555-7001-307

DMS Family/SL-100

Meridian Mail

System Administration Guide

Product release 10.0 Standard 1.0 August 1995

NORTEL

P0815487

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Meridian Mail

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Publication number: 555-7001-307
Product release: 10.0
Document release: Standard 1.0
Date: August 1995

Publication history

August 1995

This is the standard version 1.0 of the *DMS 100/SL100 System Administration Guide (DMS)* for Meridian Mail Release 10.0 base software.

Contents

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About this guide

Typographic conventions

This section describes the conventions that are used throughout this guide:

- softkeys
- keyboard keys
- text input
- fields in a menu
- values in fields
- spoken words
- recorded prompts

Softkeys

These are displayed on the various administration menus and screens and indicate which keyboard function keys carry out specific Meridian Mail tasks. These are referred to in the document by using the label of the softkey (as displayed in the given menu), delimited by square brackets (for example, [Exit], [OK to Delete]).

Keyboard keys

These are referred to by indicating the label of the key, delimited by angle brackets (for example, <1>, <2>, <Return>).

Text input

Where you are required to input specific text, the characters are presented in bold print (for example, **abcd**, as opposed to <a><b><c><d>).

Fields in a menu

When the name of a field is referred to within a paragraph, it is in italics and in a different typeface than the body of the document (for example, *Last Name*, *Invalid Logon Attempts*). This is not the case if a field name appears in a heading.

Values in fields

When a description refers to a set of values from which you must select, these values are in double quotation marks (for example, "Yes", "No", "Enable", "Disable"). Note that quotation marks are not used, however, in figures since these values do not appear with quotation marks in the screens themselves.

Spoken words

Where you are required to speak into the telephone, such as in the recording of greetings and announcements, any suggested words appear in italics, surrounded by double quotation marks. For example, ‘You might want to include the following statement in your voice menu: *"Please wait on the line, an attendant will be with you shortly."*’.

Recorded prompts

Prompts which are played by the system also appear the same as spoken words. For example, *"You have no new voice messages. One old message is still unsent"*.

References

In this manual, where reference is made to another part of the manual, or to another document, the following conventions are used:

- A reference to text in the same chapter appears surrounded by double quotation marks, giving the heading under which the required text is found.

  For example, see "Adding local voice users" in this chapter.

- A reference to text in another section appears with double quotation marks, giving the name of the chapter and, where necessary, the heading under which the required text is found.

  For example, see "Voice recordings" in the "User administration" chapter.

- A reference to text in another manual appears in italics, giving the title of the manual in which the required text is found, along with any applicable reference number.

  For example, see *Meridian Mail Installation and Maintenance Guide* (NTP 555-70x1-250).

Chapter 1: Introduction

This guide describes how to administer the Meridian Mail system. It assumes that all the hardware, including the administrator's terminal and optional printer, is in place. Meridian Mail administration facilities are used in the initial setup of your system as well as for routine maintenance.

This guide documents Meridian Mail administration for Meridian Mail Modular Option GP systems connected to a DMS-100, DMS-10, or SL-100 switch.

As of Meridian Mail release 8, it is also possible to connect a Meridian Mail Modular Option GP to one of the following third-party switches: AT&T, NEC or ROLM. All of these configurations use SMDI links between Meridian Mail and the switching equipment. However, not all features are available for each of the above configurations. These include: Hospitality, Network Message Services (NMS) and Integrated Mailbox Administration. Therefore, these features are not described in this document.

For Meridian Mail systems connected to an AT&T switch, see *VoiceBridge Installation Procedures for AT&T Switches* (NTP 555-7001-216).

For Meridian Mail systems connected to a ROLM CBX, see *VoiceBridge Installation Procedures for ROLM Switches* (NTP 555-7001-217).

For Meridian Mail systems connected to a NEC switch, see *VoiceBridge Installation Procedures for NEC Switches* (NTP 555-7001-218).

Referenced documents

The following Meridian Mail guides are referenced throughout this guide.

Table 1-1
NTPs referenced in this guide

Number	Title
555-7001-000	*Meridian Mail Master Index* *This guide lists all of the NTPs in the Meridian Mail suite and provides a brief description of their con - tent. It does not list page references for topics across the NTP suite.*
555-7001-101	*Meridian Mail General Description* *This guide provides an overview of the Meridian Mail system and features.*
555-7031-200	*Meridian Mail Site and Installation Planning Guide* *This guide documents the steps necessary to en - gineer and plan a Meridian Mail system. It includes a number of data forms which you can fill in as you plan your system.*
555-7031-250	*Meridian Mail Installation and Maintenance Guide* *This guide documents the installation of Meridian Mail hardware. It also describes how to provision the DMS switch for Meridian Mail.*
555-7001-215	*Meridian Mail System Installation and Modification* *This guide documents software installation, port reconfiguration, upgrades, among other topics.*
555-7001-305	*Meridian Mail System Administration T ools* *This guide documents additional administrative tools and utilities which are available at the Meridi - an Mail administration terminal at the tools level.*

Number	Title
555-7001-216	*VoiceBridge Installation Procedures for A T&T Switches*
555-7001-217	*VoiceBridge Installation Procedures for ROLM Switches*
555-7001-218	*VoiceBridge Installation Procedures for NEC Switches*
555-7001-310	*Meridian Mail AdminPlus System Administration Guide* *This guide documents the AdminPlus software which allows you to use a PC to download in - formation from the Meridian Mail system.*
555-7001-315	*Meridian ACCESS Configuration Guide* *This guide documents the Meridian Mail and con - figuration required to support Meridian ACCESS.*
555-7001-316	*Meridian ACCESS Developer 's Guide* *This guide documents how to develop and main - tain Meridian ACCESS applications.*
555-7001-318	*Meridian ACCESS Voice Prompt Editor User 's Guide* *This guide documents how to use the voice prompt editor to create and maintain voice seg - ment files and individual voice segments.*
555-7001-326	*Meridian Mail Voice Forms Application Guide* *This guide documents the planning, configuration and implementation of voice forms.*

Number	Title
555-7001-327	*Meridian Mail Fax on Demand Application Guide* *This guide documents the planning, configuration and implementation of the fax information service and fax item maintenance service.*
555-7001-335	*Meridian Mail Networking Services Administration Guide* *This guide documents the administration of all available networking services. This includes Meridian Networking and AMIS Networking.*
555-7001-510	*Meridian Mail Maintenance Messages (SEERs)* *This guide lists System Event and Error Reports (SEERs) to help isolate and fix system problems.*
-end-	

Organization of chapters

The division of this manual reflects the hierarchical set of procedures accessible from the Main Menu. Most items that appear in the Main Menu have a corresponding chapter describing the administrative tasks, and the screens and fields one interacts with to complete the tasks. In the case of Fax on Demand and Network Administration, there are separate application guides covering these topics (see Table 1-1). Chapters contain the following organizational elements:

- Introduction

  A brief description of the menu, and any concepts or rules necessary to use the menu

- Menu

  Meridian Mail menus display a list of options or items from which you can make a selection. At the bottom of the terminal screen, there may be a number of softkeys to choose from.

- Screens

  Administration screens contain fields in which you can enter information or make a choice between two or more options such as "Enabled" and "Disabled" or "Yes" and "No". Screens may also contain read-only fields. At the bottom of a screen will be one or more softkeys.

- Field descriptions

  A description of each field as it appears on the screen, stating requirements your entries must meet and any default information supplied by the system.

- Task-oriented procedures

  These are step-by-step descriptions of administrative tasks. They are provided when additional steps are required to complete a task (in addition to filling in the described fields and using the softkeys).

  - Starting point

    This tells you where in the menu hierarchy the procedure begins.

  - Body of procedure

    This is a numbered list of the required steps and any additional information you may require to complete a task.

Chapter 2: An overview of administration

Administrative responsibilities

As system administrator your functions include setting up the initial system configuration (normally a once-only operation), adding users and maintaining the user database, backing up the system, creating voice menu applications such as announcements and voice menus, monitoring system status, performing maintenance tasks if necessary and monitoring traffic reports and user usage reports. These tasks are performed either through easy-to-follow, menu-driven screens at your administration terminal or through your telephone. You may need to carry out some procedures frequently, perhaps daily, while others may need to be done only occasionally.

Voice messaging interfaces

The Meridian Mail interfaces allow users to interact with the Meridian Mail system to perform the various activities associated with sending and receiving messages and logging into the mailbox.

Meridian Mail supports two interfaces:

- Voice Messaging User Interface Forum (VMUIF)
- Meridian Mail User Interface (MMUI)

When the system is installed, it is defined as using either VMUIF or MMUI. The system can only support one of these interfaces.

Note: Some features are interface-dependent.

Whereas the MMUI interface is a command-driven user interface, the VMUIF interface provides a more user-friendly menu-driven user interface.

The following features are common to MMUI and VMUIF:

- handling of forwarded calls
- personalized greetings
- MWI support
- remote notification (user-changeable remote notification schedules from the telephone set are only available in the MMUI interface)
- password-protected mailboxes
- mailbox summaries and message playback
- message reply, reply all, and forward
- personal distribution lists
- message compose and send
- AMIS open networking
- class of service
- 18-digit mailbox

VMUIF

VMUIF is an interface for users with dual tone multifrequency (DTMF) telephone sets. The VMUIF interface is primarily intended for service bureaus and telephone companies in order to rent voice mailboxes to residential consumers and small business customers. VMUIF is also well-suited for large campus environments with shared accommodations such as university dorms or hospital wards.

