previous Menu __xTransfer to Operator

X___Play Timeout Prompt:_____Xfer to Operator ("Your call is being transferred to the Op...")_____

Digit	Action	Description	Configuration Data
0	Xfer to Operator	Transfers caller to the Operator	no
1	Invoke SDR Table	Invokes SDR menu #2 (Marketing)	SDR menu #2
2	Invoke SDR Table	Invoke SDR menu #3 (Support)	SDR menu #3
3	Fax on Demand	Invokes SDR menu #4 (Fax on Demand)	SDR menu #4
4	Deliver Fax	Sends Fax #1104 (TRC FAQ)	Fax doc #1104
5	Take Fax	Takes fax from caller at Attendant Mbx	Attendant Mailbox #
6	Take Message	Takes message from caller at Att. Mbx	Attendant Mailbox #
7	Play Prompt	Play Prompt 4 ("For directions to our office")	"Directions" Prompt
8	Restricted Transfer	Caller passcode access to distance dial	no
9	Unrestricted Transfer	Caller access to multi-site corp. dial	Passcode
*	Play Help Prompt	Invoke Standard Daytime Main Help prompt	"Main Help" Prompt
#	Messaging	Transfers caller to the Message Center	no

Possible actions: Fax on Demand, Messaging, Deliver Fax, Launch Application, Take Fax, Take Message, Play Prompt, Play Help Prompt, Terminate Table, Restricted Transfer, Unrestricted Transfer, Transfer to Operator, Invoke SDR Table, Unused

Configuring the Automated Attendant Service

The Automated Attendant and Fax on Demand services are two of the three dialed services provided by OnePoint Messenger (the Message Center is the other (see "Message Center" on page 130 in Chapter 3.) If you enable Automated Attendant (access Automated Attendant setup from the **Applications** node of **TS Admin**—see "Automated Attendant" on page 111 in Chapter 3), you have a choice of setting it up in *Simple Attendant mode* or in *Single Digit Routing (SDR) mode*:

- **Simple Attendant mode**: The TUI prompts the caller to access the extension of a OnePoint Messenger user by dialing it. If you enable Dial by Name (DBN—see "Dial by Name" on page 117 in Chapter 3), the TUI also announces that the caller can use DBN to access the extension.

- **Single Digit Routing (SDR) mode**: As detailed above, SDR mode enables you to provide the caller a list of options, each accessed by pressing a single digit on the telephone keypad. In addition, the extension-dialing function of Simple Attendant is also enabled.

In Single Digit Routing mode, you have many options, the simplest of which would be to play the same SDR menu at all times. In fact, on the Automated Attendant page, you can still invoke the basic extension-dialing functionality of Simple Attendant by selecting **None** for any one of four **Single Digit Routing** time periods, as defined on the Business Hours page—see page 113 in Chapter 3—Daytime (i.e., business hours), Evening, Weekend, and Holiday.

At the other end of the scale, you can create and activate multiple SDR menus for those four time periods. You can easily modify the menus and greetings that play with them, such as to announce irregular hours during holidays.

You can provide ten options per SDR menu. You can invoke another menu as one option, up to ten menu levels deep. For example, your top-level menu might provide access to several parallel sets of nested menus, each providing the same options in a different language.

Business Hours and Non-Business Hours SDR Menus

You might not have much of an interest in providing a business-hours SDR menu for the Automated Attendant. On the other hand, since few people are at their desks to take calls during non-business hours, you might have more interest in providing an SDR menu for those

times, so that you can provide better access to those people who are available and to provide automated transfers of information.

For your main evening and weekend SDR menus, you might provide menu options to quickly reach those people who are on duty, such as the Customer Support team. You might also provide menu options for leaving messages for particular departments that have no one on duty, which would save the caller the extra step of calling someone who is sure not to answer.

For your holiday SDR menu, you might add an Introduction prompt that notes the holiday, as described below.

To make a non-business hours SDR menu available:

1   On the **Business Hours** node of **TS Admin,** define business hours and holidays. See "Business Hours and Holidays" on page 113 in Chapter 3.

2   On the **Greetings/Prompts** node of **TS Admin**, create greetings to be assigned to business hours and non-business hours SDR menus. See "Designing Greetings and Prompts" on page 259, and see Figure D-17, below.

    Typically, you would record at least two prompts—Introduction and Main—for an SDR menu, as shown on Figure D-9 on page 267. The Introduction is usually a greeting, while the Main prompt lists the menu options.

3   On the **Single Digit Routing Table** node of **TS Admin**, create menus for business hours and non-business hours. See "Designing Single Digit Routing Menus" on page 265.

4   On the **Automated Attendant** page of **TS Admin**, select **Single Digit Routing**.

5   On the **Automated Attendant** page, select the business-hours SDR menu from the Daytime SDR Table drop-down list.

6   On the **Automated Attendant** page, select the non-business-hours SDR menu for one or more of the non-business hours periods.

Setting Up the Automated Attendant for Holidays

In OnePoint Messenger, you can record many greetings, then select from one to be used in a particular Single Digit Routing menu (SDR

menu). You might want to record specific greetings for each holiday, indicating the days that your offices will be closed.

Because SDR menus play an Introduction prompt before a Main prompt, you can easily customize a Holiday SDR menu by recording the menu choices in the Main prompt, as exemplified in Figure D-17.

Figure D-17   Greetings/Prompts Page
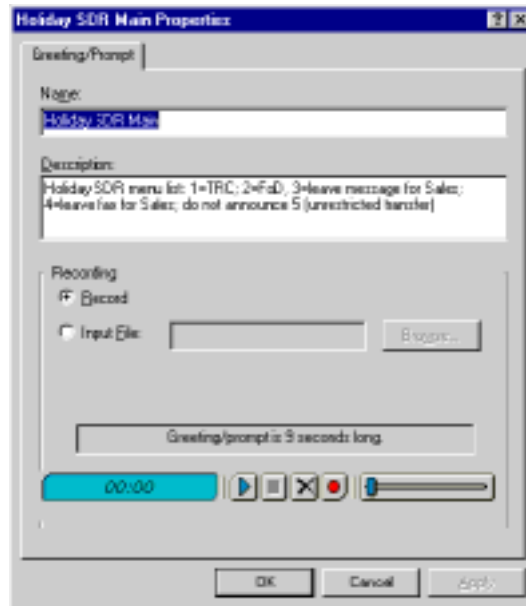
For example, the recording might be:

"You may leave a message for someone by dialing their extension at any time.
Press two star to dial by name.
For Product Technical Support, press 1.
For the Message Center, press 2.
To access Fax on Demand, press 3.
To leave a fax for Sales, press 4.
...(etc.)"

Then record a collection of Introduction greetings, each announcing a specific holiday, possibly in this form:

"<Company name> wishes you a <greeting such as "Happy Thanksgiving">. Our offices will be closed between <date and date>."

A sample of how your greetings list might look after recording some of those greetings and prompts appears in Figure D-18.

Figure D-18 TS Admin, Greetings List
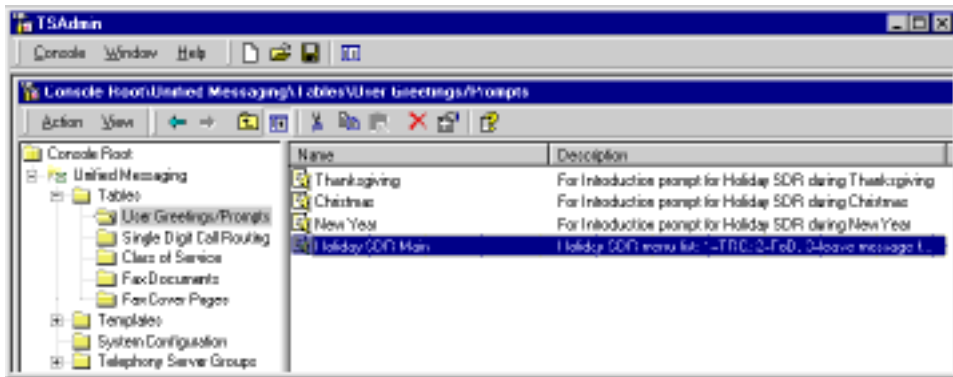
On the **Single Digit Routing Table** node, create a Holiday SDR table and select for the **Introduction** prompt the greeting for the upcoming holiday. For the **Main** prompt, select the prompt that announces the list of menu options.

On the **Automated Attendant** page of TS Admin, select that Holiday SDR table in the drop-down list of the **Holiday SDR Table** box, as shown in Figure D-19.

Figure D-19   TS Admin, Automated Attendant Page
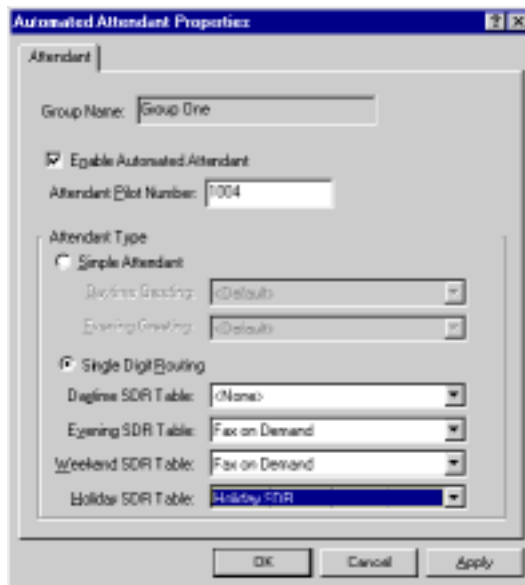
Before a particular holiday arrives, open the Holiday SDR table and select, for the Introduction prompt, the greeting for that holiday. If you do not want to use an SDR menu, then, on the Automated Attendant page, you would select Simple Attendant and the holiday greet-

ing for the Evening Greeting. The Evening Greeting plays at all times during holiday periods.

Configuring the Fax on Demand Service

The Fax on Demand service is a specialized form of a Single Digit Routing (SDR) table. The primary difference is that Fax on Demand only asks callers for their fax machine phone number once per call, whereas, on other SDR menus, every time the caller presses a key that sends a fax, the TUI prompts the caller for a delivery fax number. The Fax on Demand service queues the faxes that the caller requests up to the faxes-per-call limit that you set on the Fax on Demand page (see "Fax on Demand" on page 124 in Chapter 3), then delivers all of the requested faxes to the caller's fax machine.

Other notable differences include:

- You can assign and publish a Fax on Demand pilot number so callers can call the service directly.

- You can assign the Fax on Demand telephony application to a line in Show N Tel Manager if you want to ensure that Fax on Demand callers can access a Telephony Server line more quickly.

One of the benefits of using an SDR table to provide Fax on Demand is that you can provide users more options. Rather than simply providing them one prompt that lists all documents, you can provide nested menus that include more explanations. You can also organize similar fax documents, such as putting product collateral in one menu and customer support documents in another.

A completed SDR worksheet appears in Figure D-20 on the following page. It shows an SDR worksheet set up for Fax on Demand. Note that the menu can provide access to a live human and the chance to leave a message, such as for requesting help in accessing a document.

The use of the #-key in Figure D-20 shows an example of another option, assigning keys to functions not announced to callers. In this case, accessing the Message Center would only be of interest to OnePoint Messenger users. Announcing it in the Main Prompt would unnecessarily add to the complexity of the message.

Figure D-20   Completed SDR Worksheet for Fax on Demand (on next page)

Single Digit Call Routing Table Worksheet

Name:_____Fax on Demand Primary Menu_____

Description:____Provides access to Sales and Customer secondary Fax on Demand menus____

IntroPrompt:____Standard Fax on Demand Welcome_____

MainPrompt:___Fax on Demand Primary Menu in English ("For assistance, press 0. For a list of all available fax documents, press 1. To access product collateral ...")

HelpPrompt: _Standard Daytime Main Help prompt_____

Maximum Retries:__3___

Termination Action: __Disconnect __Exit to Previous Menu _x_Transfer to Operator
__Allow Cut-through Dialing   Minimum Extension Length:_____

Timeout: __10__seconds

Timeout Action: __Disconnect __Exit to Previous Menu _X_Transfer to Operator

_X_Play Timeout Prompt:____Timeout to Operator_____

Digit	Action	Description	Configuration Data
0	Operator	Transfer to Operator	no
1	Deliver Fax	Sends list of all available fax documents	Fax doc #1001
2	Invoke SDR Table	Invoke Marketing Fax on Demand list SDR	SDR menu #5
3	Invoke SDR Table	Invoke Support Fax on Demand list SDR	SDR menu #6
4	Deliver Fax	Sends Fax #1104 (TRC FAQ)	Fax doc #1104
5	Play Prompt	Repeats menu options in Spanish	"FoD main in Spanish"
6	Take Message	Takes message from caller at Att. Mbx	Attendant Mailbox #
7	Unused		
8	Unused		
9	Unused		
*	Unused		
#	Messaging	Transfer to Message Center (not announced in Main prompt)	no

Possible actions: Fax on Demand, Messaging, Deliver Fax, Launch Application, Take Fax, Take Message, Play Prompt, Play Help Prompt, Terminate Table, Restricted Transfer, Unrestricted Transfer, Transfer to Operator, Invoke SNT Table, Unused

Appendix E.   Text-to-Speech (TTS)

This appendix tells you how to edit pronunciations in the TruVoice™ Text-to-Speech (TTS) dictionary and discusses enabling TTS. It contains the following sections:

Section	Page
Enabling TTS	**285**
TTS Dictionary Editor Startup Shortcut	**286**
Customizing TTS Pronunciations	**287**
Phonemes and Phonetic Spelling	**291**
Word List Dialog	**292**
Operational Characteristics	**293**

Enabling TTS

TTS is enabled automatically on the TUI for converting e-mail text into synthesized speech if the following resources are available

- TTS is among the components licensed for the site.

- There are available ports enabled with TTS.

- The installed TTS licenses are not all currently in use.

If any of the conditions is untrue, the TUI announces that there is a message with text, but says "There are currently no resources available to play your message."

For information on TTS licenses, see "Upgrading OnePoint Messenger Feature Licenses" on page 220 in Chapter 9 of this guide or see Chapter 5 of the *OnePoint Messenger Installation Guide*.

NOTE: If additional TTS licenses are installed while Show N Tel applications are running, use Show N Tel Manager to stop and restart

all lines assigned with the Telephony Server telephony appllication so that the new TTS licenses may be used.

Once the TTS resources are available, a user can only have TTS service if the user has:

- A OnePoint Messenger user license with the Full Unified Messaging setting

- A Class of Service (COS) that includes TTS access.

For details, see "Operational Characteristics" on page 293 below.

Enable Full Unified Messaging and the COS for each user in Exchange Administrator. See "Managing OnePoint Messenger Users" on page 63 in Chapter 2 of this guide for details.

TTS Dictionary Editor Startup Shortcut

You do not need to install, start, or configure any TTS components separately. The TTS Dictionary Editor application is provided to you as a Telephony Server subsystem for you to be able to modify the pronunciation of words read by TTS as it reads text e-mail over the telephone to OnePoint Messenger users. To be able to use the TTS Dictionary Editor, you need to run the Editor residing on the Telephony Server by launching it from a shortcut placed on another multimedia Windows computer on the LAN set up with the OnePoint Messenger Desktop Client (needed only for shared files).

To create the shortcut, you need first to share the cv_tts directory that exists on the Telephony Server; then create a shortcut to TTS Dictionary.exe in that directory, as described here.

To share the cv_tts directory:

1   In Windows NT Explorer, navigate to cv_tts. The default path is Mitel\OnePoint Messenger\cv_tts.

2   Right click on cv_tts. Choose **Sharing**.

3   Select **Shared As** on the **Sharing** tab, then accept the default name in the **Share Name** field, or enter another name.

4   In the **User Limit** group, choose how many users you will allow to access the directory at the same time. For this purpose, you would generally allow only one user.

5   Click **Permissions**, then assign **Full Control**.

To create a shortcut to TTS Pronunciation Manager:

1   In Windows NT Explorer on the target computer, either map the cv_tts directory or navigate to it.

2   To map the directory, in Windows NT Explorer, choose **Map Network Drive** from the **Tools** menu. In the **Path** field, enter \\<server>\<share directory>. For example, if the machine name of the Windows NT host of Telephony Server were TServer, the default path to cv_tts would be: \\TServer\cv_tts.

or

3   To navigate to the directory using Windows NT Explorer from a multimedia computer in the Telephony Server domain, find the computer containing the Telephony Server in the Network Neighborhood list.

4   Double-click the server name to expand its directory structure.

5   Click the **cv_tts** directory to view its files in the right pane.

6   After accessing cv_tts using mapping or navigation, click the **TTS_Dictionary.exe** file. Then drag it either to your desktop or the Windows **Start** button. This creates a link from your desktop to the dictionary on Telephony Server.

7   Double-click the **TTS Dictionary** icon that you have created. The **Dictionary Editor** window appears, as in Figure E-1.

Customizing TTS Pronunciations

You can edit the TTS dictionary so that the TTS engine pronounces a particular word in the way that you prefer. However, the TTS engine does not always look in the dictionary for words before it pronounces them. For example, the TTS engine does not look in the dictionary to learn how to pronounce acronyms or other words that appear in an email with all capitals. It pronounces each letter. While you can edit and store the pronunciation of a word, you need to put the word in an email and listen to what TTS does with it in order to know if the change has been made.

To edit the pronunciation of a word:

NOTE: You need a multimedia PC with a sound card, microphone, and speakers to edit TTS pronunciation. If you try to open a dictionary on a computer that has no sound card, an error message appears.

Figure E-1   Dictionary Editor Window
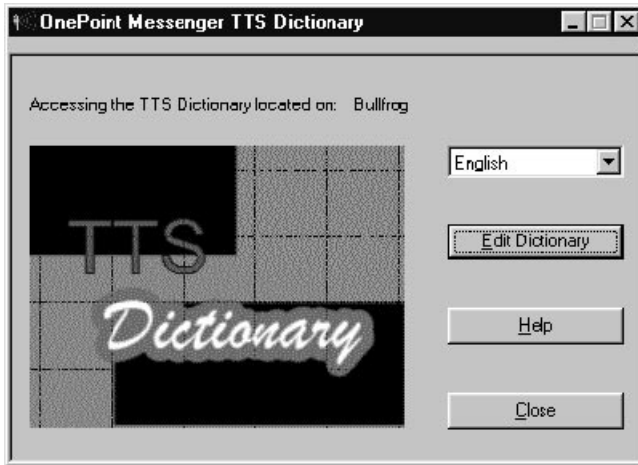
1   If you are working on the Telephony Server, start Telephony
     Server from the OnePoint Messenger folder. If you have added a
     shortcut icon to your remote desktop, as described above, double-
     click the TTS Dictionary icon on your desktop. The Dictionary
     Editor window appears, as shown in Figure E-1.

2   Select the desired language from the pull-down list box. In
     OnePoint Messenger version 1.1, English is the only option. If
     you do not see the word "English" listed in the list/text box, find
     and move the English dictionary, english.dic, to the cv_tts direc-
     tory.

3   Click **Edit Dictionary** to display the **TruVoice Pronunciation
     Manager** dialog, shown in Figure E-2.

NOTE: The TTS Dictionary Editor dialog **Help** button accesses the
OnePoint Messenger help system, a help system for all of the
OnePoint Messenger server applications. The TruVoice Pronuncia-
tion Manager dialog **Help** button, on the other hand, accesses a help
system specific to Pronunciation Manager.

Figure E-2 TruVoice Pronunciation Manager
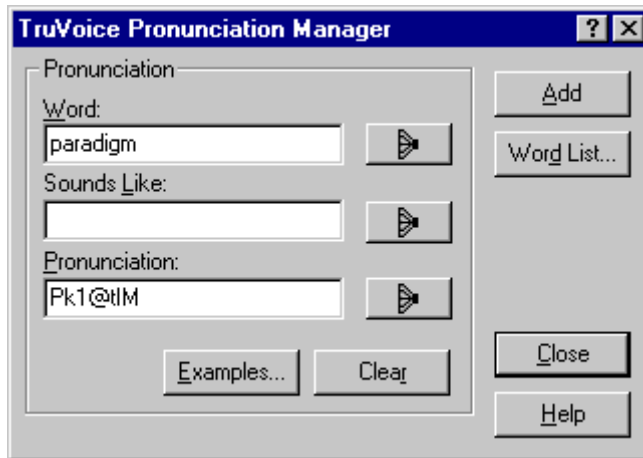
4 Click **Word List**. This opens the Word List window, shown in Figure E-3, displaying the exception dictionary used by TTS.

Figure E-3   Word List Window
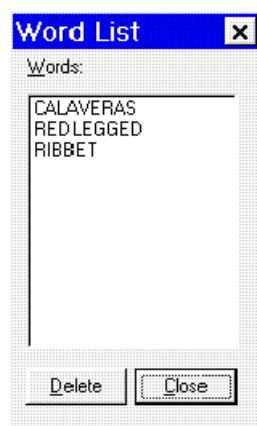
5 In the **Words** field of the main dialog, type the word for which you want to change the pronunciation. To edit a word that is already listed in the **Word List**, double-click it. The word and its associated pronunciation phonemes appear in the **Pronunciation Manager** dialog.

6 Click the **speaker** icon to the right of the **Word** field to hear the existing pronunciation. The default phonemes appear in the **Pronunciation** field.

7 Correct the pronunciation in one of the following ways:

To use the Sounds Like field:

a. Type a word in the **Sounds Like** field that contains most or all of the sounds that you need.

b. Click the **speaker icon** next to the **Sounds Like** field to test the pronunciation. The associated phonemes appear in the **Pronunciation** field.

c. To test a letter sequence that you think may more closely represent the pronunciation of your word than does the word itself, enter the sequence in the **Sounds Like** field.

   For example, the word "pronunciation" sounds like "pruh-nunciation" when spoken by TTS. To emphasize the "o," change the spelling of "pronunciation" in the **Sounds Like** field to "prohnunciation."

d. Edit the phoneme string in the **Pronunciation** field after you have gotten the pronunciation of your word fairly close to what you want by using the **Sounds Like** field.

To edit directly in the Pronunciation field:

a. Insert the appropriate phoneme in the word in the **Pronunciation** field to perfect the pronunciation of the word. Click the speaker icon next to the **Pronunciation** field to test the pronunciation.

b. You can also insert phonemes from the Examples list.

c. Click the **Examples** button to access the list.

d. Double-click a phoneme in the list to append it to the string.

e. Cut and paste the appended phoneme into the appropriate place in the string.

For further information on phonemes and phonetic spelling, see "Phonemes and Phonetic Spelling" below.

8 When you have a correct pronunciation, store the word in the modified **Word List** by choosing **Add**.

9 After adding or editing TTS dictionary entries, close the Pronunciation Manager program. Then, with the Show N Tel Manager, stop all lines and then restart the lines to enable TTS dictionary changes.

Phonemes and Phonetic Spelling

To view a key list of the phonemes used in the TruVoice Pronunciation Manager, click the **Examples** button in the **Pronunciation Manager** dialog. The **Examples** window appears, as shown in Figure E-4.

Figure E-4   Examples Window
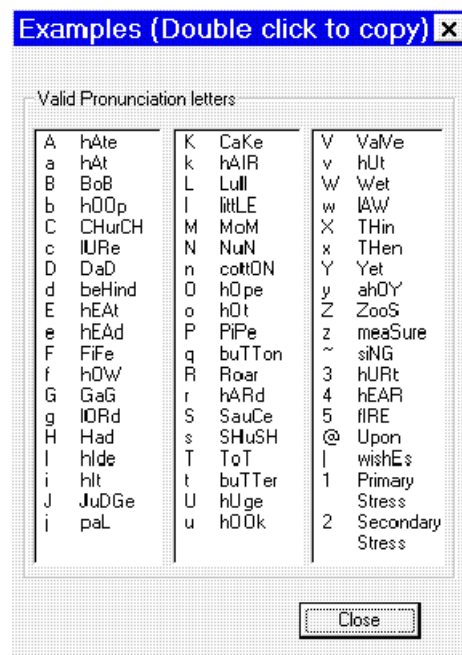
As shown above, the Examples list displays phonemes followed by example words. The capitalized letters indicate the sound that the phoneme represents. For instance, "A" is shown with "hAte," meaning that, if you type "A" in the **Pronunciation** edit box, you will hear an "A" as pronounced in "hate" (a hard "a"). The second phoneme in the list, the phoneme "a," has a softer pronunciation of the letter "a," as pronounced in "hat."

Testing Phonemes in Pronunciation Manager

Some phonemes bear no spelling similarity to the sound they represent. For example, "x" represents the pronunciation of "th," as exemplified in the Example list by "THen."

To test the sound of an individual phoneme:

1   Clear the **Pronunciation** field.

2   Double-click the phoneme in the Examples list to add it to the **Pronunciation** field.

3   Click the speaker icon next to the field.

Notice the difference in functionality between the **Pronunciation** field and the **Sounds Like** field. For example, "A" and "a," when entered in the **Sounds Like** field of the Pronunciation Manager, both yield the same pronunciation. That is because the **Sounds Like** field contains letters, not phonemes. "A" and "a" represent different phonemes in the **Pronunciation** field. Non-alphabetic characters in the **Sounds Like** field generate error messages, as do spaces. For example, if you want to specify the pronunciation of the number "123" as "one hundred and twenty three," enter the string "wonhundredandtwentythree" in the **Sounds Like** field.

Stressing Syllables

Note the last two entries at the bottom of the third column of the **Examples** window. When the number "1" for "Primary Stress" appears after a syllable in the string entered in the **Pronunciation** field of the **Pronunciation Manager** dialog, it indicates to Pronunciation Manager that stress (i.e, emphasis or accent) should be placed on that syllable.

For example, the string "Hr1DWk" appears in the pronunciation field for the default pronunciation of the word "hardware." The "1" places the accent on "hard." Putting the "1" at the end puts the emphasis on "ware." Putting a "2" for "Secondary Stress" at the end – Hr1DWk2 – puts equal emphasis on both syllables.

Word List Dialog

The **Word List** dialog contains a list of the words for which you have added pronunciations in the exception dictionary. The English exception dictionary file name is english.dic.

In addition to inspecting the list, you can edit words that already exist in the Word List or remove them.

To remove a word from the dictionary:

1   Choose the correct language in the **Dictionary Editor** window.

2   Click **Edit Dictionary**.

3   In the **TruVoice Pronunciation Manager** dialog, click **Word
    List**.

4   Select the word to remove in the list and click **Delete**.

To edit a word:

1   Follow the steps 1–3 above.

2   Double-click the word to edit. It appears in the **Word** field of
    Pronunciation Manager, along with the saved pronunciation for it
    in the **Pronunciation** field.

3   Edit the word, as described in "Customizing TTS Pronuncia-
    tions" on page 287 above.

Operational Characteristics

Text-to-Speech (TTS) is a OnePoint Messenger service whose func-
tion it is to translate text into speech for telephone callers who call
into OnePoint Messenger and access one of TTS several services:

• When a caller calls the Fax on Demand service and TTS is avail-
  able, it will speak the description associated with each document
  in the list. The document number is not spoken by TTS. It is a
  concatenation of single number prompts. For example, if the doc-
  ument number is 1244, Telephony Server plays the "one" prompt,
  then the "two" prompt, then two "four" prompts.

• When a caller calls the message center to retrieve messages and
  TTS is available, TTS speaks the name of the sender of email,
  followed by the subject line, followed by any text in the body of
  the email. It does not render attachments.

• When a caller calls a OnePoint Messenger user who has not
  recorded his/her name, TTS speaks the text name associated with
  the mailbox.

These physical conditions must exist before TTS is invoked:

• There is at least one TTS license installed and not currently in use
  by another caller. You can purchase incremental TTS licenses to
  ensure that you have enough. See "Upgrading and Repairing
  OnePoint Messenger" on page 217 in Chapter 9.

• A physical line port exists to support the call, and the port has
  been assigned a voice application, such as Telephony Server.

TTS is reassigned to that port dynamically, then releases the port when it is through.

For example, you might have five TTS licenses, but have 15 ports assigned to the Telephony Server application, which includes the TTS function. TTS would run one the first five ports that requires TTS, but the next port requesting TTS would not receive it unless a call on one of the first five ports releases its allocated TTS. For details, see Appendix A and Chapter 4 in the *OnePoint Messenger Installation Guide*.

The TUI invokes TTS for a caller under these conditions:

- The physical resources are available, as described above.

- The user has TTS permissions and preferences set. First, in nodes in Microsoft Management Console, you have the ability to set global defaults for text playback options (see "Mailbox Defaults" on page 129 in Chapter 3), and create classes of service which include the TTS privilege (see "Class of Service" on page 114). Then, in Exchange Administrator, you set two options that affect TTS (see "Managing OnePoint Messenger Users" on page 63 in Chapter 2):

  - Choose whether to give the user the Full Unified Messaging license, which allows TTS.

  - Assign a COS with or without TTS to a user.

- Finally, the user can log into his or her mailbox through the TUI to set playback options that determine whether TTS is invoked within the constraints of physical resources and assigned privileges.

If the user calls his or her mailbox and attempts to listen to a message that contains text when physical TTS resources are not available, the TUI announces "I'm sorry, there are no e-mail reading resources available." If TTS privileges are not enabled, the TUI announces "This message has text components that cannot be played, because you do not have text reading privileges."

Installation: The TTS engine resides in \OnePoint Messenger\bin. The TTS editing tools and dictionary reside in \cv_tts.

- TTS must run on Telephony Server and be licensed to run. The TTS.dll must be in the path. Other DLLs include:

- Tv_eng32.dll: American English TTS engine

- LanMan.dll

- axTTS dll

The TTS DLLs for all supported languages should be present in the system32 directory or elsewhere in the path.

Other possible problems include:

- As CPU usage approaches 100%, TTS will produce broken speech. No error messages are generated.

- The dictionary might be corrupt or not found.

Appendix F.   Telephony Server

This appendix discusses call processing operational details on the Telephony Server. It contains the following sections:

Introduction to Telephony Server Processes

Telephony Server is comprised of several tightly integrated programs that manage the interface between the telephone switch and the mail server (Microsoft Exchange versions 5.0 or 5.5). The Telephony Server receives unanswered calls to users, calls from users to their own mailboxes, and calls to the Automated Attendant and Fax on Demand applications.

The interaction with the caller occurs through a TUI "call flow" of recorded prompts that guide the user through menus of associated features. Those menus are detailed in Chapter 7 of the *OnePoint Messenger User Guide*, along with a detailed discussion of using the TUI.

Fax options are detailed in Chapter 4 of this guide and Chapter 5 of the *OnePoint Messenger User Guide*. Each menu has help available by double-pressing 00 (the zero-key).

Generally, the TUI lists the associated keys with the options on the current menu. One exception when the TUI does not announce all menu choices is after a user login. After the TUI enumerates the new and saved messages, the initial prompt is simply "Press P to play the first message." If the user does not press a key, the TUI repeats the prompt and then lists the other menu choices.

There are three general categories of menus in the TUI—menus for retrieving and disposing of messages, menus for making messages, and menus for setting preferences, such as greetings. The menu trees follow a conventional voice mail model, with some additions to accommodate unified messaging innovations.

Call Routing

Telephony Server is the link between the telephone switch (PBX) and Microsoft Exchange. It links telephone callers to OnePoint Messenger mailboxes on Exchange to leave messages and to retrieve them. Telephony Server receives call transfers from inside or outside the OnePoint Messenger domain. In general, these call transfers occur in the following situations:

- Someone who is not a OnePoint Messenger subscriber calls a OnePoint Messenger subscriber, and the OnePoint Messenger subscriber does not answer the phone. Telephony Server allows the caller to leave a message or to transfer to another line.

  A "OnePoint Messenger subscriber", also called a "OnePoint Messenger user", is a person with an Exchange mailbox that is accessible by OnePoint Messenger Telephony Server. A user must be assigned Full Unified Messaging or Voice and Fax Mail in Exchange Administrator to be visible to Telephony Server.

- OnePoint Messenger subscribers call their mailboxes to access their voice mail, e-mail, or faxes, or to create messages.

When OnePoint Messenger receives an incoming call, it routes it to the appropriate applications based on the following rules:

- If the called number is the OnePoint Messenger Pilot number (mailbox access point), and the caller is a valid user, the caller can log in to his or her mailbox.

- If the call is forwarded, the caller can leave a message for the called party.

- If the called number is the Automated Attendant (extension dialer), then the call is routed to the Automated Attendant.

- If insufficient information is available, then the call is routed to the Call Answering application, and the caller is prompted for a user name or extension.

Call Answering

Call answering is any forwarded call, including a called telephone that is busy or one that is not answered (called RNA, meaning "Ring No Answer").

If the person being called is a OnePoint Messenger subscriber, and information about that subscriber is available, then the TUI plays that subscriber's greeting, and the caller is prompted to leave a message.