Users enter a password to log in to a mailbox. While in their mailbox, they can play, delete and skip voice messages. Users can request context-sensitive help at any time. Compose capability can be enabled (although it is disabled by default) to allow users to

- compose and send messages to other users
- reply to the sender of a message or reply to all recipients (and the sender) of the message
- forward a message
- immediately call back the sender of a message (call sender)
- create personal distribution lists

However, VMUIF compose and send does not support the following features which are available in the MMUI interface:

- message tagging (urgent, private)
- timed delivery
- adding to recorded messages (pressing the record key erases the previous message)
- saving a copy of the message

The following features are specific to VMUIF and are not available with the MMUI interface:

- call answer only mailbox (compose and send turned off)
- send only mailbox (call answering turned off)
- rotary set interface (message retrieval with no DTMF input required)
- greeting change service (greeting change without DTMF input required)

- introductory tutorial (special greeting on first access)
- volume control (DTMF control of volume and setting default volume)
- family mailboxes (up to 8 telephone set administratable submailboxes)
- "save as new" (read messages can be reverted to "unread" or "new" status)
- send on disconnect (implicit send command if user hangs up after composing a message)
- mailbox resources (limiting receipt of messages based on mailbox resources)
- enhanced personal distribution lists (personal distribution lists with DNU and AMIS addresses)
- login greeting (customizable login greeting that plays on each login)
- disable reset (automated, timed reset of lockout due to password violation)
- lockout revert (if locked out from the mailbox, a revert DN is possible)

Submailboxes

A mailbox can be partitioned into a main mailbox, plus up to 8 submailboxes. Submailboxes are either enabled or disabled in the Meridian Mail class of service (COS) assigned to the user. If the *Maximum Number of Submailboxes* field in the COS is set to a value other than zero, then submailbox capability is enabled.

Although a main mailbox may have the ability to be divided up into a number of submailboxes, this is done by the owner of the main mailbox only. For example, if a residential subscriber of call answering has purchased the submailbox feature with up to 8 submailboxes, these submailboxes will not automatically be available. It is up to the owner of the main mailbox, not the administrator, to create and administer the submailboxes. Once submailbox capability is enabled by the administrator, the rest is up to the owner of the main mailbox. (You cannot determine how many submailboxes a main mailbox owner has activated.)

Submailboxes can receive call answering and redirected messages only. Submailboxes can redirect any message to the main mailbox or another submailbox.

When a caller reaches a mailbox with submailboxes, a menu of users is played. For example, a caller might hear *"To leave a message for William, press 1 or stay on the line. To leave a message for Paul, press 2. To leave a message for Joan, press 3. To leave a message for Jack, press 4."* If the caller does not press a key (for example, the caller is using a rotary phone), and the user stays on the line, he or she can leave a message which will be deposited in the main mailbox. The main mailbox owner can then redirect the message to the appropriate submailbox.

The main mailbox and all associated submailboxes have the same mailbox number but distinguishing passwords. As a result, there is no auto login feature because the password is required to determine the correct mailbox. All passwords must begin with the submailbox number. The password for the main mailbox must begin with "1". Subsequent submailboxes are numbered beginning with "2" through "9". When the main mailbox owner initially creates the submailboxes, he or she must define a password and must record a personal verification for each submailbox. Otherwise, the submailbox is not created. Afterwards, each submailbox owner can change their password and personal verification if desired.

A message waiting summary is played after a mailbox owner dials the Meridian Mail access number if

- submailboxes have been created by the main mailbox owner
- the user is calling from the home phone (if the user is calling from a phone other than the home phone, he or she will have to log in and enter their password, to find out if they have any messages)
- there is at least one new message

This summary is in the form *"Messages are waiting for Joan, Jack."*

MMUI

MMUI is the full-featured Northern Telecom (Nortel) proprietary voice mail interface and is primarily intended for business users. The following features are specific to the MMUI interface and are not available in the VMUIF interface:

- mailbox Thru-Dial (user can press "0" + number to call a number while logged into the mailbox)
- name addressing (users can dial other users by name instead of by extension)

- Meridian Mail Networking (if installed)
- integrated AMIS networking (AMIS virtual node)
- message tagging options (during message composition, users can tag messages as urgent, or for timed delivery)
- retention of unsent/sent messages
- internal and external greeting
- user-changeable personal verification
- customizable customer greeting and customer attendant
- custom operator revert
- user-changeable remote notification schedules through the telephone set
- express messaging
- bilingual prompting (if more than one language is installed)
- record, playback, message tagging during call answering

Users and subscribers

Users that are added to a system on which the VMUIF interface is installed are referred to as *subscribers* since they subscribe to a service through a central office. Users that are added to a system on which the MMUI interface is installed are referred to as *users.* However, all of the administration screens refer simply to users. For example, User Administration applies to both MMUI users and VMUIF subscribers. This administration guide will refer to both users and subscribers.

Meridian Connections

Meridian Connections allows a Meridian Mail Modular Option GP system to be integrated with selected models of AT&T, NEC or ROLM PBXs using the SMDI protocol. This integration is achieved through a unit called VoiceBridge which provides digital set emulation. Call-related information is exchanged as if connected to a DMS-100 switch. See the *General Description* (NTP 555-7001-101) for a more detailed discussion of Meridian Connections.

There are very few differences between administering a Meridian Mail system that is connected to a Northern Telecom switch versus a system that is connected to a third-party PBX. The major differences are in the area of voice services configuration (namely provisioning the PBX for Meridian Mail services). This is discussed in the sections "Configuring Meridian Mail services" and "Configuring other vendors' switches" in the "Voice administration" chapter.

At the Meridian Mail administration terminal

The setup and operation of your Meridian Mail system involves work at the administration terminal. Through the administration terminal you can access the screens and menus used to define the characteristics and parameters of your system.

System administration can be broken down into the following categories and tasks. These items are selectable from the Main Menu.

- User Administration

  User administration involves adding new users and maintaining an up-to-date database of users, and system distribution lists, and carrying out other user-related functions such as recording personal verifications for users.

- General Administration

  General administration involves setting general system parameters (such as the attendant DN and SEER printer port name); backing up the system from the hard disk onto tape or onto another hard disk (if you have the Disk-to-Disk Backup option); changing the system administrator password and system time and setting up translation tables (if Fax on Demand and/or AMIS Networking is installed).

- Voice Administration

Voice administration involves setting voice messaging options, defining parameters to ensure the security of your system (including restriction/permission codes and mailbox security parameters), voice services administration (the creation and maintenance of optional voice services such as voice menus, thru-dial services, announcements, time-of-day controllers and fax items), the creation and maintenance of service DNs (in the VSDN table), setting up certain outcalling parameters (such as the maximum number of outcalling channels and a number of remote notification and delivery to non-user parameters), and the creation and maintenance of voice forms (if installed).

Note: Voice Menus are documented in the *Voice Menus Application Guide* (NTP 555-7001-325). Voice Forms are documented in the *Voice Forms Application Guide* (NTP 555-7001-326). Outcalling is documented in the *Outcalling Application Guide* (NTP 555-7001-322).

- Fax Administration

  Fax administration involves configuring parameters which affect all fax services configured on the system. These parameters include the maximum number of fax delivery channels, the maximum number of call attempts to handle per channel acquisition, the maximum resolution of fax reception (normal or fine), the maximum number of pages allowed per fax item, fax delivery retries, allowed times for delivery of fax items on weekdays and weekends, and the delivery time limit.

  Note: The Fax on Demand feature is described in detail in the *Fax on Demand Application Guide* (NTP 555-7001-327).

- Hardware Administration

  Hardware administration involves viewing the contents of the hardware database for your Meridian Mail system. This will give you an idea of the number of nodes in your system, and the type of cards and ports that have been configured for those nodes. You can also print node and data port information while in the Hardware Administration menu. Hardware Administration does not, however, involve modification of the hardware database. The database is modified using the Hardware Modify tool as described in the *System Administration Tools Guide* (NTP 555-7001-305).

- System Status and Maintenance

System status and maintenance involves monitoring the operational status of the system, including System Event and Error Reports (SEERs) for use in troubleshooting. From time to time you may have to modify the Channel Allocation Table which allocates Meridian Mail ports to services. Should any components, such as nodes or cards, require servicing, this also involves disabling those components prior to servicing.

- Operational Measurements

  Operational measurements involve setting operational measurement options and viewing system usage statistics. This information is presented to you in the form of various reports, such as traffic reports for various features (voice messaging, voice menus, Meridian networking, AMIS networking and outcalling), disk usage reports, DSP port usage reports, the outcalling audit trail, the fax audit trail and user usage reports.

- Network Administration

  Network administration involves the administration of Meridian networking and AMIS Networking. Each of these networking components is optional. Networking allows one Meridian Mail system to communicate with other Meridian Mail systems. AMIS Networking allows Meridian Mail users to send messages to, and receive messages from, users of voice messaging systems other than Meridian Mail.

  Note: Administration of all networking types is documented in the *Networking Services Administration Guide* (NTP 555-7001-335).

- Class of Service Administration

  Class of service administration involves creating and maintaining classes of service. Classes of service in Meridian Mail determine the feature capabilities of one or more mailboxes. The administrator creates classes of service and then assigns mailboxes to them, based on users' needs and requirements. If the administrator modifies a class of service, the change is propagated to all users who belong to that class of service. (The only exception is personal classes of service which are unique to an individual user mailbox.)

  Note: Classes of service are new to Meridian Mail Release 9 and replace user models which were found on earlier releases.

At the telephone

To create the various voice recordings required for your system, you must use a telephone as well as the administration terminal. The basic procedures for creating voice recordings are described in detail in the chapter "Making recordings". This section describes the types of voice recordings that you can create:

Personal verification recordings

Personal verification recordings allow a person's name (and extension) to be recorded for each user. When recorded, it is played to callers instead of the user's phone number, making identification easier. (Users can also record their own personal verifications.)

Network site names

A site name can be recorded for Meridian Mail network sites. If no site name is recorded, a recording of the site number is played when callers are connected to a remote user's mailbox to leave a message. This is used to identify the site. If a site name has been recorded, the site name is played instead, making identification easier.

Call answering greeting

This greeting is played to external callers who reach the call answering service and is simply a recording of your organization's name. It is played before any personal greetings. This is an optional greeting.

> ***Note:*** This greeting does not apply if the VMUIF interface is installed on the system.

VMUIF introductory tutorial greeting

This greeting is played to VMUIF subscribers the first time they log on to their mailbox. It describes how to use the call answering system and the features that are available.

Broadcast mailbox personal verification

This is a recording of the name or purpose of the broadcast mailbox so that users can easily identify the originator of the broadcast message.

Voice services recordings

These include announcement recordings, thru-dial greetings, fax item confirmation prompts, voice menu greetings, voice menu choices, and voice menu prompts.

Multiple administration terminals (MATs)

On Modular Option GP systems, up to four administration terminals are supported if the Multiple Administration Terminals feature is installed: one main administration terminal and up to three secondary terminals. In Meridian Mail release 8, this feature was known as User Administration Terminals (UATs) because only User Administration could be performed from the secondary terminals. All administrative functions can be performed on the main administration terminal. As of Meridian Mail release 9, the secondary terminals can be used to

- perform user administration
- perform voice services administration (such as creating or modifying voice services)
- view class of service definitions

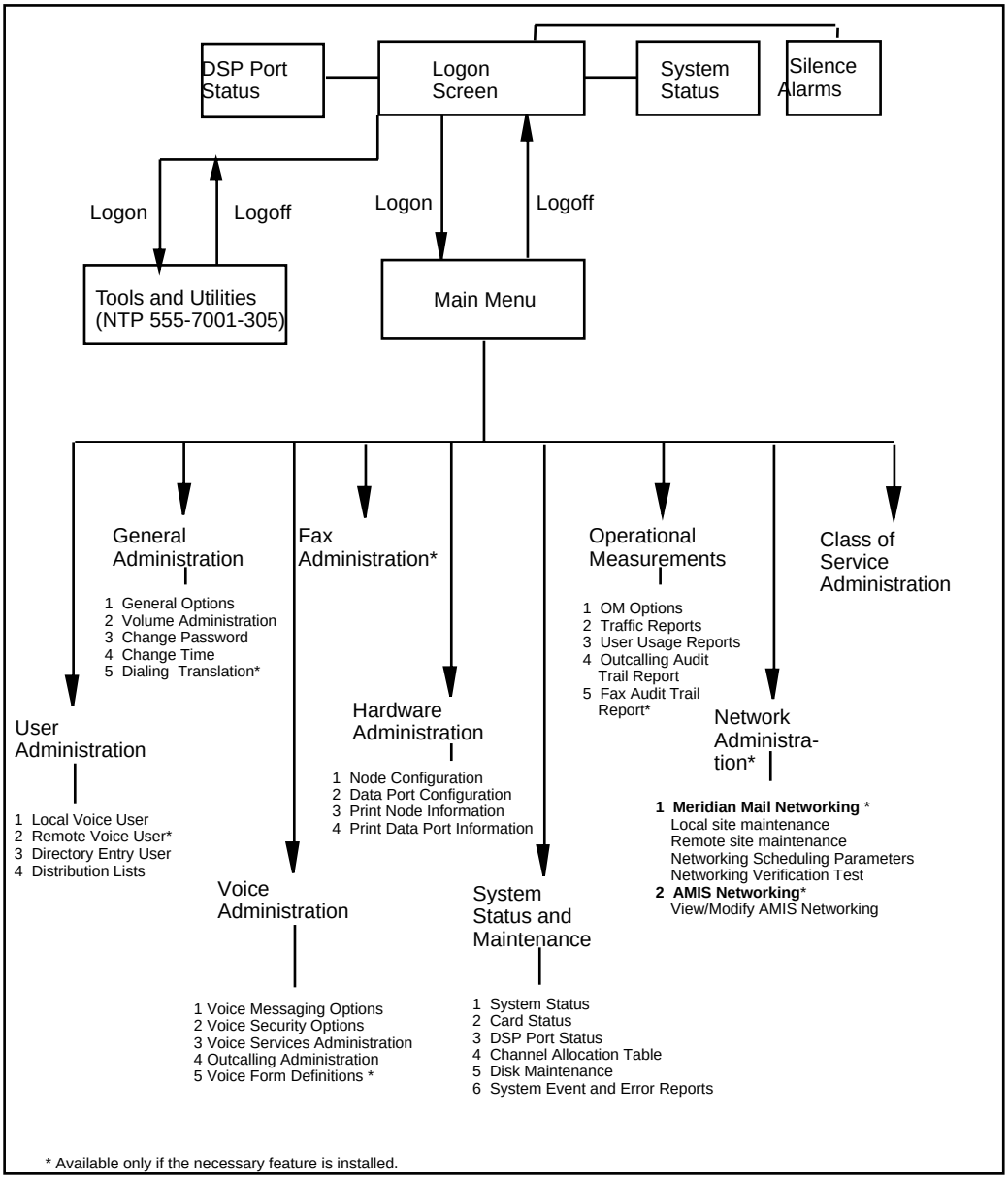
If more than one administrator accesses an entity (such as a user or a distribution list) at the same time, the administrator who first gained access has permission to save. The information displayed on the other terminals will be read-only.

For information about configuring multiple administration terminals, see the chapter "Configure MATs" in *System Administration Tools* (NTP 555-7001-305).

Administration overview

Figure 2-1 illustrates the hierarchy of menus available at the administration terminal.

Figure 2-1
System Administration menu hierarchy

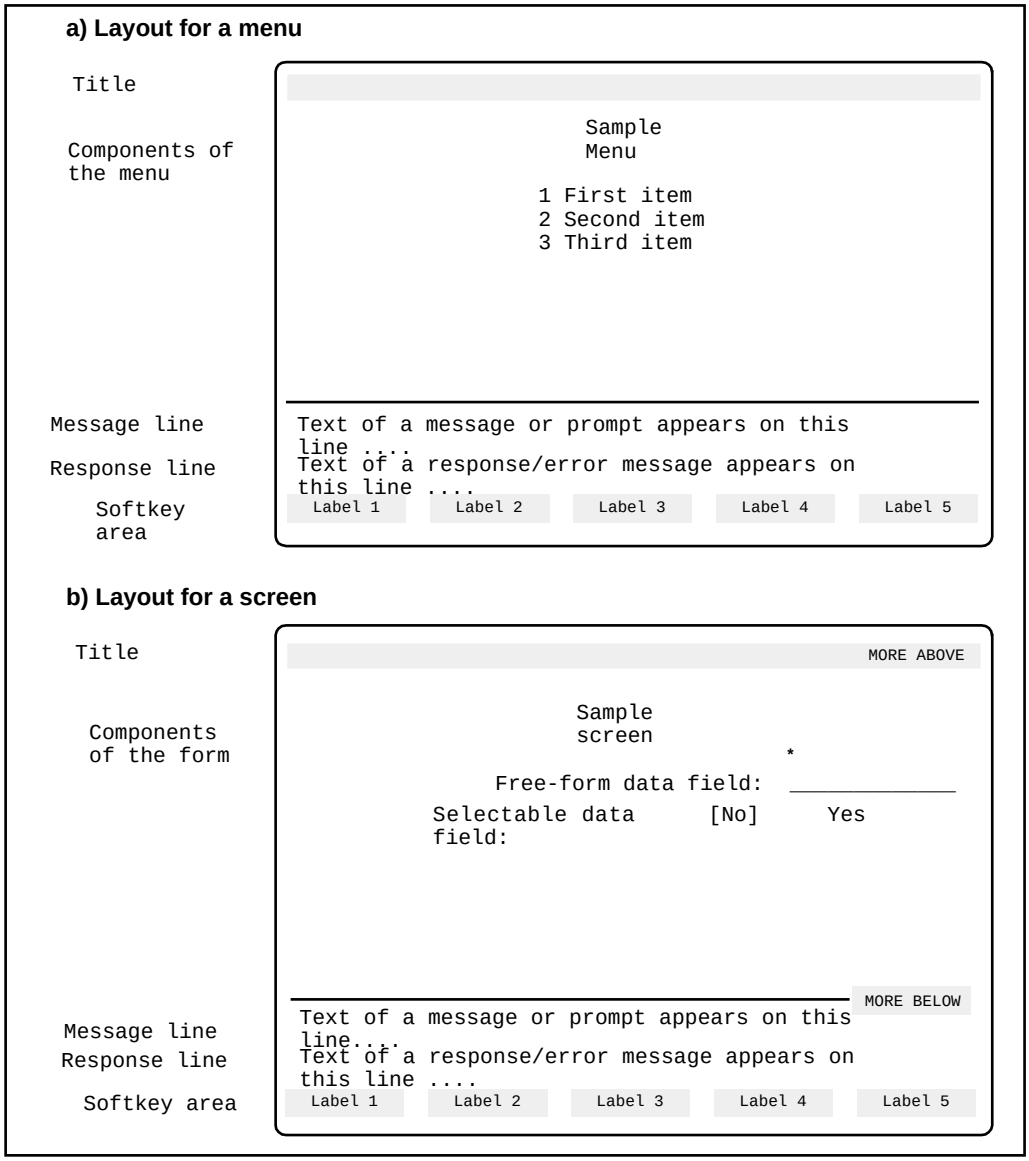


System administration screens: menus and screens

System administration screens and menus conform to the general layout shown in Figure 2-2. The title of each screen or menu appears on the first line of the screen. For menus, this is followed by a list of numbered items. For screens, the title is followed by fields for viewing or entering information. The bottom four lines of the screen are reserved for system prompts, responses, error messages, and softkey identification.