If no information about the OnePoint Messenger subscriber being called is available, or the person being called is not a OnePoint Messenger subscriber, then the TUI prompts the caller to input a user extension or name. If the caller enters a valid user extension, then the TUI prompts the caller to leave a message. If the caller does not enter an extension or enters an invalid extension more times than allowed by the retry limit, the TUI prompts the caller to leave a message in the Attendant mailbox. The caller can transfer to an operator (if one is available) or to the Automated Attendant at any time.

The retry limit is configurable—see "System Limits" on page 142 in Chapter.3.

Automated Attendant

The Automated Attendant (also referred to as Automated Receptionist or abbreviated as AutoRecep or AR) is an application that allows callers to transfer to user extensions, to the Operator (if you enable one—see "System Parameters: This tab is replaced by several interfaces. The fields in that tab were:" on page 146), or to the Message Center, from the main number.

The simple form of the Automated Attendant welcomes the caller to the attendant service, then asks the caller to enter an extension to access. You can enable Dial By Name for this function. If the caller makes a valid entry, Telephony Server performs a blind transfer (the attendant does not attempt to verify that the call connects). If the

caller enters an invalid extension, the Automated Attendant prompts the caller to enter another extension.

If you enable the operator (See "System Parameters: This tab is replaced by several interfaces. The fields in that tab were:" on page 146), the caller may also request a transfer to the operator, or, if there is no user input after a period of time, the Automated Attendant transfers the call to the operator.

The "Single Digit Routing" (SDR) form of Automated Attendant is one that you can program to enable callers to press single keys to access the functions that you correlate to the various keys on the keypad. One function that you can invoke is another menu, so you can set up hierarchies of nested menus, such as a menu for each department.

Set the details of operation for the Automated Attendant in the Unified Messaging Snap-in, specifically the:

- Automated Attendant node to select **Enable Automated Receptionist** and enter the Automated Attendant pilot number. Select the greeting played by the Automated Attendant. Select the menu options provided by the Automated Attendant, including "Simple Attendant" or "Single Digit Routing" menus. See "Automated Attendant" on page 111.

- **Business Hours** node to set hours of operation. See "Business Hours and Holidays" on page 113.

- **Dial By Name (DBN)** node: Set how DBN works for the user attempting to reach an extension by entering the called person's name on the telephone keypad. See "Dial by Name" on page 117.

- **Greetings** node: Record greetings. See "Greetings and Prompts" on page 125.

- **System Information node:** Attendant Mailbox—If you enter a mailbox number in the Attendant Mailbox field but do not enable the Operator, callers will be prompted to leave a message in the mailbox if they do not enter a user's extension. See "System Information" on page 141.

Type Ahead

Telephony Server allows for type ahead through any state. A key press will interrupt any prompts that are playing, and if the key is valid for the state, cause the specific command to be executed.

Accessing Mailboxes and Playing Messages

The methods of accessing a mailbox through the telephone are conventional. You can set up your PBX and the users' telephone handsets so that Telephony Server recognizes that the caller is calling his own mailbox and immediately prompts him to enter his passcode. In the more general case, the TUI offers the caller the option of entering a mailbox number or user name by using the telephone keypad. The user can enter the mailbox by entering the number and then pressing the *-key.

Passcode

After the caller enters a correct mailbox number, the TUI prompts the caller to enter a passcode.

The user passcode is a telephone keypad number sequence initially set in Exchange, but which is revised by the user during the tutorial on first login to the user's mailbox. The user can revise the passcode through the TUI at any time.

You can set passcode parameters in Microsoft Management Console:

- You set a default passcode in the **Security** node, and set the minimum and maximum passcode length that a user may choose. The passcode appears automatically in the Unified Messaging tab of each user profile in Exchange. The Exchange administrator can change the passcode at any time in the user's Exchange profile, and the user can change the passcode through the TUI.

- On the **Mailbox Defaults** node, assign a default passcode. This ensures a minimum beginning level of security for all mailboxes. The Exchange administrator can also assign the user a unique passcode, and the user can also change it from the TUI in the **User Options** menu. This passcode is separate from the passwords with which users access their Exchange mailboxes from Outlook or a Web browser.

In addition, there are several passcode key combinations that are disallowed for security purposes:

- The passcode cannot be the same as the mailbox number.

- Passcodes in either of these sequences: 123456 or 654321

- Passcodes that are all the same number, such as 2222 or 3333

Incorrect Key Entries

If the caller enters an invalid number, the TUI alerts the caller to the error, and prompts the caller to re-enter the number. Telephony Server ends the session after a specific number of invalid entries or a lack of user input, both of which you can set in the **Systems Limits** node of Microsoft Management Console.

There are several ways the user can recover from entering an incorrect number:

- If the user enters an incorrect extension, mailbox, name, or passcode number, he can press the #-key or wait for the timeout that you specify in the **Systems Limits** node.

- If the user enters a restricted number sequence that you specify in the **Dial Plan** node of Microsoft Management Console, the TUI will immediately alert the user. However, if the Dial Plan node specifies the mailbox as a fixed length, then as soon as the required number of keys are pressed, the transfer is made; a termination number or timeout is not required.

Recorded Name

The recorded name greeting is the greeting that is used to identify the owner of a mailbox (for example, "John Smith is the owner of mailbox 3864.") It is used primarily for name confirmation when adding recipients to a message. The recorded name is also used for name confirmation when logging into a mailbox. When a recorded name is not available, the system invokes Text-to-Speech to speak the name.

Mailbox Enumeration

Upon a successful login by a OnePoint Messenger user to his or her mailbox, Telephony Server announces the summary of Inbox messages (called "mailbox enumeration") and presents the available menu options. The mailbox enumeration is announced in this sequence:

- Number of urgent messages, including fax count if any of the urgent messages contain fax

- Number of new messages (the total of unified and text), including fax count if any of the messages contain fax

- Number of saved messages including fax count if any of the saved messages contain fax

After playing the mailbox enumeration, the TUI prompts the user to "press [P] to play the first message." If the user presses [P], the TUI plays messages in the same sequence—i.e., urgent messages first, then new unified messages, then new text messages, then saved messages by date. If, while the user is logged in, a new message arrives, the TUI announces that the new message has arrived. The TUI plays the message after the user dispenses with the open message. The message takes priority over other unread messages, including urgent messages.

Menu Options

After listening to the message enumeration, a user can:

- Play a message and then make choices about how to handle it.

- Create a new message and then amend it and send it.

- Access the **User Options** menu to change preferences such as the user's greeting, passcode, default fax number, and pager number.

- Transfer to the operator or the Automated Attendant.

For a complete descriptive listing of the user TUI menus, see Chapter 7 of the *OnePoint Messenger User Guide*.

Message Types

All messages consist of a message header that contains the sender, recipients, time stamp, and subject, and one or more message components. Message components can be fax, text, voice, or any combination of message types. Messages may also have an attached file. If a message has an attachment, the TUI notifies the user but does not render attachments or fax.

In addition, a message may have one or more embedded messages. Typically, an embedded message will be a forwarded or answered message, but users can also drag and drop multiple messages into a new message from the GUI.

Message Playback

The TUI plays a message to a OnePoint Messenger user in the following sequence:

- Message header

- Voice and text components, in order

- Embedded messages (forwarded/answered messages), in order
- Message disposition

The user can select the Inbox Option to have just message headers read by TTS. If, during the message summary, the user hears the message summary that he or she wishes to hear in full, he or she can then press the 7-key (Play Message) again to hear the complete message.

Message Header

When OnePoint Messenger users call their mailboxes and retrieve messages, the TUI relays the information in the message header fields of each message in this sequence:

- Importance—This information is relayed only if the message is marked urgent.

- Time Stamp
    - The time, if the message was delivered on the same day as it is played
    - The day of week and time, if the message was delivered within seven days of when it is played
    - The day of the week, month, day, and time, if the message was delivered the same year as it is played. If the message was sent in a previous year, the year is noted.

- Sender
    - If the message is from an onsite user, and the recorded name is available, the TUI plays the recorded name. If no recorded name is available, the TUI uses Text-to-Speech (TTS) to play the name entered in the mailbox name field.
    - If the message is from an offsite caller, the **From** field displays "Outside Caller," and the TUI announces this.
    - If the message is an e-mail from an outside system, the TUI uses TTS to convert the sender's name to speech.

Voice and Text Components

When a user is listening to a message, the TUI plays each of the components without any user input. The user can, however, skip forward and back through the message components.

If a message has multiple faxable (text, fax, etc.) components, and the user has the fax delivered to a fax machine, all of the components will be delivered.

Embedded Messages

If a message has an embedded message (the source of a reply or forward), then the TUI plays each embedded message in reverse chronological order when the current message is complete. In this way, users can review a complete sequence of forwarded and answered messages.

Message Disposition

After the TUI plays a message, it provides the following message disposition options:

- Answer (Reply)/Answer All (Reply All)

- Forward Message

- Save Message

- Delete Message

- Fax Disposition (if the message contains faxable components)

- Skip Forward/Back

- Review Message Recipients

For details about these options, see the sections that follow.

Answer/Answer All

When a user answers a message, the original message and all attachments are attached by default to the new message. A message answer is an intentional message (intended to be sent to a mailbox). The user records a voice message, specifies the message delivery options, and sends the message. During this process, the user has access to the Recipient List Review features of intentional messaging, which allows additional recipients to be added.

If the system has the fax feature installed, the user can add one or more fax attachments to the message.

The **Answer All** command works identically to **Answer**, except all recipients of the original message (To and Cc) are included in the recipient list for the answer. The user can add or delete recipients using the Recipient Management features.

Forward Message

The Forward Message process works the same as the Answer and Answer All processes described above, except that the user is forwarding the message to a new recipient rather than replying to the message.

Save Message

When a user saves a message, the message is marked as read and left in the Inbox. The TUI sends confirmation.

Delete Message

If a user deletes a message using the TUI, the message is moved from the Inbox to the Deleted Items folder of the user's mailbox. Purging the Deleted Items folder is a Microsoft Exchange process for which you can set defaults.

Fax Disposition

For fax delivery addressing and routing options, see "Setting Fax Numbers for Users" on page 157 of Chapter 4, which is a detailed discussion of fax services.

Skip Forward/Back

The user can skip forward or back within a message and between messages at any time during message playback. When the user presses [*] while listening to a message, the message jumps back several seconds. The #-key skips forward. If the message contains more than one component, and the skip action moves the user into another component, the component plays from its beginning.

To skip between messages, the user presses [8] and then either [*] to jump back or [#] to jump forward. Pressing [5] (Keep message) has the same effect as the #-key.

Exiting

A user exits from the mailbox session by pressing the key designated as the exit key or by hanging up. If a user quits by pressing the exit key, Telephony Server plays the mailbox's current message enumeration before disconnecting.

Creating Messages

OnePoint Messenger supports two ways of leaving messages for OnePoint Messenger users through the telephone. The typical way is

when the caller calls the telephone of a user who does not answer or whose phone is busy. The PBX routes the call to Telephony Server, which connects the caller to the user's mailbox in a record-only mode. Telephony Server maintains a cache of user information, such as greetings and spoken names. If the user has recorded a greeting, Telephony Server plays it. Otherwise, Telephony Server plays the spoken name along with the phrase "is not available", followed by prompts to help the caller leave a message. If the spoken name is also not available, Telephony Server converts the user's text name to speech, followed by the message prompts.

Intentional Messaging

In addition to the conventional way of leaving messages, OnePoint Messenger users can use any telephone to create and send messages to single or multiple recipients, including system distribution lists. The message creation sequence is as follows:

1 The user accesses his or her own mailbox, then presses the 6-key to make a message.

2 The TUI prompts the user to enter recipient names. If Dial By Name (DBN) is enabled, the user can add recipients by name.

OnePoint Messenger Release 1.1 limits DBN access to mailboxes that are on the current Exchange site. DBN will not list mailboxes that are on replicated Exchange sites.

System distribution lists are accessed either by mailbox number or by DBN. The user enters the DBN for the distribution list, and the TUI confirms the distribution list name in a synthesized voice.

3 The TUI prompts the user to record the message.

4 The TUI gives the user options to amend the message (review it, discard it and re-record, append a recording, add a fax attachment, make confidential or urgent) and to revise the recipient list (press [77]).

Recipient List Management

The TUI Recipient Management menu allows the user to add recipients, delete recipients, and review the message recipients, ordered by recipient type—*To*, *Cc*, and *Bcc*. The TUI plays the name of each recipient. The user can interrupt the recipient playback.

Adding Recipients

The user can add *To*, *Cc*, and *Bcc* recipients. After recording the message, the user presses [#] to end the recording and then [77] to enter the **Recipient Management** menu. When adding recipients, the user can enter the mailbox number of the recipient or select name dialing, then enter the recipient name (last name, then first name).

- To add primary recipients, the user selects **Add** (2-key) from the **Recipient Management** menu and then enters the mailbox number followed by [#] or accesses DBN by entering the DBN code.

- To add secondary and blind copy recipients, the user presses [4] or [5], respectively and enters numbers or names as above.

The 9-key (eXit) returns the user to the previous menu from all user mailbox menus, so when the user is finished reviewing, adding, and deleting recipients in the **Recipient Management** menu, pressing [9] returns him or her to the **Make Message** menu, affording another chance to amend the message.

Deleting Recipients

To delete a recipient, the sender listens to the recipient list until the desired recipient is reached. Press the [3] to delete.

Reviewing Recipients

The creator of an intentional message can review his entered list of intended recipients during message playback but cannot add or delete recipients at this time.

Adding Fax Components

OnePoint Messenger users can attach faxes to a voice message, or they can send a fax to a recipient's mailbox separately. There are three similar methods:

- The user can deliver a "walkaway fax" by simply dialing the recipient's phone number and starting the fax machine before the recipient answers.

- The user can call the recipient's mailbox, listen to the mailbox greeting, and then press [L] (Leave = 5-key) and press the **Start** button on the fax machine.

- After the user has recorded the voice message, he or she can press [L] and start the fax machine.

Addressing Options

Callers can assign additional attributes to their messages as they create them. The Message Addressing Options menu provides three choices from which the user can choose one, two, or all three:

- **Confidential message**: The caller can mark the message confidential. The recipient of the message hears the TUI announce that the message is confidential.

- **Urgent message**: Urgent messages are categorized separately from regular messages. The TUI will play urgent messages before regular messages, and will announce them as urgent.

- **Receipt request**: For each recipient, the OnePoint Messenger caller receives a mailbox notice acknowledging that the recipient has opened the message. The OnePoint Messenger caller also receives notification if a message was not successfully placed in a mailbox.

The user accesses the **Message Addressing Options** menu by pressing [6] in the **Make Message** menu. After pressing a key in the menu, the TUI repeats all of the options, including the ability to press the key again to cancel the flag. The user is prompted to press [9] (for eXit) to return to **Make Message** menu, and [9] again in that menu to send the message.

TUI User Options

Half of the TUI menu structure is devoted to allowing users to set preferences. From the main menu, press [8] to access the **User Options** menu. From the TUI, OnePoint Messenger users can:

- Revise their spoken mailbox name identification.

- Record and set new no-answer greetings.

- Revise passcodes.

- Change default fax numbers and pager numbers.

- Set Inbox options, including:

    - Set the order in which messages are played to the user.

    - Set Text-to-Speech playback—message headers only or complete text.

Fax and Pager Options

From the **Advanced Options** menu, users can access menus to change default fax and pager numbers.The default fax number is the number to which users can have the TUI download faxes and text e-mail messages. The user can also enter *ad hoc* fax numbers to which to route individual messages, either when playing back messages or when creating and sending messages.

The privilege to have fax capabilities is something you grant on an individual basis by creating classes of service on the **Class of Service** node (COS). A Class of Service can include or exclude fax or pager privileges. Then configure the **Fax Settings** and **Pager Settings** nodes of Microsoft Management Console.

The Exchange administrator then uses the **Unified Messaging** tab in Exchange Administrator for each user to assign the appropriate COS and set preferences in the **Fax & Pager** dialog.

In order to be able to utilize fax services, you must have installed a fax card on the Telephony Server. To utilize the various fax and paging services, you also must have obtained and installed the appropriate feature licenses, and assigned the relevant telephony applications to ports using Show N Tel Manager. See Chapter 4 in the *OnePoint Messenger Installation Guide* for details, or see Appendix G (page 329) in this guide for an introduction to Show N Tel Manager.

Mailbox Greeting

Until a user records his or her mailbox greeting, the TUI plays the user's recorded name, and appends "is not available." If no name is recorded, the TUI uses Text-to-Speech to speak the user's name as entered in text in the Exchange mailbox profile. If Text-to-Speech is not available, and the user has not recorded a name or greeting, the TUI says "This mailbox is not available."