Two types of fields appear in administration screens: free-form data fields, where you can overwrite existing entries and enter new data; and selection fields, where the system presents a set of options from which you can select. Some fields may already be filled in with default values. Usually, this default value can be changed as needed.

Figure 2-2
General layout for menus and screens



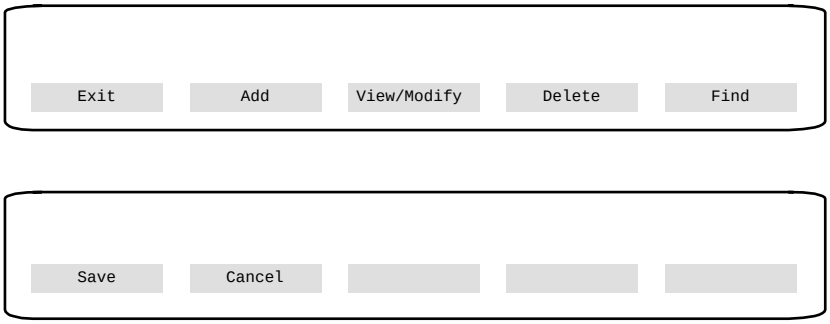
* In this guide, items surrounded by square brackets indicate a selected option. On Meridian Mail screens, selections are actually shaded.

Softkeys

Softkeys appear on the bottom two lines of menus and screens and are displayed in reverse video (dark characters on a light background). They correspond to function keys F6 through F10 on the top row of the keyboard. They also correspond to the keys on the keypad shown in Figure 2-4. The softkeys that appear will change depending on the menu or screen and may change with the function you are performing.

The following softkeys occur frequently on the administration screens: [Exit], [Add], [View/Modify], [Delete], [Find], [Save] and [Cancel]. If any of these keys occur on a screen, they will show up in the position indicated in Figure 2-3.

Figure 2-3
Common softkey positions



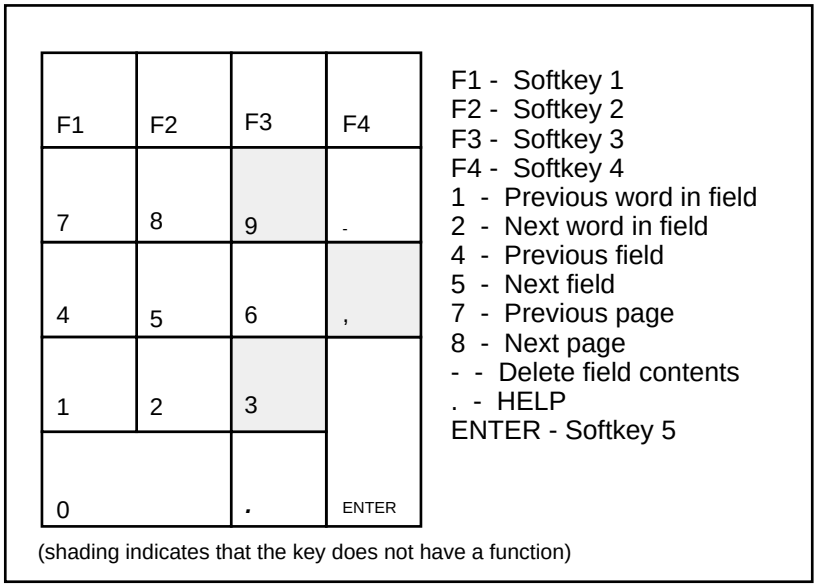
Keypad functions

Figure 2-4 also shows the other functions that are available on the keypad by pressing the single keys or the key combinations shown.

VT220 terminals and the following VT220-compatible terminals are supported: VT320, VT420, HP700/22, and HP700/32.

> ***Note:*** The functions shown in Figure 2-4 are only available if the keypad is in application mode. (Application mode is the default whenever the system is rebooted.) If you choose to work with a numeric keypad (where the numeric keys generate numbers when you press them), then only the F1, F2, F3 and F4 keys retain the functions indicated. The keypad is set to numeric mode through the terminal's set-up function; for details, consult the documentation for your terminal.

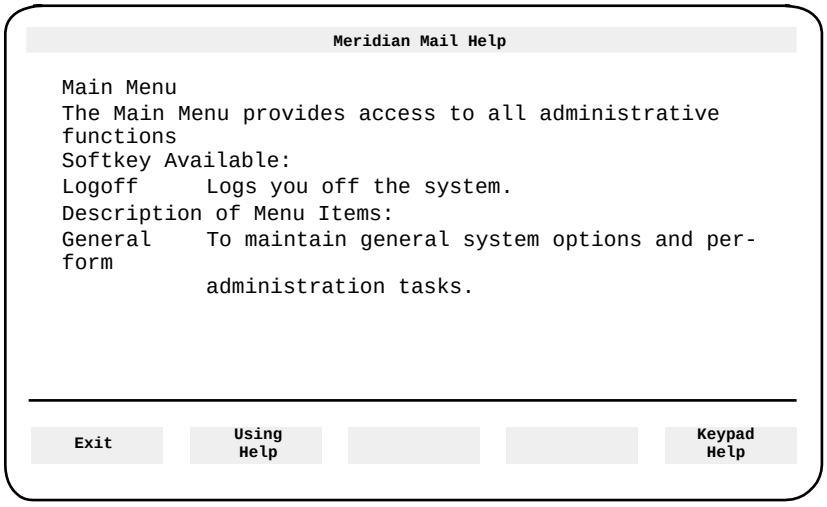
Figure 2-4
Numeric keypad function keys



The Help key

On-line help is available for most of the menus and screens, including the Main Menu. The <Help> key on the keyboard can be used to display information on whatever screen you are working in. If you require help with a screen, press the <Help> key. Alternatively, you can press the period (.) to call up help information. The system will display a screen showing explanations of all the fields on the menu or screen you are working in. When you are done, use the [Exit] softkey on the Help screen to return to the menu or screen you were working in. Figure 2-5 shows an example of the Help screen for the Main Menu.

Figure 2-5
Meridian Mail help example



Multipage screens

Certain screens may contain more fields than can be displayed at once on the screen. Additional pages are viewed by

- Scrolling

  If you see "More Below" at the bottom of a screen, or "More Above" at the top of a screen, use the down-arrow key or the <Next Scrn> hardkey to view the next page. Use the up-arrow key or <Prev Scrn> to return to the previous screen. When the "More Below" prompt disappears, you are at the end of the screen. When the "More Above" prompt disappears, you are at the top of the screen.

  Note: The down arrow key will only display the last input field, even if there is instructional text beyond it. To view any instructional text that may appear at the very end of a screen, use the <Next Scrn> hardkey.

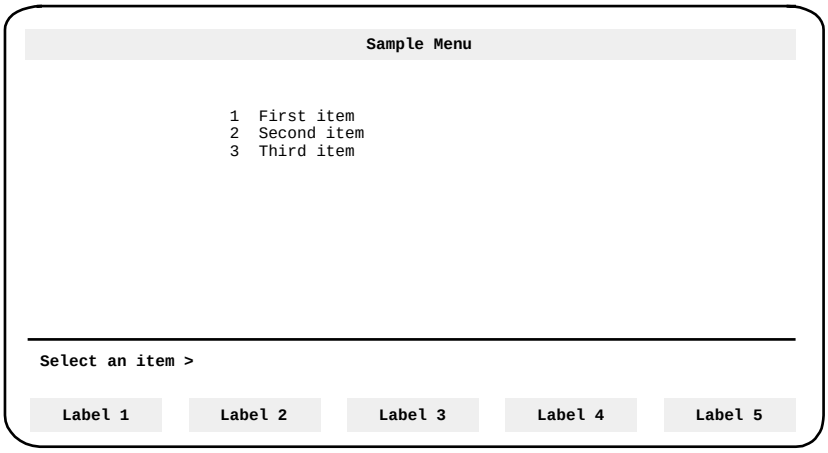
- Paging

  Use the [Next Page] softkey if it is displayed.