You can enable the TUI tutorial for users in each user's Exchange profile, so that, when the user first calls his or her mailbox, the tutorial guides the user through recording a name and greeting. After the greeting is recorded, the greeting is copied to the user's profile cache on Telephony Server and is played for any call that is route to the user's mailbox.

Users can change their mailbox greetings either by calling their mailbox or by using their Unified Messaging tab in Outlook.

Inbox Options

The TUI **Inbox Options** menu lets the user specify the order in which the TUI plays back messages and how much TTS is used in the playback.

The playback sequence choices are:

- Voice messages only

- Voice messages first, followed by e-mail

- Voice messages and e-mail in the order received

There are two TTS options:

- Message headers only

- Full playback of headers and message body

In order for these options to be available, first you must purchase TTS licenses and configure TTS port resources (see the *OnePoint Messenger Installation Guide* and Appendix G here). Then use the **Mailbox Defaults** node of Microsoft Management Console to set the default playback sequence for all users (see "Mailbox Defaults" on page 129), choosing from the options listed above. Then you can design classes of service (see "Class of Service" on page 114) that include or exclude the TTS option. The Exchange administrator can choose from classes of service that include or exclude the TTS option to assign to each user (see Chapter 2, on page 53).

Users who have been assigned TTS privileges can set personal playback preferences by calling their mailboxes and accessing the **Inbox Options** menu, and then the **Text Playback Options** menu. Users who do not have TTS privileges can still reach the same menus, but they hear the message "You do not have this option" when attempting to set a playback option.

New Message Notification

If a new message is delivered to a user while the user is on the phone, the TUI notifies the user of the message based on the following rules:

- No specific operation is interrupted to play the notification message. The notification message is only given in a menu state.

- With the new message notification, the count of new messages is also given (e.g., "two new messages have just arrived").

Validating the TUI Configuration

You can run some simple operational tests to assure that Telephony Server is routing calls and taking messages satisfactorily. To do so, use the TUI both as a user accessing messages and as a caller leaving a message for a user. Also, call your Fax on Demand number both as a user and administrator. For details on Fax on Demand, see "Managing Fax on Demand" on page 158 in Chapter 4.

Test Case 1—Validate Outside Caller messaging:

1   Call a user as an outside caller.

2   Record a message.

3   Send a fax with the message.

4   Verify that the message is in the user's mailbox from both the TUI and the desktop.

Test Case 2—Validate basic messaging from a mailbox:

1   Call into your mailbox.

2   Verify that the TUI correctly announces the number and type of messages that are in your mailbox.

3   Make a message for multiple mailboxes.

4   Verify the message addressing options: change the recipient list; add a distribution list as a recipient, and make the message confidential, urgent, receipt requested.

5   Check to see if all mailboxes receive the message.

Test Case 3—Validate the Answer/Reply functions:

1   Call into your mailbox.

2   Verify that the TUI correctly announces the number and type of messages that are in your mailbox.

3   Answer a message.

4   Request receipt verification.

5   Check to see if the message is received from both mailboxes.

Test Case 4—Validate Forward/Give and Delete/Keep functions:

1   While logged into a mailbox that has messages, forward a message.

2 Check to see if all mailboxes receive the message.

3 Delete one message (3-key) and keep another (4-key).

4 Log out and log in to the mailbox; verify that the correct message has been deleted and the other saved.

Test Case 5—Validate setting user options:

1 While logged into your mailbox through the TUI, change your passcode, name, default fax number, and greeting.

2 Call the mailbox as an outside caller. Verify the changes. Note that DAS does not update the spoken name for up to ten minutes.

3 Log out and back into the mailbox using the new passcode. Verify the new mailbox name.

4 Download text and fax messages to the new default fax number.

Now you can validate the correct operation of individual elements of Microsoft Management Console by following the procedures below.

Validating Microsoft Management Console Settings

Make sure configuration changes that you have made are reflected in the nodes when you reopen Microsoft Management Console (MMC).

Testing the Business Hours Settings

To test the business hours settings, call in to the Telephony Server during business hours and non-business hours and verify that the Automated Attendant (Automated Receptionist) greetings are correct in both cases.

Testing the Automated Attendant

To test the Automated Attendant, call the main number and test operation in the following situations:

• Enter a valid extension and verify that your call is transferred appropriately. If you enter an invalid extension, the Automated Attendant will still attempt to ring the number and will not alert you that it is invalid.

• Enter nothing and verify that the Automated Attendant transfers your call to the operator (during business hours) or plays a non-business hours message (during non-business hours).

• Verify that you can transfer to the operator.

Testing the Dial By Name Settings

To verify that Dial By Name is working properly:

1   Call the main phone number.

2   Enter the assigned DBN prefix to access DBN.

3   Enter names known and unknown by OnePoint Messenger, starting with the last name or first name depending on how you configured DBN.

4   Enter a partial name so that Telephony Server will return more than one match. Then confirm that you can access a mailbox by pressing a single digit to select from the DBN search list (Press 1 for John Doe; Press 2 for John Dow, and so on).

5   If you have set Break on Exact Match, verify that it occurs.

6   Test a no-name match.

Testing the Default Mailbox Configuration

Verify that the default language, TUI, and Inbox options operate as you configured them on the **Mailbox Defaults** node.

To test Text-to-Speech and Message Order settings:

1   Call into a mailbox and listen to messages transcribed by Text-to-Speech using the default order and TTS configuration.

2   In **User Options**, change the user preferences.

3   Log out and back into the mailbox. Listen to messages to verify that preferences have been changed.

Testing the Security Settings

To test the settings you specified on the Security node:

1   Verify that the system does not accept passwords shorter than the specified minimum password length or longer than the specified maximum password length.

2   Create a new mailbox and verify that it is assigned the specified default password.

3   Repeatedly enter an incorrect password while trying to log into a mailbox and verify that the system does not allow you to make any further attempts after the number of attempts you set for Max Failed Logins.

Verifying System Information

Verify the settings you configured on the System Information node:

1   Call the main phone number.

2   Do not enter a user mailbox number when prompted and verify that you are transferred to the Automated Receptionist mailbox.

3   Send a fax and verify that it is delivered to the specified default fax number.

4   Verify that you can reach the operator via the operator extension.

5   Verify the timeout and retry settings.

Troubleshooting – Where to Go Next

If you discover a problem with the TUI operation, you have several options, depending on the type of problem and severity:

•   Use validation tools to run quick tests to verify that components are installed and communicating (see Chapter 6—page 183).

•   The next and more exploratory approach is to set tracing for Telephony Server subsystems using SNT Trace or OnePoint Messenger Trace Manager (see Chapter 7—page 191), and then monitor the related event viewer (for details on the NT Event Viewer, see "Using the NT Event Viewer" on page 243 in Appendix C) while using the TUI.

•   To focus on call progress and telephony application processing, use SNT Trace to set call progress tracing levels and output options (see Chapter 7).

Assessing System Failure

If your OnePoint Messenger system begins to operate poorly after working well, your first question should be "What has changed?" Did you make a configuration change or apply service? If so, consider restoring a backup to see if that solves the problem.

That done, two general sources of failure can be conjectured.

Progressive Failure—If the system works and then begins to fail progressively, the problem is likely to be related to capacity. See Chapter 8 (page 201) on performance monitoring.

Intermittent Failure—If the system works and then begins to fail intermittently, the problem is likely to be related to resource contention.The two tracing programs and the Event Log (see Chapter 7—page 191—and Appendix C—page 243) should help you to isolate this kind of problem. OnePoint Messenger is designed to overcome resource contention, but if contention is suspected, these are the obvious places to look:

- **Client session contention**—The user is logged into a mailbox from more than one client concurrently. More likely, the user has requested some message operation from more than one client concurrently.

- **TUI session contention**—The user logs into the mailbox through the TUI twice without logging out, or the TUI otherwise fails to log out users.

- **Message handling contention**—The TUI is trying to do more than one thing to a message at the same time, such as delete it and play it, or play it and send it to a fax machine, possibly as a result of multiple user requests.

- **Administrative session contention**—The user is logged in, and Exchange and/or Telephony Server tries to modify elements that comprise the user profile.

PONG Overview

PONG (Post Office Network Gateway) manages the interface between Telephony Server and Exchange. As a OnePoint Messenger administrator, you need to be concerned with PONG only if the automatic installation and configuration of the software fails. In such a case, you can inspect the Windows registry entries and the Event Log for errors. These procedures are described in the following sections.

Troubleshooting PONG Client Installation

PONG Client must be properly installed for normal operation. The installation of the PONG Client is part of the OnePoint Messenger platform installation, so it should install transparently. If it does not, follow the steps below.

To install PONG Client manually:

1 Install the following DLLs prior to installing PONG Client. Put them in a directory on the system path.

- cvCommonU.dll

- cvTraceSystemU.dll

- ATL.DLL

2   Ensure that PONG Server is installed on either the same system or on a system accessible via the LAN. PONG Client is dependent on prior installation of PONG Server.

3   Make sure that the Telephony Server has an Exchange profile, and that it is set up to access the OnePoint Messenger Service Account on the Exchange Server.

4   Register PONG interfaces by running regsvr32.exe on cvPONG-ClientU.dll.

5   On the command line, type:

```
regsvr32 cvPONGClientU.dll.
```

This forces the PONG Client object interfaces to be registered on the current computer.

6   If you have a problem with communication between Telephony Server and Exchange, check that the following keys have been registered correctly and located in the registry directory \\HKEY_LOCAL_MACHINE\SOFTWARE\Baypoint\OnePoint Messenger\PONGClient.

SA: Post office service account profile name

SAPW: Post office service account profile password

This information should install automatically. It is required by the PONG Client and must be configured in the system registry prior to running an instance of the PONG Client. Otherwise, incorrect data will be used, and the Client will not produce the desired results.

If the above information is not registered correctly, you can either reinstall the product through the CD, or you can manually register the information.

Troubleshooting PONG Server Installation

PONG Server depends on the following dynamic link libraries for proper operation:

- CvProxy.dll

- CvCommonU.dll

- CvMailLibU.dll

These files must be located in one directory, which you determine during installation. Make sure that the directory that you chose appears in the default pathname, so that Windows can find the files at runtime.

To check the path statement:

1 Open the Control Panel System applet, as shown in Figure F-1.

Figure F-1   Control Panel, System Applet
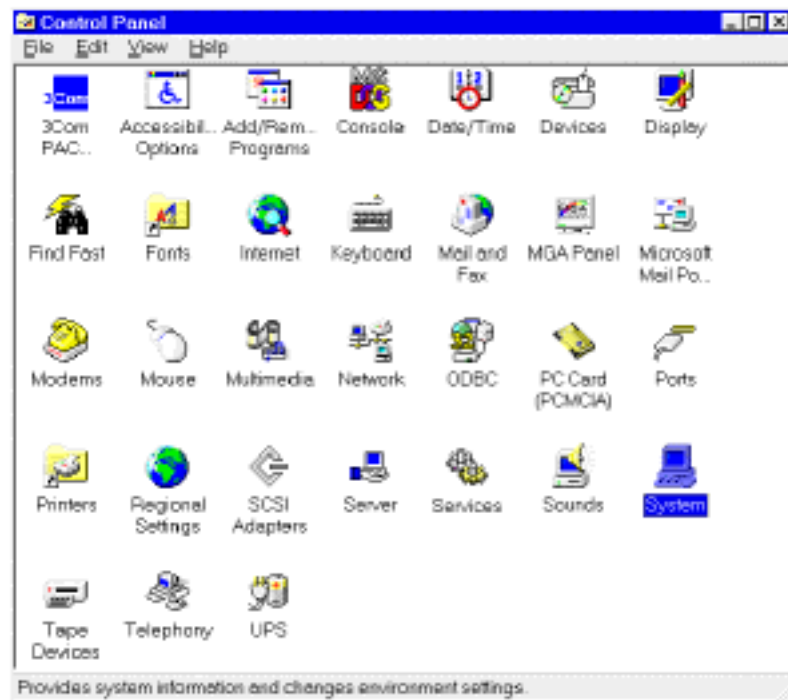
2 In the System applet, select the **Environment** tab, then, in the **System Variables** list box, select **Path**, as shown in Figure F-2.

Figure F-2   Control Panel, System Applet, Environment Tab
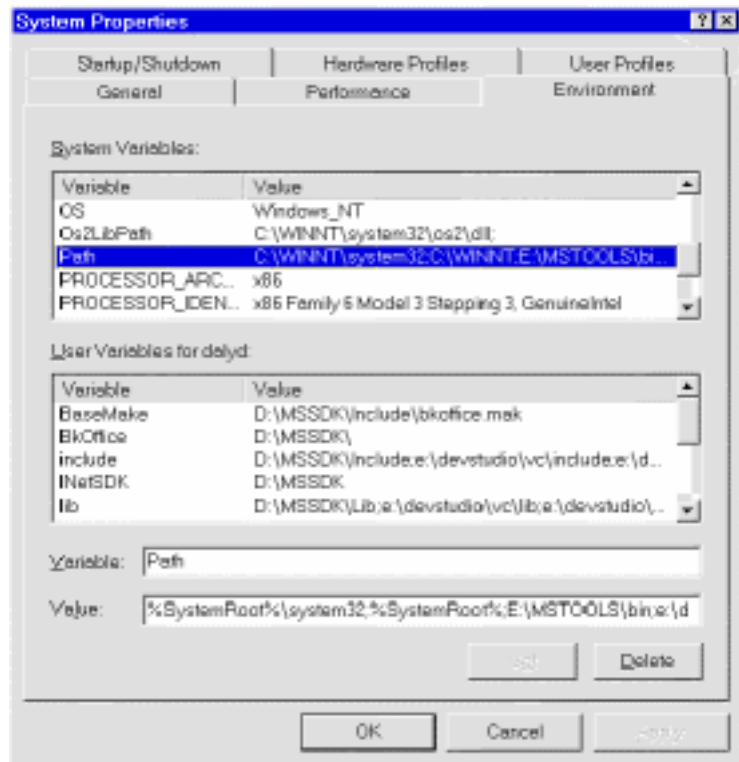
3 Click the path statement in the **Value** field.

4 Verify that the path to the OnePoint Messenger system DLLs is listed correctly in the **Value** field.

5 If necessary, press the left and right arrow keys to scroll the path statement in the **Value** field.

If the pathname does not appear, you can enter it to see if that solves your problem, but the absence of the entry suggests other problems. Consider reinstalling.

Troubleshooting Telephony Server Communication with Exchange

If Telephony Server is running but does not communicate with Exchange, check that the correct Exchange Server host name is registered as the mail transport in the Mail and Fax applet in the Control Panel.

To check the Exchange profile created for PONG:

1 Open the **Control Panel** and double-click the **Mail and Fax** icon to display the Mail and Fax window.

2 Click **Show Profiles** to display a list of the current profiles.

3 Double-click the profile created for the OnePoint Messenger system to display the OnePoint Messenger Post Office Properties window.

   NOTE: If no OnePoint Messenger system profile exists, you must create one. See "Creating an Exchange Profile" on page 322 in this chapter for details.

4 Select the **Services** tab and verify that it lists Microsoft Exchange Server and Personal Address Book, as shown in Figure F-3.

   Figure F-3   Mail and Fax Applet, Services Tab
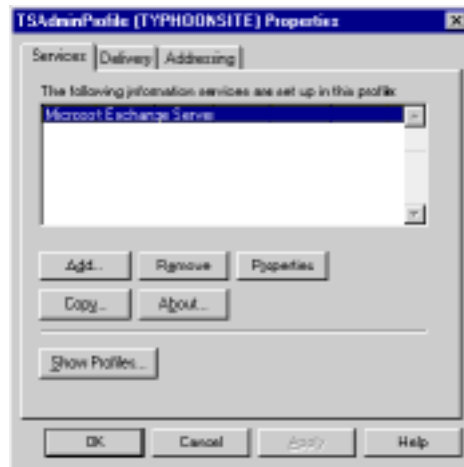
5 Select the **Delivery** tab, then verify that it lists Microsoft Exchange Transport and Microsoft Exchange Remote Transport, as shown in Figure F-4.

Figure F-4   Mail and Fax Applet, Delivery Tab
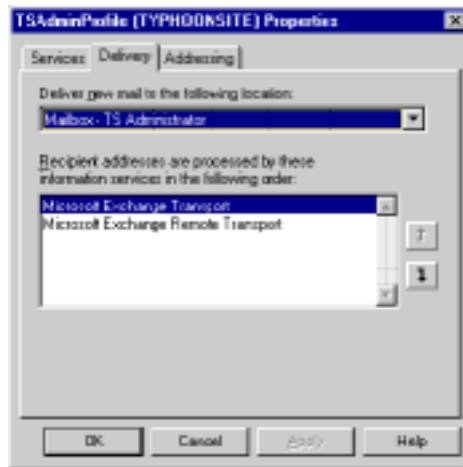
6   Select the **Addressing** tab and verify the Personal Address Book and Global Address List, as shown in Figure F-5.