Selecting a numbered item in a menu

In a menu screen (see Figure 2-6), each item has a number. The system displays a prompt requesting you to select an item. To select a menu item, type the corresponding number and press the <Return> key. The number you enter appears next to the "Select an item >" prompt. When you press the <Return> key, the system displays a submenu or screen corresponding to the selected item.

Figure 2-6
Selecting a numbered item in a menu

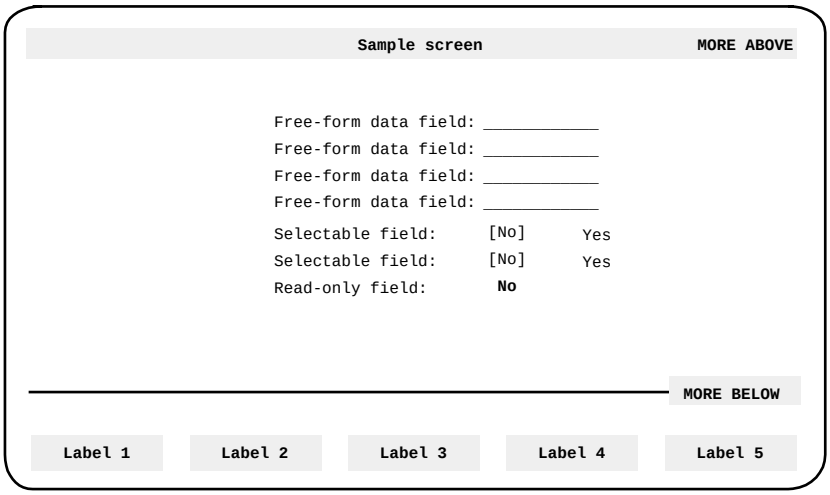


Entering information in a screen

There are two types of modifiable fields in the Meridian Mail administration screens (see Figure 2-7). *Free-form data fields* are fields in which you enter information, such as a user's name or mailbox number. *Selectable fields*, on the other hand, present a series of specific options from which to choose.

In order to modify a field, you must first move your cursor to it. Once the cursor is in the appropriate field, you can change its contents.

Figure 2-7
Entering information in a screen



Some fields display unmodifiable information. You cannot change the content of these read-only fields. The cursor may or may not position on these fields, depending on the type of screen displayed. When a selectable field is not modifiable, only the selected option will be displayed. For example, if a field is disabled, only "No" will be displayed. It will not be shaded.

Certain data fields must be filled in with a value whereas others are optional. Mandatory fields are pointed out in the field descriptions. If you neglect to fill in a mandatory field and then try to save your settings, the system will not save the screen and will prompt you to fill in the necessary field.

The following keys on the keyboard and on the application keypad (see Figure 2-4), move the cursor within or across fields:

- <**Tab**> moves the cursor to the next field.
- <**4**> on the application keypad moves the cursor to the previous field.
- <**Return**> moves the cursor to the next field.
- < ↑ > , the up arrow key, moves the cursor to the previous field or the field above.

- < ↓ >, the down arrow key, moves the cursor to the next field or the field below.
- < ← > < → >, the left and right arrow keys, move the cursor in the corresponding direction within an input field, but not between fields. They also move the cursor from one selection to the next in a selectable field.

The following keys change the contents of fields:

- <**Remove**> clears the current field.
- < ⌫ > deletes one character to the left of the cursor each time the key is pressed.
- <**Back Space**> deletes the character on which the cursor is positioned.

Procedure 2-1
Changing the contents of a free-form data field

1 If the field you want to change is below the current cursor position, use one of the following keys to move the cursor to the appropriate field: <Tab>, <Return>, or down arrow key.
or
If the field you want to change is above the current cursor position, use one of the following keys to move the cursor to the appropriate field: up arrow key or <4>.

2 If the field is not blank, delete the current entry using either <Remove> to clear the field, <Back Space> to delete the character on which the cursor is positioned, or < ⌫ > to delete the character to the left of the cursor (until the entry is deleted).

3 Enter the new information.

Procedure 2-2
Changing the contents of a selectable field

1 If the field you want to change is below the current cursor position, use one of the following keys to move the cursor to the appropriate field: <Tab>, <Return>, or down arrow key.
or
If the field you want to change is above the current cursor position, use one of the following keys to move the cursor to the appropriate field: up arrow key or <4>.

2 Use the right and left arrow keys to position the cursor on the appropriate selection.

3 When the cursor is positioned correctly, press <Return> to select.

Selecting an entire line

In some screens you are required to select an entire line. For example, in the View/Modify Directory Entry User screen, you must select a name from a list of users to indicate which user you want to modify. To select a line in a screen, place the cursor at the beginning of the line and press the spacebar. Screens requiring this mode of selection will indicate this in a prompt ("Move the cursor to the item and press the spacebar to select it").

Error messages

The system displays error messages, both general and screen-specific, on the line above the softkey display. These error messages are simply feedback to the administrator's actions. (They are not to be confused with SEER (System Event and Error Report) messages.) The messages remain on the screen until the next user input or until another error message appears. Typical error messages are

- "The key entered is not valid at this time."
- "Enter a number in the range of 1 to 6."

Note: If SEER printing is disabled, SEER messages will print out on the administration screen. To redraw the screen and clean up any interfering information, press <Control> <r>. This key combination can be used at any time to redraw the screen.

Nightly DR audits

The DR, or *organization directory*, contains information about users and voice services. A DR audit is performed if the DR has changed during the day due to administrative modifications (such as adding or deleting users and/or services), or if the previous evening's audit did not finish. The purpose of the audit is to rebalance (clean up) the system by removing obsolete data, reorganizing internal directories and so on. The DR changes whenever you do any of the following:

- User administration

  User administration includes adding, modifying, deleting users

- Voice services administration

  Voice services administration includes adding, modifying, or deleting DNs in the VSDN table, as well as adding, modifying, or deleting voice and fax service definitions (Announcements, Thru-Dial services, Time-of-Day Controllers, Voice Menus, and Fax Items).

If performed, the nightly audit begins at 3:30 a.m. (by default) and can take anywhere from a few minutes to 3 hours. (Three hours is the maximum. If the audit is not completed during this time, it will be completed during the next audit.) The length of the audit depends on how many changes have been made (the more changes, the longer it takes). You will know when the audit starts and ends because SEER 3135 is generated at the start and end of the audit.

ATTENTION

Do not do user administration tasks during nightly audits.

If an audit is in progress, do not perform any of the actions described in the previous section, "Nightly DR audits." These operations will fail if attempted during the audit. A number of SEERs, including 3135, will also be generated.

System and user data storage

Each node in the Meridian Mail system has a hard disk drive for data storage. The hard disk drives are partitioned into volumes. Volumes are storage areas for system-related or user-related information. The volumes are already set up when the system is installed.

The section "Volume numbers and distribution" in "General administration" describes the conventions used for naming volumes and the type of information stored on each volume for the different Meridian Mail configurations. Table 8-1 on page NO TAG specifies the storage capacities for each volume.

Chapter 3: System security

Overview

In today's telecommunications environment, every computerized system is potentiNorthern ally open to unauthorized access. As system administrator, it is your responsibility to take all necessary precautions to prevent security breaches. For example, unless your system has been properly secured, someone who is connected to Meridian Mail (such as a user who is logged on to a mailbox or an external caller who has connected to Meridian Mail through a call answering session or a voice menu) can place unauthorized calls that will be billed to your system.

This chapter summarizes the security features that are available to a Meridian Mail administrator to help minimize this risk.

- Controlling dialing through restriction/permission classes
- Controlling external caller dialing and fax delivery
  - call answering/express messaging thru-dial
  - Voice Menu Thru-Dial services
  - Fax on Demand callback delivery
- Controlling user use of mailbox features
  - mailbox thru-dial (extension dialing)
  - Outcalling
  - operator revert
  - call sender
  - AMIS networking
- Controlling access to mailboxes
- Controlling unauthorized access to the administration terminal

- Protecting sensitive information
- Implementing additional precautions for Fax on Demand applications
- Implementing Meridian 1 security

Controlling dialing through restriction/permission classes

Restriction/permission classes are groups or sets of dialing codes. Each restriction/permission class can include up to 10 restriction codes and up to 10 permission codes. Any dialing code can be entered as a restriction or permission code. A dialing code can be an extension number (on the switch) or any telephone number prefix that is used for dialing out of the switch (such as "9" for local calls or "91" for long distance calls, "6" for ESN calls, and so on).

Restriction codes are generally used for defining the "rules" of outdialing and permission codes are used for indicating the exceptions to the rule. For example, you might want to create a restriction/permission class that allows on-switch dialing and local dialing, but not long distance dialing (except to two specific area codes which are allowed). In this example, all mailbox numbers begin with either 2 or 3 and all long distance dialing codes begin with "91". Following, is an example of this type of restriction/permission class.

Restriction Codes: 1 4 5 6 7 8 91

Permission Codes: 91514 91504

In this example, local calls are allowed because "9" by itself is not restricted, only "91". This is because dialing codes that are a subset of a restriction code but that are shorter than the restriction code are not restricted. However, to allow outdialing to the long distance area codes "514" and "504~ you must enter "91514" and "91504" as permission codes since they are exceptions to the rule that numbers beginning with "91" are restricted.