Figure F-5   Mail and Fax Applet, Addressing Tab
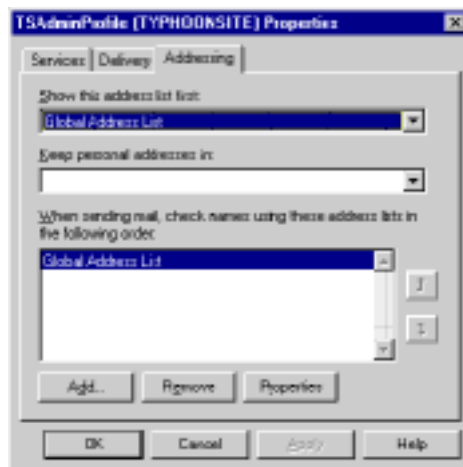
If the profile does not exist or these values are not set, see "Creating an Exchange Profile" on page 322 of this chapter.

Verifying PONG in the Windows Registry

PONG Server is registered automatically. It operates as a Windows NT service. Make sure that the following Registry entries have been added:

- HKEY_CLASSES_ROOT\CLSID\B12E5A84-142D-11d1-B2B8-006097D2CE33\LocalServer\{path}pongsrv.exe

- HKEY_CLASSES_ROOT\Baypoint.Mail\Baypoint Mail

- HKEY_CLASSES_ROOT\Baypoint.Mail\Clsid\B12E5A84-142D-11d1-B2B8-006097D2CE33

- HKEY_CLASSES_ROOT\CLSID\B12E5A84-142D-11d1-B2B8-006097D2CE33\PONG Service

- HKEY_CLASSES_ROOT\CLSID\B12E5A84-142D-11d1-B2B8-006097D2CE33\AppID\0bf52b15-8cab-11cf-8572-00aa00c006cf

- HKEY_CLASSES_ROOT\CLSID\B12E5A84-142D-11d1-B2B8-006097D2CE33\ProgID\Baypoint.Mail

- HKEY_CLASSES_ROOT\APPID\0bf52b15-8cab-11cf-8572-00aa00c006cf\PONG Service

- HKEY_CLASSES_ROOT\APPID\0bf52b15-8cab-11cf-8572-00aa00c006cf\LocalService\PONG Service

- HKEY_CLASSES_ROOT\APPID\0bf52b15-8cab-11cf-8572-00aa00c006cf\ServiceParameters\-OLE

Creating an Exchange Profile

PONG Server needs an account on Exchange and must set up a profile (a description of the mail services that it uses) on its host. That configuration is handled automatically in the OnePoint Messenger installation routine, but you can set and recheck the settings if necessary for troubleshooting. If the installation program has not automatically installed an Exchange profile for PONG, create one.

To create an Exchange profile for PONG:

1   Open the **Control Panel** on the Telephony Server and double-click the **Mail and Fax** icon.

2   Click **Show Profiles** to display a list of the current profiles.

3   Click **Add**. The first window of the Microsoft Exchange Setup Wizard appears, as shown in Figure F-6.

Figure F-6   Creating an Exchange Profile Service
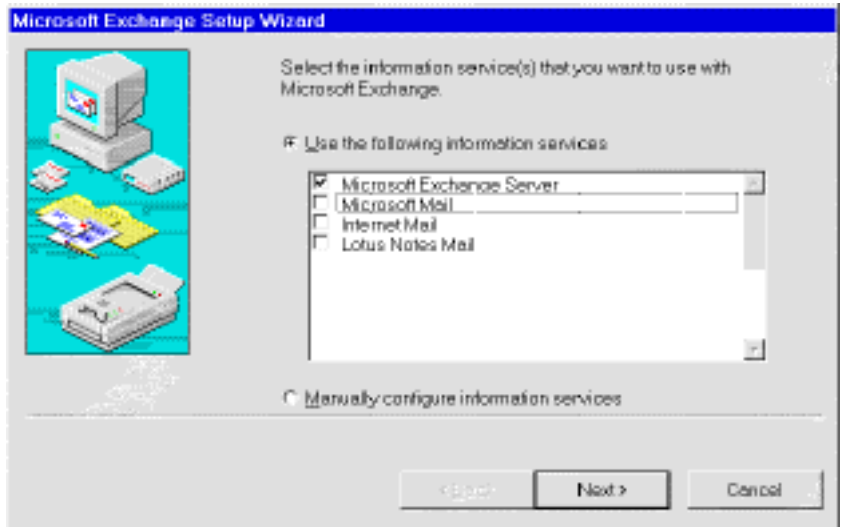
4   Select **Use the following information services**.

5   Clear all the check boxes except **Microsoft Exchange Server**.

6   Click **Next** to display the next window, shown in Figure F-7.

Figure F-7   Creating an Exchange Profile Name
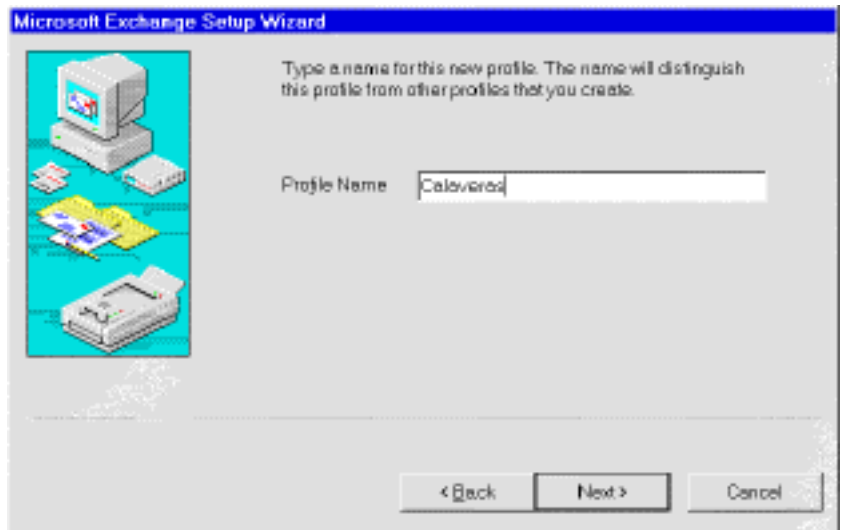
7   Enter a **Profile Name**.

8   Click **Next** to display the next window, shown in Figure F-8.

Figure F-8   Creating an Exchange Profile, Server and Mailbox Name
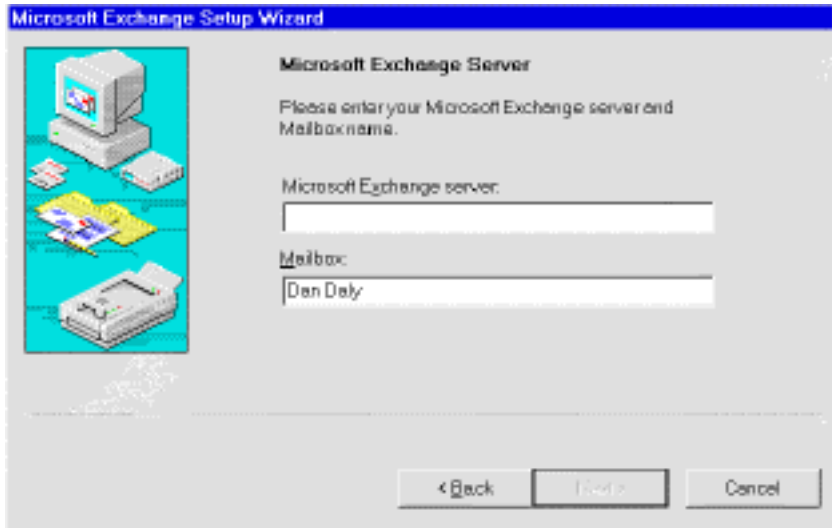
9   Enter the name of the primary **Microsoft Exchange Server**.

10 Click **Next** to open the window shown in Figure F-9.

Figure F-9   Creating an Exchange Profile, Setting Travel Options
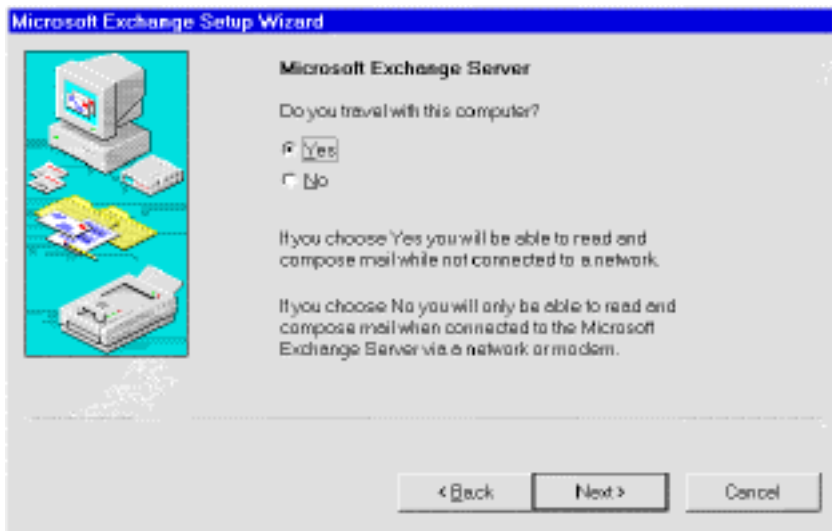
11 Select **Yes** to set up the profile so that you can read and compose mail even when you are not connected to a network.

12 Click **Next** to display the window shown in Figure F-10

Figure F-10   Creating an Exchange Profile, Path to the Local Address Book.
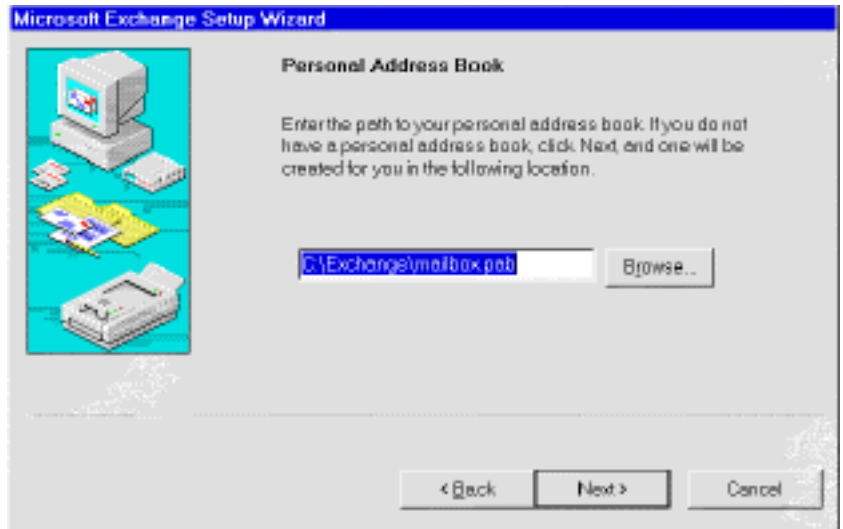
13 Enter the path to the local Address book if it exists, or choose the default path, or click **Browse** to point to the path.

14 Click **Next** to display the window shown in Figure F-11

Figure F-11   Creating an Exchange Profile, Startup Options.

15 Select the "Do not add to the Startup group" radio button.

16 Click **Next** to display the window shown in Figure F-12

Figure F-12   Creating an Exchange Profile, Verifying Services.
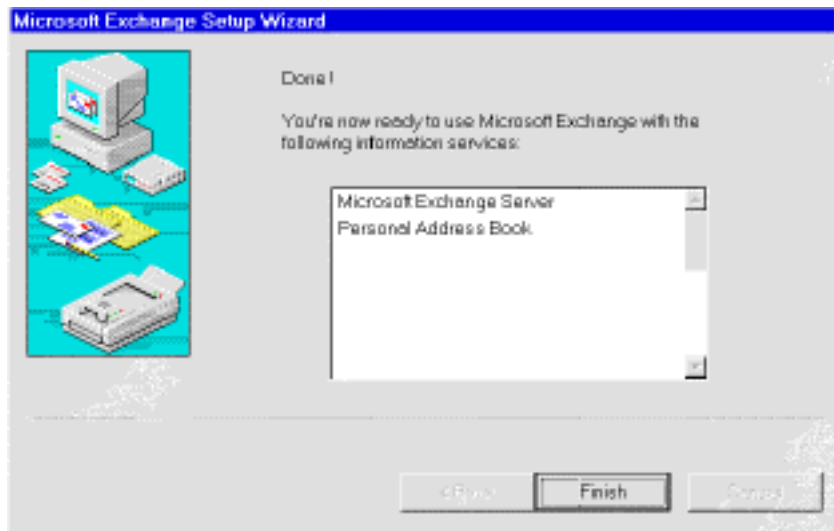
17 Make sure that both Microsoft Exchange Server and Personal Address Book are listed as services in the profile.

18 Click **Finish** to complete the profile.

Your profile should now appear in the Mail and Fax applet. You can review and modify your settings on the **Properties** tab.

Error Logging

The PONG Client logs all fatal errors and warnings (non-fatal problems) to the Windows NT Event Log. To view the Event Log, use the Event Viewer application. For a list and description of the events recorded by PONG in the Event Log, see "Using OnePoint Messenger Event Codes" on page 247 in Appendix C.

Tracing

You can use the OnePoint Messenger Trace Manager to trace all aspects of the PONG Client's operation, including the following objects:

- PONG Client (entire component)
- Top-level interface
- Recorded Message object

- Playback Message object

For details on using OnePoint Messenger Trace Manager, see "Using OnePoint Messenger Trace Manager" on page 195 of Chapter 7 in this guide. Examples of PONG trace messages appear in "Post Office (PONG) Event and Trace Message Table Examples" on page 249 of Appendix C. .

Appendix G.   Show N Tel

The chapter from the *Show N Tel User's Guide* that appeared in this appendix in earlier versions of the book has been removed because of space limitations. For information on Show N Tel, see the other discussions in the OnePoint Messenger guides, as summarized below. Also, the OnePoint Messenger CD-ROM contains Brooktrout Technology's *Show N Tel Manager System Administrator Guide* in PDF format, saved as sntmgrguide.pdf, and *Getting Started with Show N Tel*, stored as sntgetstart.pdf. The books contain details on the use of Show N Tel Manager and appendixes on line and fax card hardware settings.

NOTE: Use the SNT Trace interface included with OnePoint Messenger instead of following the tracing directions given in the *Show N Tel* documentation. See "Using Trace Facilities" on page 191 of Chapter 7 of this guide.

For sources of more information from Brooktrout, see "Brooktrout Technology" on page 238 in Appendix B here. The Show N Tel development kit, which is included in OnePoint Messenger but for which you need a separate license, provides an interface to design call management applications that can be assigned to line card ports or be invoked from OnePoint Messenger Single Digit Routing menus.

Operation of Show N Tel on Telephony Server

Chapter 4 of the *OnePoint Messenger Installation Guide* contains the procedures for configuring telephony services in Show N Tel Manager (SNT), which is installed by OnePoint Messenger. SNT is used to integrate the Telephony Server with a telephony switch (PBX), including allocating telephony applications—fax, voice, message waiting, and TTS services—to line ports. Specifically, it covers:

- CTI (computer-telephony integration) configuration using the Switch/CTI and Device Map tabs of Show N Tel Manager

- Line applications, including ActiveCall, AutoRecep (Automated Receptionist/Automated Attendant), Fax on Demand, Message Delivery, Notification Server, and Telephony Server (in this case, the name of a general purpose "telephony application" that provides access to the Automated Attendant, Message Center, TTS, Fax on Demand, etc.)

- Starting and stopping individual applications and lines

- Reassigning applications to ports

- Configuring and testing Notification Server, including:

    - Modifying the phone system definition to accommodate Notification Server

    - Using the Phone System tab and its subsidiary Feature Definitions and Configure CTI tabs

    - Setting up Notification Server with Mitel Mitai B-Channel for the Mitel SX-2000

    - Assigning versions of Notification Server for Call-Me, message notification by page, and telephone MWI

After the initial configuration, there can be several kinds of conditions that could make you decide to revise that configuration. They include:

- Adding more line or fax ports

- Purchasing more OnePoint Messenger feature licenses of one type or another (see Chapter 9 here or Chapter 5 in the *OnePoint Messenger Installation Guide*.)

- Experiencing changed demand for certain services, such as pager notification of messages

SNT Operate and Monitor and TSMon

Show N Tel provides the Operate and Monitor interface for starting, monitoring, and stopping applications on individual lines, and for starting and stopping all lines at once. You can use Operate and Monitor for individual lines, but for stopping Show N Tel, you should use Telephony Server Monitor (TSMon), as described in Chapter 5 ("Operation and Maintenance" on page 165) of this guide.

Glossary

This glossary includes product nomenclature and telephony terms that appear in this guide. Although it includes relevant Microsoft Windows and Microsoft Exchange terms, it does not cover all terms related to components in the OnePoint Messenger environment.

B   C   D   E   F   G   H   I   J   K   L   M   N   O   P   Q   R   S   T   U   V   W

A

ACD (Automatic Call Distributor) A specialized phone system used for handling a large number of incoming calls, which includes recorded announcements, routing, and call data logging.

ACM (Audio Compression Manager) Microsoft format for a coder/decoder which can be used by all applications in the system.

Active Call Handler A OnePoint Messenger telephony application, running in Show N Tel Manager on a Telephony Server port to support the Mitel Active Call CTI system.

Active Server Pages (ASP) Component of Internet Information Server providing HTML conversion of Exchange data on the fly. OnePoint Messenger augments the ASP code to handle OnePoint Messenger messages.

Address book A database that contains the names and numbers of people with whom one can exchange messages. The Microsoft Exchange Address Book displays recipient names (mailboxes, distribution lists, custom recipients, and public folders) in the directory. The Address Book can contain one or more address lists.

Administrator Person responsible for day-to-day server implementation, changes and maintenance.

Administrator's mailbox Special mailbox belonging to the administrator, with system-wide abilities.

ADPCM (Adaptive Differential Pulse Code Modulation) Speech encoding method which produces a digital signal with a lower bit rate than standard pulse code modulation (PCM). ADPCM calculates the difference between two consecutive speech samples in standard PCM-coded telecom voice signals.

Analog networking Networking scheme that reconverts voice messages to analog signals for transmission between two or more voice messaging systems. Voice messages are sent over regular telephone lines.

ANI (Automatic Number Identification) Almost synonymous with Caller ID.

Annotating Adding a comment to someone else's message in the course of responding to or forwarding it, by adding text or voice, or adding text and graphics to a fax image.

Answer To send a new message to a user in response to the original message.

Antecedent message Message that precedes the current message in a reply chain, including forwarded messages. A reply chain is distinguished by a common subject line.

Anti-aliasing A View Fax feature that enhances the appearance of a fax image by making it smoother and easier to read.

API Application Programming Interface.

Append To add comments to the end of a message.

Application A computer program used for a specific type of work, such as electronic mail.

Application form A program that is invoked by Microsoft Outlook to display messages of a given Message Class. This program is typically implemented in C or C++.

Application window The window containing the menus and work area of an application.

Apply In System Service Tool, the process by which a Service Bundle is installed.

Archive To save a file for future use or reference.

Arrow cursor The arrow-shaped pointer on the screen that follows the movements of the mouse. The arrow cursor changes shape while some actions are taking place. Compare to selection cursor.

Arrow keys The four keys on the keyboard that show arrows pointing up, down, left, and right. You can use these keys to navigate in dialog boxes and windows.

Asynchronous In the context of OnePoint Messenger, asynchronous actions are those which do not necessarily occur while the user interacts with the system, such as when Exchange delivers messages to another mail server.

Attendant Person responsible for handling live telephone calls, such as a switchboard operator.

Attendant mailbox Exchange mailbox assigned to the Attendant function on the System Information page of TS Admin. The mailbox collects messages from callers who do not respond to prompts to enter a mailbox or extension number.

AutoRecep OnePoint Messenger application that runs in Show N Tel manager on dedicated ports to manage call transfers to the Automated Receptionist service of OnePoint Messenger.

Automated Attendant An automated service, part of Telephony Server, which greets callers and instructs them on how to proceed. See also Single Digit Routing.

B

Backup program included with Windows NT for performing backups. See Chapter 9 in this guide.

Base install (also **Install**) The installation of the full OnePoint Messenger product for the first time. This process is handled by the OnePoint Messenger Installation Program, not the System Service Tool. The OnePoint Messenger Installation Program utilizes a SST commandline interface to enter the Base Install Service Event in the Service History database.

Blind transfer The transfer of a call is made without telling the recipient who is calling.

Browser World Wide Web browsers are programs designed to navigate the Internet using the HTTP protocol. Exchange supports browser access to its folders by passing data through an HTML conversion filter and Internet Information Server.

BundleID A text string used in System Service Tool to uniquely identify a OnePoint Messenger service bundle; System Service Tool uses it as the common portion of file names for the internal Bundle Control Files in manipulating Service Bundles, as well as the file name for the Service Bundle itself.

Busy Hour A method used to calculate the number of ports required when sizing a system. It represents the busiest hour of the day, when the volume of calls generated by internal subscribers and external callers reaches its peak.

C

Calaveras OnePoint Messenger project name, alluding to the jumping frogs of Calaveras County and the goal to leapfrog the competition.

Callers People who do not have voice mailboxes on the server, also called "outside callers." Callers usually have fewer call processing options than users (mailbox owners). Callers can call in to extensions, route their calls to other extensions and listen to greetings; they may also be able to leave messages**.**

Call Me (or Call-Me) A messaging mode, implemented in OnePoint Messenger, in which users play and record messages by having the desktop messaging application call their telephones. See also **Meet Me**.

Call screening A call answering option that filters calls by caller ID and lets the callee know about the caller, or occasionally requires callers to announce themselves before a subscriber answers the call.

Cascade The act of overlapping windows on the desktop in a way that lets you see the title bar of each window. You can cascade your personal message folders and Inbox. Compare to Tile.

Centrex Derived from **"**Central Exchange"; a business telephone system where the equipment is at the CO instead of at the customer site. Contrast with CPE.

Centum Call Second (**CCS**) A unit of measurement of call length. The formula is the number of calls per hour multiplied by their average duration in seconds, multiplied by 100. A centum call second is 1/36th of an erlang.

Check box An element in a dialog box that you can activate or deactivate. When there is an X in the box, it is activated; when the box is empty, it is deactivated.

Choose See **Click**.

Class of service A category used to determine a subscriber's access to system options and features. The administrator assigns a class of service to each subscriber.

Click OnePoint Messenger books use the word "click" for obvious, square buttons, "select" to open a property page (tab) and choose options on it, and "choose" for menu items,

Client application A user application that runs on a desktop computing device, requests services from a network server, and performs local processing.

CO (Central Office) Central switching office at a telephone company.

Codec Software for sound compression and decompression; also used casually for referring to the sound formats supported by OnePoint Messenger. See GSM, G.711, G.721, G.726, ADPCM, IMA ADPCM, OKI, Raw PCM, TrueSpeech.

Collapse To hide subordinate items in a hierarchical list. For example, you can collapse a compound message so that the items it contains are hidden. Compare to expand.

Command A word or phrase you can choose from a menu. When you choose a command, a specific action is performed.

Compound message A software "envelope" that can contain multiple voice and fax messages. Technically, all OnePoint Messenger unified messages that contain a voice or fax attachment are compound messages. In practise, "compound

message" is used to identify unified messages that contain more than a simple voice or fax attachment.

Confidential A message delivery option that prevents a recipient from sending a message to other recipients. You can select the Confidential delivery option when you make, give, or answer a message.

Control menu A menu containing commands that you can use to manipulate the window. You use the Control-menu icon to open the Control menu.

Control menu icon The icon that opens the Control menu of a window. This icon is always located in the upper left corner of the window. Control menus allow you to minimize or maximize the window and to save its current size, location, and appearance.

Corrective maintenance (or **corrective service**) New or replacement software modules distributed to correct known problems.

CPE (Customer Premises Equipment) Equipment at customer's site.

Crystal Reports Runtime version of Crystal Reports reporting program is included with System Reporting Program (SRP) as part of the OnePoint Messenger RAS suite.

CTI Computer-telephony Integration. See Chapter 4 in the *OnePoint Messenger Installation Guide*.

Current Level (also **Current Service Level**) The most recently installed OnePoint Messenger service level on a customer system.

Cursor The on-screen pointer to indicate the location at which text is inserted when you type.

cvNotify OnePoint Messenger utility that tests the correct operation of Notification Server. See Notification Server.

D

DAS Directory Access Service. See Appendix A.

Day and night programming A feature of the OnePoint Messenger Telephony Server Administration application that sets the work schedule and handles certain situations such as a user wishing to speak to an attendant.

DBN See **Dial-by-Name**.

DCOM (Distributed Component Object Model) Microsoft method of communicating between applications. OnePoint Messenger uses DCOM to communicate between client computer and server applications.

DDD (Direct Distance Dialing) Telephone calls placed over the public telephone network.

Default The value a parameter takes if not specifically changed by the administrator or the user.

Dial-by-Name (DBN) A method of addressing that enables a telephone caller to enter the recipient's name on the keypad.

Dialing plan (or Dial Plan) A numerical structure of how mailbox numbers are assigned, and their length. Also used to determine which digit implements a capability, such as call placement.

Dialog box A box that requests information from you or reports what the application is doing.

DID (Direct Inward Dial) routes outside calls to a specific station without operator or attendant assistance. For OnePoint Messenger, DID is the mechanism used on the receiving end to transport the fax into the subscriber's mailbox.

DIL (Direct In-Line) an outside caller can reach a specific extension by dialing the seven-digit telephone number. The caller does not go through an attendant or switchboard.

Dimmed A grayed image of a command or option indicates that it is not available as a choice at that point in the application. You cannot choose a dimmed command or option, and you cannot type in a text box with a dimmed label.

DIP switch (Dual In-line Pin) A switch block on a card that contains two to eight tiny on/off toggles.

Directory Access Service (DAS) An application on Telephony Server that runs as a service, maintaining and automatically updating a local RAM cache of user mailbox information pulled from Exchange.

Directory Initialization A program on Telephony Server that allows manual invocation of the Directory Access Service synchronization process.

Distribution list A list of recipients that you can send messages to simultaneously.

DMID Digital Meridian Integration Device. A device that provides integration with Northern Telecom switches, such as the Meridian M-1. The DMID physically sits between the PBX and the voice server and appears as one or two digital telephones to the PBX, depending on the number of analog ports required. Analog line circuits for the voice path appear on the digital set of the DMID. When a call is received on the DMID it simultaneously rings at the analog port. The DMID interprets the call display information and transmits it to the voice server which answers the caller with the appropriate personal greeting.

DN (Directory number) Telephone number; DN is also an abbreviation of Distinguished Name, a Microsoft Exchange term.

DNS Domain Name System.

Domain When used in the context of "OnePoint Messenger domain," it means OnePoint Messenger servers and client computers served by those servers. A "Windows NT domain" contains a Windows NT Server Primary Domain Controller for storing user account permissions and network passwords to control access to network resources. For optimal operation of OnePoint Messenger, the two types of domains should coincide. See Chapter 1 for details.

Double-click To quickly press and release the primary (usually left) mouse button twice, causing an action to be performed. For example, when you double-click on a message in the Inbox, the message box opens.

Download To copy a file from a server to a local drive; regarding mail, OnePoint Messenger users connecting to their mailboxes on Exchange see lists of their messages. Only when they click on a message does the message download.

Drag and drop To hold down the left mouse button, move the mouse to another location, and then release the mouse button. The drag-and-drop action copies or moves selected items from one location to another. For example, you can use the drag-and-drop technique to attach a file from Windows Explorer to a new message you are creating in your Outlook Inbox.

Drop-down box A box in a dialog that has a down arrow button that you click to open a list of options. Choose an option from the list by clicking the option with the cursor.

DTMF tone (Dual Tone Multi Frequency). A combination of two tones that uniquely identify each of the sounds created by pressing the keys on a pushbutton telephone.

E

E-mail A method of sending and receiving text messages through your computer.

Enumeration See Mailbox Enumeration.

ESMDI (Enhanced Simplified Message Desk Interface) Standard call data packet format used in Centrex applications, with additional features not found in SMDI.

ESMTP Extended Simple Mail Transfer Protocol.

ESS (Electronic Switching System) Switching equipment used in Bell System central offices.

Event A significant occurrence in a voice mail system that is of interest to an administrator for diagnostic or reporting purposes.

Exchange (also **Exchange Server**) Used in OnePoint Messenger documentation as shorthand for Microsoft Exchange mail server, either version 5.0 or 5.5, which is server software residing on a Windows NT Server 4.0 computer and providing e-mail routing and storage services to OnePoint Messenger.

Exchange Extension OnePoint Messenger adds an Exchange Extension to Exchange to provide unified messaging. "Extension" is a Microsoft term meaning

3rd-party code that can be added to Exchange through an attachment function.

Exchange Server Used to describe both the mail server software and the computer used to house the software. OnePoint Messenger documentation differentiates by using "the Exchange Server" when referring to the computer. See also Primary Exchange Server, Secondary Exchange Server, and Server Replication.

Exchange Site One or more Microsoft Exchange servers, that work together to provide messaging and other services to a set of users. Within a site, users can share information and can be managed as a collection. A Microsoft Exchange site can be mapped to the Windows NT domain topology that has already been established. It can also span multiple trusted Windows NT domains that may already exist.

Expand To show subordinate items in a hierarchical list. For example, you can expand a compound message to show its attached messages. Compare to collapse.

Extended menu A menu that extends horizontally from a main menu and presents additional choices.

F

Facsimile A graphic representation of a document. **"Facsimile"** is usually shortened to **"fax."** See Fax.

Fax A graphic image, such as text or a picture, that is delivered by means of signals sent over analog telephone lines.

Fax broadcasting Sending a fax message simultaneously to a group of users using a distribution list.

Fax card A card that plugs into the PC bus to convert digital ASCII text into a standard analog fax image. The Brooktrout fax card supported on OnePoint Messenger requires an MVIP bus link to a line card in order to route faxes to recipients through a telephony switch.

Fax mail A method of delivering fax messages.

Fax on Demand 1) (AKA Faxback) Telephony Server service that provides a list of faxable documents that users can access by selecting a number from a list after calling a designated telephone number.

2) A OnePoint Messenger telephony application, running in Show N Tel Manager on a dedicated Telephony Server port to manage callers' communication with the Fax on Demand service.

Fax Print Driver Formally known as **Unified Fax Printer**, the driver allows you to use the Print menu of any Windows application to create a multi-page TIFF fax image of the active document. Fax Print Driver spawns an Outlook mail form to which it attaches the fax image.

FCOS (Features Class of Service) Combination of features assigned as a class to a user; by assigning an FCOS to a mailbox, the administrator determines what capabilities that a mailbox has.

File format The format in which data is stored in a file. For example, you can save voice messages in .WAV format and fax messages in .TIF format.

Folders See Personal message folders*.*

Forward Unified One of the OnePoint Messenger new message options, invoked by the Forward Unified button or command in Outlook. It opens a OnePoint Messenger new message form, with the selected message attached.

G

G.711 Pulse Code Modulated (PCM) digital audio encoding format; at uncompressed 64kbps, one of the storage formats supported on Exchange by OnePoint Messenger.

G.721 64kbps digital audio encoding format, predecessor to G.726

G.726 ADPCM audio encoding format required by RFC 2421 for VPIM transmission.

Give To forward an existing message to another user.

Grade of Service The probability, expressed as a percentage of callers who call during the Busy Hour, that an incoming call will be blocked (the caller will hear a busy signal) because all ports are in use.

Greetings Information meant to welcome callers when they reach the Automated attendant application or a mailbox. Typically, callers hear a general company greeting, directions for using the system and a greeting from a user when they call from outside the system. administrators, attendants and users can record greetings.

Group A Windows NT account group is comprised of users who, by assignment to the group, have the rights assigned to the group. Use the program User Manager for local rights or User Manager for Domains for network rights.

Grunt Detection A requirement to make a sound in order for the Telephony Server or linecard to recognize that the phone has been taken off hook.

GUI Graphical User Interface.

H

Hard play prompt An instruction from the Automated Attendant application that cannot be interrupted by pressing a key on the telephone keypad. The keypress must send a DTMF tone before it will interrupt the instruction. See also Prompts.