You can define up to four different restriction/permission classes. This is done in the Voice Security Options screen. The default classes are named: "On Switch", "Local", "Long Distance 1", and "Long Distance 2". (These names can be changed.) As an example, you could use the OnSwitch class to allow dialing to extensions on the switch only and restrict all local and long distance calls. You could use "Local" to allow on-switch and local calls but restrict all long distance calls. You could use "Long Distance 1" to restrict all long distance calls. You could use "Long Distance 2" to restrict all international calls, but allow long distance dialing as long as it is to the same country code. Remember that these are only suggestions. You will be responsible for developing a policy for restricting outdialing that is suitable to your organization's needs.

Restriction/permission codes are described in more detail in the section "Voice security options" in the "Voice administration" chapter.

Once you have defined the restriction/permission classes in the Voice Security Options screen, you can apply a particular restriction/permission class to each of the following features shown in Table 3-1. This table also indicates the screens in which restrictions are applied to these features.

Table 3-1
Location of features to which restrictions can be applied

Screen	Features
Voice Security Options	Call answering/express messaging Thru-Dial
Add (or View/Modify) Class of Service	Extension dialing (mailbox thru-dial)
	Custom operator revert
	Remote Notification
	Delivery to Non-user
	Call sender
	AMIS Networking
Add (or View/Modify) Thru-Dial Definition	Thru-Dial services
Session profile (accessed from the VSDN table; necessary only if Fax on Demand is installed)	Fax Information service
	Fax Item Maintenance service
	Voice Menus (that activate fax services)
	Time of-Day Controllers (that activate fax services)

For example, you could apply the "Local" class to extension dialing, but apply the "On Switch" class to custom operator revert. Note that you can only apply one restriction class to a feature.

Some of these features apply to external callers, some apply to Meridian Mail users, and some apply to both. They are discussed in greater detail in the following sections, "Controlling external caller dialing" and "Controlling user use of mailbox features".

Settings for new systems

For new systems (that is, systems that have not been upgraded from a previous release of Meridian Mail), all four of the restriction/permission classes are defined as follows:

Restriction codes: 0 1 2 3 4 5 6 7 8 9
Permission codes: none

The Local class is assigned to all applicable features by default.

This means that all outdialing is restricted on a new system! You must modify the default restriction/permission classes. Otherwise, features that outdial (as listed on the preceding page) will not work.

Settings for converted systems

If you have converted to Release 9 from a previous release in which restriction/permission classes are implemented, the restriction and permission codes remain as they were defined in the previous release. Existing restriction/permission codes are not overwritten with the settings that are described in the previous section "Settings for new systems." However, you will have to ensure that the appropriate restriction/permission class is applied to any new features (such as Fax on Demand for Release 9 of Meridian Mail). This is also true if you begin to implement a feature that you did not use in the previous release.

After a conversion, it is recommended that an audit of security parameters be carried out to ensure prudent security practices are being followed.

Controlling external caller dialing and fax delivery

External callers who gain access to the Meridian Mail system can potentially use thru-dial capabilities to make unauthorized calls if the system does not protect against this. If Fax on Demand is installed, you will need to determine the restrictions that need to be applied to external callers who request that faxes be delivered using callback delivery. In other words, with callback delivery, callers are asked to specify the number to which a fax should be delivered. You will have to decide if you want faxes to be delivered to all numbers, only to local numbers, all long distance numbers, only certain area codes, and so on.

Call Answering/Express Messaging Thru-Dial

During a call answering session, an external caller could potentially use Thru-Dial capabilities to place unauthorized calls which would be billed to the system. To use Thru-Dial from a call answering session, a caller must press "0" followed by a dialable DN. (If the caller waits more than two seconds after entering "0", he or she will be connected to an attendant instead.)

Thru-Dial capabilities are also available to external callers and internal users during express messaging.

To prevent callers and users from abusing thru-dial capabilities during call answering and express messaging sessions, make sure an appropriate restriction/permission class is applied to call answering/express messaging in the Voice Security Options screen. You must choose one of the four restriction/permission classes that are defined in the Voice Security Options screen.

Thru-Dial services

All Thru-Dial services you create using the voice menus feature must be adequately protected with an adequate restriction/permission class. For Thru-Dial services, the restriction/permission class is selected in the Add or View/Modify a Thru-Dial Definition screen. You can choose from one of the four classes defined in Voice Security Options screen or you can customize the restriction/permission class for each Thru-Dial service you create. Therefore, if you are creating a Thru-Dial service that will primarily be used by external callers, you can make it more secure than those used by Meridian Mail users by applying more rigorous standards when applying restriction codes.

Fax on Demand

If Fax on Demand is installed, determine the restrictions that are to be placed on callback delivery of faxes.

Fax items can be accessed directly or indirectly through a voice menu or time-of-day controller. When adding the VSDN of the service through which the fax item will be made accessible, you must specify a session profile. In this session profile, you choose the fax delivery method. If it is set to either "Call Back" or "Caller Choice" you will have to specify a restriction/permission class (also in the session profile).

When the delivery mode is "Call Back", external callers will always be prompted to enter the number to which they want the fax item(s) delivered. If "Caller Choice" is selected, callers have the option of choosing callback delivery. The selected restriction/permission class places restrictions on the numbers to which fax items are allowed to be delivered.

You can choose one of the four restriction/permission classes defined in the Voice Security Options screen, or you can create a custom set of restriction/permission codes in each session profile.

For more information about the session profile, see the "Voice administration" chapter.

For more information about Fax on Demand, see the *Fax on Demand Application Guide* (555-7001-327).

Controlling user use of mailbox features

Restriction/permission classes can be applied to the following features in order to restrict user dialing.

Mailbox Thru-Dial (extension dialing)

Users also have access to Thru-Dial capabilities while they are logged into Meridian Mail. To restrict users from dialing certain numbers using thru-dial capabilities while logged into Meridian Mail, make sure an appropriate restriction/permission class is applied to extension dialing in the classes of service to which users are assigned. You must choose one of the four restriction/permission classes that are defined in the Voice Security Options screen.

Outcalling

There are two outcalling services: Remote Notification and Delivery to Non-User. Both of these features place calls outside of the system and, therefore, require that you consider which numbers are to be restricted. You must choose one of the four restriction/permission classes that are defined in the Voice Security Options screen.

Remote Notification

Remote Notification allows a user to be notified at a remote phone or pager when a new message arrives in his or her mailbox. MMUI users can define their own remote notification schedules and target DNs from their telephone sets. To restrict the target DNs to which users try to send remote notifications, you must assign a restriction/permission class to the Remote Notification feature in the classes of service you set up.

Delivery to Non-User

Delivery to Non-User (DNU) allows a Meridian Mail user to compose and send a voice message to someone who is not a Meridian Mail user. To restrict the numbers to which users are allowed to send voice messages, assign an appropriate restriction/permission class to the Delivery to Non-User feature in the classes of service you set up.

For more information about setting up classes of service, see the chapter "Class of service administration."

For more information about outcalling, see the *Outcalling Application Guide* (NTP-555-7001-322).

Operator revert

This feature allows a caller who is connected to a user’s mailbox to press "0" and connect to an operator or a secretary. Since users can customize this number from their own telephone sets, it is important to restrict the extensions/phone numbers they try to use as their revert DN. A restriction/permission class is assigned to the Custom Operator Revert feature in the classes of service you set up.

Call sender

This feature allows a Meridian Mail user to immediately call back the sender of a just listened to message by pressing "9". (This only applies to messages that have been left during call answering sessions and voice messages that have been composed and sent.)

Again, to restrict the numbers which a user can call back, you must apply a restriction/permission class to the Call Sender feature in the classes of service you set up.

AMIS networking

When a user composes a voice message and tries to send it to an AMIS site (that is not defined as a virtual node), Meridian Mail checks the restriction/permission class that is assigned to AMIS networking to see if it is restricted. The restriction/permission class is assigned to AMIS networking in classes of service. (In the case of Integrated AMIS, where the local site also has Meridian Networking, these restrictions will not apply to remote AMIS sites that are defined as virtual nodes in the local network database.)

Defining and applying restriction/permission classes

To define and apply restriction/permission classes, follow Procedure 3-1.

Procedure 3-1
Defining and applying restriction/permission classes

1 Define restriction/permission classes in the Voice Security Options screen. The Voice Security Options screen is accessed from the Voice Administration menu.

See page 10-29 in the "Voice administration" chapter for more information about defining restriction/permission classes in the Voice Security Options screen.

2 Configure classes of service so that the appropriate restriction/permission class is assigned to the following features:

- extension dialing
- custom revert
- external call sender
- AMIS networking
- outcalling features (Remote Notification and Delivery to Non-User)

See the chapter "Class of service administration" for more information about configuring classes of service.

3 Assign the classes of service to the system. See the section "General options" in the chapter "General Administration."

4 Assign users to classes of service. To restrict outdialing to certain numbers for a particular user, you must assign that user to the appropriate class of service (the class of service in which the appropriate restriction/permission class is assigned to a feature).

For example, you want User A to be able to use call sender only if the calling number is local. However, you want to allow User B to use call sender even if the number is long distance. In Class of Service 10, the Local restriction/permission class is assigned to call sender, restricting all long distance dialing. In Class of Service 15, the Long Distance 1 restriction/permission class is assigned to call sender (allowing long distance, but not international dialing). In this case, you would assign User A to Class of Service 10 and User B to Class of Service 15.

For more information about adding users and assigning users to classes of service, see the section "Adding local voice users" in the "User administration" chapter.

5 Apply an appropriate restriction/permission class to any Thru-Dial services that you create. You can choose one of the four classes already defined in Voice Security Options, or you can create a customized class for each Thru-Dial service you create.

See the Voice Menus Application Guide (NTP 555-7001-325) for details.

6 Apply an appropriate restriction/permission class to any directly accessible fax item, voice menu with fax items, or Time-of-Day controller that activates the fax information service. This is done in the session profile of the VSDN through which the fax item is accessed.

See the section "The session profile" in the "Voice administration" chapter or the Fax on Demand Application Guide (NTP 555-7001-327) for details.

Controlling access to mailboxes

Meridian Mail provides several ways of protecting user mailboxes against unauthorized access. This is mainly accomplished through the use of mailbox passwords.

The following parameters are configured in the Voice Security Options screen as described in the "Voice administration" chapter.

Password prefix

When a new mailbox is created, the default password (for MMUI users) is the user's extension. This means an increased risk of security breaches until the user changes his or her password. The password prefix provides another level of security by adding a short prefix to the (obvious) default password. For example, if a user's extension is 2339, and the password prefix is 34, the user's default password will be 342339. When the user changes his or her password, the prefix is no longer necessary. This field is blank by default. You must, therefore, enter a value for this prefix to take effect. The prefix does not apply to existing mailboxes since it is added to the password only when a mailbox is first created.

> ***Note:*** This prefix is only applicable to MMUI users. VMUIF users continue to have their default password set to null and must log in from their "home phone" to change their password.

Password change

The mailbox password is changeable by both the administrator and the mailbox user. It can be altered as often as desired. To compel mailbox users to change their passwords frequently, you can specify how often users are required to change their passwords. For example, you can require users to change their passwords every 30 days. The default is "0", meaning that users are not required to change their passwords at all.

This parameter is configured in the Voice Security Options screen and is called *Maximum Days Permitted Between Password Changes* .

Password length

Mailbox passwords can be between 4 and 16 digits in length. The greater the number of digits used in a password, the greater the security. You can specify the minimum password length in the Voice Security Options screen. (The default is 4.)

Invalid logon attempts

To guard against unauthorized access, you can have mailboxes automatically lock users out when a certain number of invalid mailbox logons have been attempted. There are actually two fields that can be configured in the Voice Security Options screen: *Maximum Invalid Logon Attempts Permitted per Session* (the default is 3) and *Maximum Invalid Logon Attempts Permitted per Mailbox* (the default is 9). When this maximum limit is reached, the user's mailbox is disabled and must be reenabled by the administrator.

Secured messaging option (external logon)

External logon is enabled by default, allowing users to log on to their mailboxes from phones that are external to the switch. If security is of the highest priority, Meridian Mail provides a facility allowing the system to restrict access to a mailbox from an off-site location. This option (SW7007) can be ordered from a Nortel sales representative and is implemented by authorized field technicians.

Note: Once external logon is disabled on a system, it cannot be reenabled.

Controlling unauthorized access to the administration terminal

There are two facilities provided for protecting against unauthorized access to the Meridian Mail administration terminal: the administration password and hardware-based remote access restriction.

Administration password

The administration terminal is password protected. When Meridian Mail is first installed, there is a default password. The first time you log on to the Meridian Mail administration terminal, you are forced to change this default password. You are recommended to change this password on a regular basis to maximize system security. Passwords can be between 1 and 16 characters in length. However, it is recommended that the password be no less that 7 characters in length. The longer the password, the less likely it is that someone will guess it.

Every time the administrator changes the logon password, a SEER (system event and error report) is generated, indicating this change. A SEER is also generated every time there is a failed logon attempt. This allows you to be aware of any attempts to breach the system’s security.

See the chapter "Administrator logon and the main menu" for more information.

Always log off before you leave the administration terminal, even if only for a short period.

You should investigate system security and overall system status whenever any of the following occurs:

- The administration password no longer provides system access (because it has been changed or locked out due to too many invalid logon attempts).
- A SEER indicates that the administrator password was changed (without the administrator's knowledge).
- A SEER indicates a failed administrative logon attempt.

Remote access restriction

Meridian Mail is configured with an A/B switchbox between the terminal and modem. When the switch is set to the modem setting, the system can be remotely accessed. When the switch is set to the terminal setting, access is only possible from the local terminal. This switch is controllable at the site and must be switched manually. The switch should be left in the terminal setting unless there is a compelling reason to switch it to the modem setting. See the section "Using a remote terminal" in the chapter "Administrator logon and the main menu".

If the system is equipped with AdminPlus configured for a remote console, be sure that remote access from a remote AdminPlus console is disabled when not in use.

Protecting sensitive information

If your organization uses information-providing services such as Voice Menus, Announcements, and Fax Items to disseminate information, you may have certain services which contain sensitive information and which you want to make accessible only to authorized personnel. Added security can be provided for these types of services through the use of access passwords.

An access password can be defined for Voice Menus, Announcements, Thru-Dial services, and Fax Items. If this password is defined by the administrator, a caller will not be able to access any of these services unless he or she knows the password.

In the case of Thru-Dial services or Voice Menus that include Thru-Dial services, this might be desirable if the Thru-Dial service allows long distance or international calling. A password, given out only to authorized

personnel, will block unauthorized persons from using the Thru-Dial service.

In the case of information services, such as Announcements, Voice Menus, Voice Forms, and Fax Items, you can protect sensitive information with an access password so that only authorized people (those who know the password), can gain access to the information.

Access passwords are defined in the following screens:

- Add, View/Modify an Announcement Definition
- Add, View/Modify a Voice Menu Definition
- Add, View/Modify a Thru-Dial Definition
- Add, View/Modify a Fax Item Definition

For more information about Announcements, Voice Menus and Thru-Dial services, see the *Voice Menus Application Guide* (NTP 555-7001-325). For more information about fax items, see the *Fax on Demand Application Guide* (NTP 555-7001-327).

Additional protection for Fax on Demand applications

With the introduction of Fax on Demand in Meridian Mail Release 9, there are a few new security parameters specifically aimed at Fax on Demand applications. These include the session time limit and the maximum number of invalid selections. Both of these parameters are configured in the session profile of the VSDN through which the Fax Item (or Fax Item Maintenance service) is accessed. For more information about the session profile, see the "Voice administration" chapter. For more information about Fax on Demand, see the *Fax on Demand Application Guide* (NTP 555-7001-327).

Session time limit

The session time limit is defined in the session profile for Voice Menus and Time-of-Day Controllers that activate the Fax Information service or the Fax Item Maintenance service, as well as for stand-alone Fax on Demand applications. It is the maximum amount of time that a call session is allowed to last. This time does not include the time consumed by *Same Call Fax Delivery*. This limit can be between 1 and 99 minutes. (The default is 10 minutes.)

Maximum number of invalid selections

This parameter sets a limit on the number of invalid selections that a caller can make while connected to a voice menu that activates fax items. This prevents callers from tying a line up for long periods of time and preventing other callers from getting through.

Chapter 4: Setting up the system

Once the switch has been provisioned, you are ready to set up the Meridian Mail system. Begin with the basic setup procedure described in Procedure 4-1 to check that Meridian Mail is operational, change the system administration password and configure general operating characteristics of the system.

This chapter outlines general procedures and provides page references to sections that provide detailed information about the various aspects of configuration. Read the appropriate sections before configuring the system. Also review the site-specific and user-specific information you have prepared using the forms in the *Site and Installation Planning Guide* (NTP 555-70x1-200).

Basic setup procedures

Before carrying out any of the following steps, ensure that Meridian Mail has been properly provisioned on the switch. This is described in the *Installation and Maintenance Guide* (NTP 555-70x1-250).

The following steps are common to all Meridian Mail installations, and are necessary for your system's operation.

Procedure 4-1
Setting up the system

Step 1. Change the system administrator password.	
Log on to the administration terminal with the default password (adminpwd). You are prompted to change the password the first time you log on with the default password.	See page 5-13.
Step 2. Check the hardware configuration.	
Check the node configuration and data port configuration.	
From the Main Menu, select Hardware Administration, Node Configuration.	See page 11-3.
If the configuration is incorrect, log on to the TOOLS menu, access HW_Modify and correct the configuration.	See Chapter 3 in the *System Administration Tools Guide (NTP 555-7001-305)*.
Check the data port configuration to verify the correct assignment of data devices, especially parameters such as the baud rate and parity for the administration console.	
From the Main Menu, select Hardware Administration, Data Port Configuration.	See page 11-9.
If the configuration is incorrect, log on to the TOOLS menu, access HW_Modify and correct the configuration.	See the *System Administration Tools Guide (NTP 555-7001-305)*.
Step 3. Check the system status.	
From the logon screen, press the [System Status] softkey to ensure that the Meridian Mail system is operational.	See page 5-5.