Hot Fix A temporary fix for a single problem. Hot fixes comprise the lowest level of service to a OnePoint Messenger system. Hot fixes come in two versions: general availability (also known as GA or Released) and site specific. General availability hot fixes are applicable to all OnePoint Messenger installations (although some may depend on configuration) and will be made available through normal channels. Site specific hot fixes apply only to a limited number of OnePoint Messenger installations (potentially as few as one site) and will be made available only on an as needed basis.

HTML (HyperText Markup Language) Tags used to create linked documents readable by WWW browsers.

Hunt group A group of telephone lines where the incoming calls are distributed according to a priority scheme.

I

Icon A small graphical representation of an object or an action that you click on to execute a command.

Idle mailbox A mailbox that has been created and assigned but which has not yet been logged into.

IMA-ADPCM One of the formats that OnePoint Messenger administrators can choose to store unified message voice attachments on Exchange. See also **G.711**.

Imaging for Windows 95 (and **Imaging for Windows NT**) Software application used to render OnePoint Messenger fax TIF images; it is a product of Wang Laboratories bundled with Windows.

IMAP, IMAP4 (Internet Messaging Access Protocol v. 4) (RFC1730) E-mail access protocol that allows folders and the ability to scan message headers to selectively download messages.

In-band Signaling A method of connecting the Telephony Server to the PBX as if it were a series of single line telephones or a series of trunks in a hunt group. "In-band" is used to indicate that the call identification information is passed from the PBX to the Telephony Server using DTMF (touch-tone) signals on the same line as the voice connection.

IIS See Internet Information Server.

Inbox The Outlook folder in which your incoming messages are stored.

Install To load a particular piece of hardware or software onto a PC. See also **Base Install**.

Integration Hardware and software used to interface the server with a specific PBX or switch. Allows the application to know what telephone number was originally dialed, for example.

Internet Explorer Version 4.0 or higher, from Microsoft, is one of the two Web browsers, along with Netscape, supported by OnePoint Messenger for providing Web access to Exchange messages.

Internet Information Server (IIS) Microsoft Internet Information Server is a Web server that provides conversion of Exchange messages into HTML for delivery on the Internet. IIS is bundled with NT Server. See Chapter 1.

.IVM A file extension used for Windows multimedia format audio data.

J

Jumper A dual row of pins on a card that accept a connector that straddles a pair of adjacent pins, one in each row, to make an electrical connection between them that signals the selection of an operational option.

K

Keep The ability to store a message for future playing.

Keep alive signal A signal that is issued by a process at regular intervals to convey to a hardware or software watchdog that operation is normal.

Keypad The set of push-button on a telephone set.

L

LDAP (Lightweight Data Access Protocol) Internet front-end to X.500 directories.

License Install OnePoint Messenger GUI utility for monitoring the number of feature licenses of the various types (TTS, users, fax, Web, etc.) installed on OnePoint Messenger's Telephony Server, and for managing the installation of new licenses.

Line Telephone line input to a port.

Line card Hardware circuit board in a server with ports for each telephone line.

List box A box in a dialog box that contains a list of available choices. If all the choices do not fit in the list box, it includes a scroll bar that lets you move through the list.

Local Mailbox Number A method of addressing voice messages through the telephone user interface to recipients in a voice mail domain.

Login (**log in** as the verb form, or **log on**) The process of entering a (1) passcode from the telephone keypad to use various server functions or access a mailbox, or (2) user ID followed by a password at a computer console to gain access to a mailbox or a computer.

Logout (**log out** as the verb form**, or log off**) The user's process of exiting (1) a mailbox by entering the proper command from the telephone keypad, (2) a computer. To log out (or log off) differs from shutting down a Windows computer in degree.

M

Mailbox The area set apart for each user's messages, distribution lists, and other personal folders on Exchange.

Mailbox enumeration Summary of Inbox messages announced by the TUI to a mailbox caller, listing the number of new messages by type—new, urgent, saved voice, text, fax.

Mailbox password (passcode) A mailbox security feature that requires a numeric security code to verify a mailbox owner's access to a mailbox. Users enter a password from the desktop, a passcode from the TUI.

Mail server Server software responsible for collecting, storing, and forwarding e-mail; in the OnePoint Messenger environment, Microsoft Exchange is the mail server. Because computers that act as repositories for files or server software are also called servers, "mail server" can be ambiguous, but in the OnePoint Messenger environment, Exchange is on a separate Windows NT computer from the Telephony Server, so "mail server" can refer accurately to both the Exchange software and its host computer. OnePoint Messenger books refer to the mail server as the Exchange Server. See also **Exchange Server**.

Main Menu The first and top-level set of choices that the application offers, typically a menu bar in Windows applications.

MAPI Mail (or Messaging) Application Programming Interface; part of Microsoft's Windows Open Systems Architecture used by Exchange to provide messaging application component modularity.

Maximize To enlarge a window to its largest possible size; to maximize a window, click the Maximize button at the right end of the title bar, or choose the **Maximize** command in the window's **Control** menu.

Meet Me (or Meet-Me) Messaging mode, implemented in OnePoint Messenger, in which users play and create messages by using both the client computer and the telephone, establishing the connection with the mail server first from the computer, choosing the Meet Me function, and then calling into the message server to use the telephone as the voice playback and recording device. See also **Call Me**.

Menu List of commands, programs, files, or actions from which you can choose. A menu bar is the horizontal list of menus in the standard Windows application main interface.

Message The basic unit of communication in the OnePoint Messenger environment, represented in the Inbox summary as an entity with a descriptive header. A message is a container that can contain several kinds of components, including text, embedded graphics, and document attachments. Attachments can be voice, fax, graphic and document files. A OnePoint Messenger "unified message" can be created by someone using a telephone or a OnePoint Messenger Unified Message form, generated in Outlook or Web Client. Telephone messages are "unified", because they can include faxes or forwarded e-mail.

Message Class A string identifier used by Outlook to determine what form to open to display a message.

Message Confirmation A notice confirming that a message was delivered to a recipient.

Message delivery A message waiting indication that places a telephone call to a user, asks for a passcode, and plays the user's messages.

Message folders See **Personal message folders***.*

Message Services One of two new statistical counters, along with Port Statistics, provided with OnePoint Messenger and used by its System Reporting Program (SRP) to log call activity and system performance.

Message Waiting Indication/Indicator See **MWI**.

Microsoft Exchange See **Exchange**.

Microsoft Exchange Site See **Exchange Site**.

Microsoft Management Console (MMC) The application provided by Microsoft for accessing server management utilities. OnePoint Messenger adds the Unified Messaging Snap-in (AKA Unified Messaging tree) to MMC for managing OnePoint Messenger on the Telephony Server.

Microsoft Outlook See **Outlook**.

Microsoft Windows NT See **Windows NT**.

MIME (Multipurpose Internet Mail Extension) An encoding protocol for converting binary files to ASCII for transmission between Internet mail domains.

Minimize To reduce a window to an icon on the desktop. You can minimize a window by clicking the minimize box near the right of the title bar or by choosing the Minimize command in the Control menu of the window.

MiTAI Mitel API software that provides bi-directional data channel information through its AFC card, installed in the backplane of the Telephony Server.

MMC See Microsoft Management Console.

Module An individual processor (CPU) and attached components on a server**.** The server can have between one and four modules. Modules are sometimes called "hosts."

MTA (Mail Transfer Agent) Software responsible for delivery between message servers.

Multimedia A combination of multiple forms of media, such as text, audio, video, graphics, fax, and telephony, in the communication of information; a OnePoint Messenger unified message can be a multimedia message if it contains multiple data types, but is not necessarily. For example, you can use a OnePoint Messenger New Unified Message form to enter only text or voice.

MVIP (Multi-Vendor Integration Protocol) Family of voice communication standards managed by GO-MVIP, Inc., an industry consortium (http://www.mvip.org/). OnePoint Messenger is supported by PC line and fax cards that communicate over an MVIP ribbon cable.

N

Name Prompt A personalized prompt that states a subscriber's name when their extension is busy or unanswered and they haven't recorded a Personal greeting.

Natural MicroSystems See NMS.

Netscape Navigator Version 4.0 or higher, from Netscape, is one of the two Web browsers supported by OnePoint Messenger for providing Web access to Exchange messages. Other versions of Netscape software that include Navigator 3.0 or better, such as Navigator Gold and Communicator, also support OnePoint Messenger.

Network administrator The person in your organization who is responsible for overall management of your network. The network administrator sets up the network cabling, sets up and configures computers and other devices on the network, and maintains network equipment.

Network interface card (NIC) Card that plugs into the motherboard bus of each server and desktop client in a LAN (local area network) to carry data between computers; OnePoint Messenger supports Ethernet NICs and Token Ring NICs through a router.

NMS (Natural MicroSystems) line card qualified to support OnePoint Messenger interface to PBX.

Notification Server A OnePoint Messenger telephony application that runs in Show N Tel Manager to manage message waiting notifications.

NPA A communications industry term for the area code of a DN.

NPA/NXX screening A communications industry term for restricting telephone calls based on the area code and exchange. See NPA and NXX.

Numeric address A string of digits that uniquely identifies a recipient or a distribution list across the organization. A numeric address is used by the telephone user interface as a means of addressing a message. It is configurable, not necessarily the user's phone number.

NXX A communications industry term for the exchange (prefix) of a DN. The exchange follows the area code and is a grouping of telephone numbers coming from the same CO.

O

ODBC (Open Database Connectivity) Microsoft standard for providing a common data format for relational databases.

Offline Operations To listen to, view, or respond to messages with no direct connection to the message server. Your messages can only be sent after you connect to the message server.

OKI The original, legacy transmission and storage compressed digital audio format used by and still supported by OnePoint Messenger.

OLE (Object Linking and Embedding) Microsoft standard for incorporating objects created in one program into documents created with other programs.

OnePoint A trademark of Mitel Corporation. Formally, the product is OnePoint^{TM} Messenger. OnePoint signifies the single point of administration and of client access to messages made possible by OnePoint Messenger.

OnePoint Messenger New Unified Message form The New Unified Message form is the one in Outlook that all OnePoint Messenger unified message buttons invoke. It displays the recorder toolbar.

OnePoint Messenger Read Message form AKA the incoming message form, it is the form in Outlook that displays OnePoint Messenger unified messages. It displays QuickPick in the top pane of the form and the message body in the bottom pane.

OnePoint Messenger Trace Manager (abbreviated as Trace Manager and differentiated from SNT Trace Manager) Manages the level of event detail sent by OnePoint Messenger Telephony Server subsystems to Event Log; part of the OnePoint Messenger diagnostics suite; see Chapter 7.

Operator The person to whom callers are transferred when they press the 0-key, or they exceed the maximum number of errors permitted on the system, or do not respond to a dial prompt, such as when calling from a rotary phone; OnePoint Messenger allows you to enable/disable the operator option, and the option is not announced to callers.

Option A choice in a dialog box.

Option button An element in a dialog box that gives you a choice of one of several options. An option button looks like a small circle. When you choose an option, a solid black dot appears in the center of the circle.

Optional Greeting A personalized answering system for greeting callers if a subscriber's extension is busy or unanswered, or incoming calls are blocked.

Outcall See **Outdial.**

Outdial Creation of DTMF tones by the server when it originates a telephone call, such as when paging a user.

Outlook Microsoft Outlook 97 is a desktop e-mail client for OnePoint Messenger.

Outlook Extension 3rd-party add-on components to Outlook; OnePoint Messenger adds voice and fax messaging features to Microsoft Outlook thorough extensions and separate applications.

Outlook Web Access Simulation of the Outlook interface, which Exchange and Internet Information Server provide to Web browsers. OnePoint Messenger adds unified messaging to Outlook Web Access to create Web Client.

P

Pager (Also **radio pager**) the user device activated by a paging system. See Paging.

Paging Process where the application outdials a pager number to activate a user's pager when a new message is received.

Passcode Security code that the user presses on the telephone keypad to gain access to his/her mailbox. **"**Passcode" is used to differentiate the telephone security code from the **"**password" users enter from the desktop.

Pass-through authentication The process that allows users on trusted domains to have automatic access to resources on the other domain in the trust relationship. The user is first authenticated on the trusted domain by successfully logging on to a computer in that trusted domain by using a network logon password.

Password OnePoint Messenger users have a Web Client password and a telephone passcode that they can use to provide secure access to mailbox. Users can change their passcode via the telephone user interface or via the desktop. The password and passcode are server security features consisting of an alphanumeric code required during computer login to verify a user's access to server functions or a mailbox.

PBX (Private Branch Exchange) Business telephone system, usually on premises, that switches calls from the public telephone network to stations in the system.

PBX Integration PBX integration establishes communication between the PBX and the voice mail system. The PBX supplies information such as who is calling on internal calls, and the extension that the caller is trying to reach.

Performance Monitor Windows NT utility that monitors and graphically displays status of system internals, such as CPU, RAM, and disk utilization; used by OnePoint Messenger to generate the System Alert Report, which alerts the Telephony Server administrator to critically degraded system performance.

Personal Greeting Subscribers can record messages (prompts) that greet callers when they are transferred to a subscriber's mailbox if the extension is busy or there is no answer.

Personal message folders A personal filing system for storing messages. Personal message folders are a convenient way to store messages you have received and messages you have sent.

Phoneme Characters used in TTS Dictionary Editor to symbolize sounds.

Pilot Number (or Pilot Access Number) Users dial this extension to access their mailboxes.

Player A software device used to play voice messages. OnePoint Messenger's Unified Message Player is often simply referred to as the player.

Play message In OnePoint Messenger, to play a message is when a user clicks the **Play** button to listen to the first voice attachment in the message. You can also select the icon of another voice attachment and click **Play** to play it.

Played message A message that the user has heard; if the user does not press the 5-key to Keep a played message, the message is kept anyway but continues to appear in the Outlook Inbox marked as Unread.

PONG (Post Office Network Gateway) OnePoint Messenger client/server components for linking internal calls to mail server.

POP, **POP3** (Post Office Protocol v.3) Internet e-mail access protocol that provides multiple client and server storage of e-mail.

Port A physical hardware connection. A server port is the physical telephone line connection to the server. Also see Serial port.

Port Monitor A diagnostic tool that provides a graphical user interface for checking and changing the status of ports on a particular voice server.

Port Statistics One of two new statistical counters, along with Message Services, provided with OnePoint Messenger and used by its System Reporting Program (SRP) to log call activity and system performance.

Post Office Occasionally used synonymously with "mail server" to indicate the Exchange Server. Telephony Server also has a post office function (PONG), responsible for passing messages between the TUI and Exchange.

Pre-Req (pre-requisite) A relationship between two OnePoint Messenger software servicing Items such that one service Item is dependant on the other and cannot be applied unless that pre-requisite service item has been applied previously. Any hot fix against a particular OnePoint Messenger service level cannot be applied unless that service level has already been installed.

Preventive Maintenance (also **Preventive Service**) New or replacement software modules distributed to prevent anticipated problems.

Primary Domain Controller Windows NT domains are defined by one Windows NT Server, called the Primary Domain Controller, that identifies those machines in its domain.

Primary Exchange Server OnePoint Messenger documentation refers to the Exchange Server with which Telephony Server is integrated as the primary Exchange Server. Other Exchange Servers in that Exchange site are referred to as secondary Exchange Servers.

Prompts Recorded instructions that offer options to users and callers. For example, after users and callers reach a mailbox, they may hear the prompt, "Record your message." Prompts can be given in foreign languages (an optional feature). See also Hard play and Soft play prompts.

Q

Quick Fax   A fax delivery option in the Unified Fax Printer feature of OnePoint Messenger that enables the user to convert the open document into a fax and send it to a fax machine.

QuickPick When the user selects a OnePoint Messenger message in the Outlook message summary, QuickPick is the application that opens a separate window to show the OnePoint Messenger message components, with icons representing embedded data types (graphics, spreadsheets, etc.) and attachments on the parent message and each attached antecedent message.

R

RAS (Reliability, Availability, Seviceability) OnePoint Messenger software tools that provide diagnostics and performance reports. See Chapter 5. Microsoft uses RAS to represent Remote Access Server supporting remote connectivity.

Raw PCM   (**P**ulse **C**ode **M**odulated) digital audio encoding format; at uncompressed 64kbps, one of the storage formats supported on Exchange by OnePoint Messenger. See also **G.711** and **IMA ADPCM**.

Receipt   Notification to a user about a message's status.

Receipt Requested   A message delivery option that causes your message server to notify you when a recipient plays or views a message you have sent.

Recipient   The person who receives or should receive a particular item, such as a voice or fax message. A program can also be a recipient.

Recorder   A software device used to record voice messages. The OnePoint Messenger voice message recorder is simply called the Recorder. It appears on OnePoint Messenger New Unified Message forms, both in Outlook and in Web Client.

Read Message form See **OnePoint Messenger Read Message form**

Regedit   Windows 95/NT system registry editor. Invoked from a DOS command line, it displays a windows tree interface; Regsvr32 is a second command line registry editor, with no Windows inspection interface.

Release Status   Indicates the development phase of a base release or service pack. Examples: Alpha, Beta, Released.

Remote Access   Connecting to the message server from a telephone or computer that is not within the control of your message server. To connect to a Microsoft Exchange message server from a remote PC, you can use a browser through the Internet, if you have the URL of the message server and password clearance.

Remove Service System Service Tool operation whereby a Service Item may uninstalled.

Reply All Unified One of the OnePoint Messenger new message choices, invoked by button or menu command. It opens the OnePoint Messenger New Unified Message form, with the selected message attached, the address of the sender of the selected message in the To field, and the addresses of all recipients of the selected message in the Cc field.

Reply Unified One of the OnePoint Messenger new message choices, invoked by button or menu command. It opens the OnePoint Messenger New Message form, with the selected message attached and the address of the sender of the selected message in the To field.

Reply Chain A sequence of messages created when a user replies to an existing message and includes a reference to the previous message.

Return receipt Request by a user for notification when a sent message has been played.

Ribbit.exe The file name of the OnePoint Messenger voice message player, formally called the Unified Message Player. It is invoked by the OnePoint Messenger Outlook Extension and by Web Client to play voice attachments. It is also invoked by a OnePoint Messenger voice attachment when you save it as a separate file and then double-click it in Windows Explorer.

RNA (Ring No Answer) A condition where an extension rings but no one answers the telephone.

S

Scroll bar A vertical bar, with scroll arrows at the top and bottom and a scroll box in between, that tells you the relative position of the information you are currently viewing. You can use the scroll arrows and the scroll box to move through the information. The scroll bar only appears when there is more information than can appear in a single screen.

Secondary Exchange Server OnePoint Messenger documentation refers to the Exchange Server with which Telephony Server is integrated as the primary

Exchange Server. Other Exchange Servers in that Exchange site are referred to as secondary Exchange Servers.

Select OnePoint Messenger books use the word "select" to open a property page (tab) and choose options on it. "Choose" is used for menu items, "click" for obvious, square buttons.

Selection cursor The marking device that indicates your current location in a window, menu, or dialog box. Compare to arrow cursor.

SendFax A OnePoint Messenger telephony application that runs in Show N Tel Manager to send faxes on dedicated Telephony Server ports to the recipient of faxes from OnePoint Messenger users, the Fax on Demand service, and of e-mail converted to faxes downloaded from the user's mailbox.

Serial port A physical interface to a serial data connection. Also see **Serial port index.**

Server Used to describe either management hardware or software or sometimes both, depending on context. For example, several server applications can run on one hardware server.

Server administrator See **Administrator.**

Server Control A Telephony Server GUI utility that provides services shutdown and restart.

Server greeting Initial greeting heard by callers who dial into a voice processing system.

Server Replication Exchange Servers in an Exchange site automatically replicate user account data and messages. OnePoint Messenger extensions and message types are also replicated.

Service Event For SST, the application or removal of any service on a OnePoint Messenger system. All service events are recorded in the Service History database.

Service Event Audit Trail A collection of entries in the Service History database that record every Service Event. Even if the service operation carried out was the

removal of a service item, it remains in the Service Event Audit Trail portion of the Service History database detailing both the application and removal of that service item.

Service History database A database containing records for every service operation carried out on a OnePoint Messenger system. On a customer system, the database contains the history of all service applied or removed to that specific OnePoint Messenger installation.

Service History database grids Tabular representations on the SST main window of the service items and Service Event Audit Trail database entries associated with a given service level. The three database grids (Service Levels, Hot Fixes, Service Event Audit Trail) occupy the right pane of the SST main window.

Service item Generic for service pack or hot fix. A service Item is the actual unit of service that SST applies or removes.

Service Level A service level represents the base release plus service pack installed on a system. Examples: OnePoint Messenger 1.0 or OnePoint Messenger 1.0 Service Pack 1.

Service Levels tree view The Service Levels tree view occupies the left pane of the SST/Bundler main window, showing a representation of the service levels that have been applied to a OnePoint Messenger system (SST).

Service Log file Essentially a trace file of all SST service operations; each log contains a cumulative listing of all SST service operations carried out on a particular day. The Service Log file writes to the sstLogs folder with a filename in the format: YYMMDD.LOG, where YYMMDD are two digit representations of the current year, month and day. A shortcut to the sstLogs folder is available in the OnePoint Messenger folder, and the log files themselves can be viewed with any ASCII text editor/viewer.

Service Log Output window Opened automatically during any SST service operation to display the same information as that written to the Service Log file.

Service operation General term for the bundle manipulation processes available in SST. Available SST operations include Apply Service, Remove Service, and Print.

Service pack A collection of hot fixes and/or preventive services made available for a particular base release. Service packs will (in most instances) contain all General Availability hot fixes for a particular base release in a cumulative manner, i.e., only the most recent service pack need be applied.

Service type The kind of service contained in a bundle or installation, i.e., Base, service pack or hot fix.

Show N Tel (**SNT**) Telephony programming middleware licensed for OnePoint Messenger from Brooktrout Technology. SNT Runtime is installed as part of Telephony Server and includes several interfaces, including Show N Tel Server (wntntrun.exe; see Chapter 7) for tracing call progress, and Show N Tel Manager, used to configure the interface between Telephony Server and the telephone switch. See Appendix G.

Sibling message Any voice or fax messages contained in a compound message.

Single Digit Routing (SDR) OnePoint Messenger feature that provides nested menus of options through the Automated Attendant function; the administrator can select between SDR, no Automated Attendant, and a simple Automated Attendant that greets callers and routes them to users' extensions.

Site Info Unique information about each OnePoint Messenger installation, stored in the Service History database. Customers are encouraged to store the name and contact information of local system administrator via the Site Info dialog contained in the SST View Menu.

Site Log System Service Tool operator's personal notepad.

Site specific hot fix A hot fix that solves a problem that does not occur at all OnePoint Messenger installations.

SMDI (**S**implified **M**essage **D**esk **I**nterface) A standard call data packet format used in Centrex applications. A protocol for sending PBX integration data, such that a caller is not required to re-enter the phone number if the extension is busy or not answered.

SMTP (**S**imple **M**ail **T**ransfer **P**rotocol) Internet protocol used for sending messages. SMTP relies on addresses in DNS servers to forward mail to the

addressee's mail server. RFC 822 defines the structure of SMTP messages. See: http://www.ietf.org/rfc/rfc0822.txt. See also POP and IMAP.

SNT Trace Manager The OnePoint Messenger GUI that sets tracing and output storage parameters for Show N Tel Server.

SRP See **Statistics Reporting Program**.

SST See **System Service Tool**.

Statistics Reporting Program (SRP) Telephony Server performance monitoring program; part of the OnePoint Messenger diagnostics suite; See Chapter 8.

Station Telephone set.

Status bar Gray field(s) at the bottom of some program windows that are used to display transitory information, such as what command has been chosen.

Subscriber Used synonymously with "user," as in "OnePoint Messenger user" or "OnePoint Messenger subscriber"; indicates Microsoft Exchange user whose OnePoint Messenger profile has been enabled for voice messaging. A subscriber can use both the telephone user interface and the desktop graphical user interface.

System Alert Report Critical status alert provided by OnePoint Messenger that runs in background mode in Performance Monitor until it detects critically degraded system performance.

System attendant See **Attendant**.

System Administrator (or **Systems Administrator**) The person who is responsible for keeping the network applications running.

System Service Tool (SST) OnePoint Messenger RAS tool, for managing and applying service to OnePoint Messenger, including hot fixes and service packs to OnePoint Messenger; See Chapter 9.

SX-200 and **SX-2000** Two Mitel PBXs with which OnePoint Messenger integrates.

T

TAPI2 Telephone Application Programming Interface v.2; telephony standard included in Intel/Microsoft Windows Open Systems Architecture; v.2 includes 32 bit, QoS, Unicode, etc.

TCP/IP (Transmission Control Protocol/Internet Protocol) A family of protocols developed by the U.S. government to support construction of worldwide internetworks, which now pretty much means the Internet. Part of TCP/IP is the familiar "IP address", such as 137.52.01.01, consisting of four parts, two of which are the system ID, and the other two are the host ID. OnePoint Messenger relies on TCP/IP for some functions, such as Web Client access and communication with Windows 95 clients

TDD Telecommunications Device for the Deaf; a terminal used by a hearing-impaired person to communicate over telephone lines. A TDD operator relays information from the TDD to another party, and types in any spoken information, which is sent back to the TDD.

Telephony applications The applications that OnePoint Messenger adds through Show N Tel Manager to provide services through line ports, including fax applications, Telephony Server, Automated Attendant (Receptionist), and MWI/paging.

Telephony Server 1) OnePoint Messenger software components, which include the Telephone User Interface, directory services, and message transfer functions between the telephone switch and Microsoft Exchange.

2) When referring to "the Telephony Server," OnePoint Messenger documentation is referring to the computer on which Telephony Server software is installed.

3) OnePoint Messenger telephony application that runs in Show N Tel Manager on dedicated ports to manage voice, fax, and TTS traffic.

Telephony Server Monitor (TSMon) OnePoint Messenger application that monitors the operational status of Telephony Server tasks. TSMon also provides Telephony Server start and stop options.

Telephone User Interface (TUI) An interface through which callers can access the message system via any touchtone telephone. The TUI is an automated attendant and voice messaging system that controls call handling. It greets incoming callers and instructs them on how to proceed. See Chapter 3; see also Chapter 7 of the User Guide.

Text box A box located within a dialog box in which you enter text required to complete a command.

Text to Speech (TTS) The program that provides conversion of text into speech (speech synthesis); using the server-based TruVoice text-to-speech software. OnePoint Messenger subscribers can listen to the text components of their e-mail messages (also sender name and subject line) over the telephone.

Thumbnail An extremely reduced view of an entire document or graphic.

Tie trunks Private telephone circuits used to connect two or more telephone systems together, or to connect a telephone system to a voice processing system.

TIF Tagged Image File Format (or TIFF); a file format for saving graphics files, such as fax messages.

Tile A method of arranging windows so that no two windows overlap and all windows are visible. You can tile windows by choosing the Tile command in the Window menu. Compare to Cascade*.*

Time stamp Voice prompts that inform a user of the time and date each message was recorded.

Tip & Ring Telephony term for the ground (tip) and positive (ring) wires in an electrical circuit. Also known as Tip-Ring or T-R.

Title bar The horizontal bar at the top of a window. The title bar contains the name of the menu, the Control-menu icon, the maximize (or restore) box, and the minimize box.

Toolbar A bar near the top of the application window in which icons, representing function buttons, are displayed.

Trace Manager See **OnePoint Messenger Trace Manager**.

Transcode Convert from one sound file format to another; a transcoding application is sometimes incorrectly called a codec.

Transfer Moving a call from one station to another within a telephone network or site.

TrueSpeech 8.5 Audio compression format owned by the DSP Group for which an ACM is bundled with Windows 95 and Windows NT 40 systems.

Trunk A telephone communication channel between two points, where one is usually the CO or switching center.

Trusted domain A Windows NT domain has one of three relationships to another Windows NT domain—no trust, one-way trust, or two-way trust. A one-way trust allows users in the trusted domain to access resources in the other domain, but not the reverse. See also pass-through authentication.

TrueSpeech Compressed sound file format used by OnePoint Messenger to deliver voice attachments to Web Clients.

TruVoice Text-to-Speech engine used by OnePoint Messenger; trademark of Lernout and Hauspie.

TS Admin Shorthand for Telephony Server Administration, an informal name for the Unified Messaging Snap-in to Microsoft Management Console.

TSAPI Telephony Server Application Programming Interface; AT&T telephony API.

TSMon See **Telephony Server Monitor**.

TTS See **Text-to-Speech**.

TTS Dictionary Editor OnePoint Messenger software component for editing TTS pronunciation dictionary.

TUI Telephone User Interface; The combination of the telephone keypad and voice prompts played by Telephony Server to guide the user through phone message menus.

Tutorial A user option that, when run from the OnePoint Messenger TUI, is a series of annotated prompts that guide the user through simple mailbox operation.

Twain A cross-platform application interface standard for image capturing.

U

UCD Uniform Call Distributor; a device to handle incoming calls and distribute them among several agents. Less "intelligent" than ACD.

Unified Fax Printer The OnePoint Messenger fax print driver. After generating a fax image of the document, it opens a OnePoint Messenger mail form with the fax attached to it.

Unified Message A Baypoint Innovation trademark, it is usually not capitalized. A unified message is one that has been converted by OnePoint Messenger's Telephony Server or generated by OnePoint Messenger clients, including fax, voice, and combinations of fax, voice, text, and other attachments.

Unified Message Player The OnePoint Messenger voice message player, whose toolbar appears in QuickPick and the OnePoint Messenger Read Message form in Outlook. It also appears in a floating window in certain cases.

Unified messaging The storage of both telephone messages and e-mail in one central repository.

Unified Messaging Snap-in (AKA **TS Admin** or **Unified Messaging tree)** The component that OnePoint Messenger adds to Microsoft Management Console for managing OnePoint Messenger on the Telephony Server.

Unplayed message A message that has not been played (heard) by the user.

Upgrade The process of replacing one base release with a newer base release. The upgrade process is the responsibility of the OnePoint Messenger Install Program, which uses the same SST commandline interface used for base releases to record the Upgrade service event in the Service History database.

Upload To transfer voice and fax messages that you create in offline mode from the Outlook Outbox folder to the message server.

Urgent message A message delivery option that causes the message server to notify a recipient that an urgent message has arrived in his or her Inbox. You can select the Urgent delivery option when you make, give, or answer a message.

URL (Uniform Resource Locator) An Internet address, such as www.microsoft.com, with an application prefix, such as http://, to indicate the type of Internet service being addressed.

User Also called "mailbox user" or "subscriber" in the OnePoint Messenger documentation; a person who has one or more voice-enabled mailboxes on the server and is logged into it. Users may have extensive call processing options, such as play messages, answer messages, give messages, keep messages and use distribution lists.

User Distribution list See **Mailbox owner distribution list.**

User ID (User identifier). A security feature consisting of a unique identifier of up to 17 letters that is required as the first step in logging in to a **server.**

User options Choices that the server announces to users during a call. When a user presses the U key (8 on the keypad) while listening to the main menu, the server presents the user with some or all of these options: name, greeting, passcode, distribution lists, tutorial, pagers.

V

VCARD Versit Consortium Card (electronic business card)

Version Reader OnePoint Messenger application that displays version information of applications in selected directories.

VMUIF A set of voice messaging prompts used by a number of vendors.

Voice mail A method of delivering voice messages to other recipients.

Voice message See **message.**

Voice processing Generic term for any equipment that can handle voice messages from callers.

VPIM Voice Profile for Internet Mail; standard for transferring voice messages between voice mail servers over the Internet. OnePoint Messenger conforms with the RFC 2421 VPIM standard.

VPIM message Message sent using a VPIM address to a user of a VPIM-compliant messaging system.

W

Walkaway Fax A OnePoint Messenger fax is "walkaway" because, even though it's going to a mailbox, no extra interaction is needed: just put the fax in the fax machine, enter the phone number, and press send.

Watchdog (officially called **WinFT**) A program included with OnePoint Messenger that restarts server applications that have been interrupted.

Watchdog timer Hardware that automatically resets a computer unless a signal is periodically sent to the timer to indicate the system is still functional.

.WAV short for "waveform"; The naming extension for the standard Windows sound file format.

Web Client OnePoint Messenger component that combines with Microsoft Outlook Web Access to provide unified message to Exchange mailboxes over the Internet; Web Client automatically downloads plug-ins for voice playback and recording.

Window A box displayed on the screen that contains menus, icons, buttons, messages, and dialog boxes. Windows have standard controls such as a Control menu icon, scroll bars, a minimize box, and a maximize box.

Windows NT Windows NT Server 4.0 is the required operating system for the computers that host the OnePoint Messenger Telephony Server and the Microsoft Exchange Server. OnePoint Messenger client software can reside on any version of Windows NT 4.0.

WinFT (AKA **Watchdog**) Program included with OnePoint Messenger that restarts server applications that have been interrupted; accessed by a yellow fox icon in the Windows status bar.

Workday Used to describe working hours of a business using the system. For example, Monday through Friday from 9:00 am to 5:00 pm can be defined as a business's workday. A workday is a configurable parameter of the OnePoint Messenger Telephony Server.

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