-continued-

Step 4. Check the Channel Allocation Table.	
Note: This step should only be carried out by a qualified technician to ensure consistency between the switch and the Meridian Mail system. This step may have already been carried out by the installation technician. From the Main Menu select System Status and Maintenance, Channel Allocation Table. Configure the Primary DN and Channel DN for each TN. Configure the service(s) for which the channel will be used. In most cases channels are shared by all services. If any channels are to be dedicated to a specific service, enter the service here.	See page 12-19.
Step 5. Configure general options for your system.	
From the Main Menu select General Administration, General Options. Do the following Enter the System Name (this is the name that will appear on reports). Enable SEER printing (if you have a printer attached to the administration terminal). If SEER printing is enabled but no printer is attached to the administration terminal, SEERs will overwrite the display on your administration terminal. Assign an Attendant DN. If Meridian Mail is unable to handle a call, it is reverted to this number. Each user can have a custom revert DN. (An attendant DN cannot be configured if VMUIF is installed on the system.)	See page 8-4.
Step 6. Set up dialing translations.	
Note: This step is necessary only if AMIS Networking and/or Fax on Demand is installed. Define network access prefixes (for local off-switch, long distance and international dialing) and dialing translation tables. These prefixes and tables are used by AMIS networking and fax call back delivery. From the Main Menu, select General Administration, Network Dialing Translation.	See the chapter "Setting up dialing translations".
-continued-	

Step 7. Customize voice security options.	
From the Main Menu, select Voice Administration, Voice Security Options.	
Define restriction and permission codes.	See page NO TAG.
THIS IS A VERY IMPORTANT STEP! These codes are applied to features like mailbox Thru-Dial, express messaging Thru-Dial, custom revert DN, extension dialing, Call Sender, Thru-Dialers (the voice menu application), and outgoing AMIS messages. All of these features are initially restricted (unless you have upgraded from previous releases, in which case these codes are not changed during conversion). This means that none of these features will work until you modify the restriction/permission codes to allow certain external phone numbers or internal extension numbers to be dialed.	
Set the maximum number of invalid logon attempts that a user is allowed to make before being locked out of his or her mailbox.	
Change the default parameters that affect user passwords (such as the number of days allowed between password changes, the minimum password length, password prefix, and so on). Note that these parameters do not apply if VMUIF is installed on the system.	See page 10-29.
Step 8. Customize voice messaging options.	
From the Main Menu select Voice Administration, Voice Messaging Options.	
If MMUI is installed on the system Record a custom call answering greeting if desired. Configure the broadcast mailbox number. Enable users to record their own personal verifications (if desired). Set the maximum message length. Set the maximum amount of time that user's read messages are kept before being deleted by the system. (Note that this impacts disk space.) If your system is multilingual, select the default language and secondary default language.	See page 10-12.
If VMUIF is installed on the system Record a customized VMUIF introductory tutorial (this is played when users log on for the first time). Configure the lockout revert DN. Configure the maximum message length. Configure the maximum amount of time that user's read messages are kept before being deleted by the system.	See page 10-20.
-continued-	

Step 9. Add DNs to the VSDN table.	
For each voice service that is to be directly dialable by internal users and/or external callers, define a DN in the VSDN table. This includes services such as voice messaging and express messaging. From the Main Menu select Voice Administration, Voice Services Administration, Voice Services-DN Table.	See page 10-47.
Step 10. Define classes of service (COSs).	
Each user on the system must be assigned to a class of service. A class of service defines operating parameters for a group of users that have similar needs. When you change a parameter in a COS, all user profiles belonging to that COS are automatically modified accordingly. Up to 15 classes of service can be defined. The following features are enabled in classes of service: Remote Notification Delivery to Non-User AMIS networking If you will be configuring any of these features, identify which classes of service need to have these features enabled in order to support users. If you want to configure these services now, refer to the *Outcalling Application Guide* (NTP 555-7001-322) and/or the *Networking Services Administration Guide* (NTP 555-7001-335). From the Main Menu, select Class of Service Administration.	See the chapter "Class of service administration".
Step 11. Configure the operational measurement options.	
This step does not need to be done right away. You may choose to use the default settings at first. Once the system has been in use for a while you can decide if the level of detail is adequate. From the Main Menu, select Operational Measurements, Operational Measurements Options.	See Page 13-5.
-continued-	

Step 12. Add users to the system.	
Read the section on "Distributing users over volumes" before beginning.	See page 7-4.
Before adding users, you should decide which users need to be assigned to which class of service since this will determine the capabilities that are available to them. For example, if a user needs remote notification capability, you must assign them to a class of service in which remote notification is enabled.	
From the Main Menu, select User Administration.	
Add local voice users. These are users that are on your system and that have a mailbox. Each local voice user must be assigned to a class of service.	See page 7-10.
Add Directory Entry Users for people who want to be accessible by name dialing, but who do not need a mailbox. (VMUIF users cannot be added as Directory Entry Users.)	See page 7-36.
If Networking is installed, users at remote sites can be added as Remote Voice Users (the reasons for doing this are explained in the "User administration" chapter).	See page 7-30.
Step 13. Create distribution lists.	
This step does not have to be part of the initial configuration. If you know which lists you will need to create at this time, you may do so so that they will be ready for you to use. If you are unsure at this point, these can be created at any time.	
From the Main Menu, select User Administration, Distribution Lists.	See page 6-85.
-continued-	

Step 14. Configure optional features and other services.	
You can either continue with the configuration of those optional features that are installed on your system (Voice Menus, Voice Forms, Fax on Demand, AMIS, Meridian Networking) or you can back up the system now (as described in the following step) and continue at a later time.	
Additional features include	
- Outcalling	See the *Outcalling Application Guide*.
- AMIS Networking	See the *Networking Services Administration Guide*.
- Meridian Networking	
(You may have already configured Outcalling and AMIS Networking. See step 10.)	
The services that you create will depend on the features that are installed and your organization's needs. Other services include	
- Voice menus, announcements, thru-dial services, time-of-day controllers	See the *Voice Menus Application Guide*.
- Voice forms and transcription services	See the *Voice Forms Application Guide*.
- Fax information services	See the *Fax on Demand Application Guide*.
Note: For each service that you create that is directly dialable by users or external callers, add a DN to the VSDN table - see step 9.	
Step 15. Back up the system.	
Once the system configuration has been customized, back up the new data onto tape to ensure its safety.	See page NO TAG.
-end-	

Routine maintenance and service procedures

The following steps are carried out regularly to ensure efficient operation of your system and to anticipate future needs concerning system capacity and types of services offered to users.

Procedure 4-2
Maintaining and servicing your Meridian Mail system

Step 1. Monitor Meridian Mail operation.	
Check the performance of your Meridian Mail system periodically to ensure that efficient use is made of the voice services provided on your system.	See the "Operational measurements" chapter.
Step 2. Monitor Meridian Mail hardware.	
Check the operation of Meridian Mail hardware periodically, or when a problem is reported by the system.	See the "System status and maintenance" and "Hardware administration" chapters.
Step 3. Modify user information.	
User information can change periodically, due to relocation, change in classification, or the addition of new equipment and services. Such changes need to be reflected in the user information. ***Note:***	See the sections "Finding users ", "Modifying users", "Deleting users" and "Modifying distribution lists" in the "User administration" chapter.
Step 4. Back up the system.	
When changes are made to your system, back up the new data to ensure its safety.	See "Volume administration" in the "General administration" chapter.

Setting up optional features

Meridian Mail provides a number of optional features which must be set up if installed on your system. Included are Outcalling, Voice Menus, Voice Forms, Fax on Demand, Meridian networking, AMIS networking.

Outcalling

The Outcalling feature refers to two functions. The first allows Meridian Mail users to be notified of new messages at remote phone or pager numbers and is known as Remote Notification (RN). The other feature, Delivery to Non-User (DNU) allows users to compose and deliver messages to non-users of Meridian Mail.

To configure Outcalling you must first enable remote notification and/or delivery to non-user in classes of service. There are also a number of outcalling parameters to configure in classes of service. In the Outcalling Administration screen, there are additional outcalling parameters, such as DNU retry limits and intervals, DTMF confirmation and some pager information. Once these parameters have been set up, you can add users (or assign existing users) to the appropriate class of service in which RN and/or DNU is enabled. At this stage, either the administrator or the user can create a remote notification schedule if Remote Notification is enabled. Once Outcalling services are in use, you can monitor them using the Outcalling Audit Trail Report.

You may not have to change any of the parameters if you find that the default values are adequate. However, you should look over the default configuration to ensure that your specific requirements are met.

Refer to the *Outcalling Application Guide* (NTP 555-7001-322) for detailed planning and configuration instructions.

Voice menus

The Voice Menus feature is an installable feature that comprises the following voice services:

- Announcements, which play a simple recording to callers
- Thru-Dial services, which prompt callers for an extension or name (if name dialing is enabled) and then route them to the appropriate person (if defined in the Meridian Mail directory)
- Time-of-Day Controllers, which route calls to particular voice services based on the date and time of day that a call is received

- Voice Menus, which present callers with a series of choices or menu actions, from which a caller can choose (*"Press 1 to ..., Press 2 to ..."*)

There are two additional features to help you maintain your voice services:

- voice prompt maintenance, which allows an administrator to log in from a telephone set to record announcements and greetings and prompts for voice menus and thru-dial services
- remote activation, which allows an administrator to log in from a remote telephone and change the voice service that is associated with a particular DN (for example, in the case of a severe storm, you can make the main DN access a special office closure announcement or menu instead of the normal autoattendant)

Detailed planning and configuration procedures for voice menus are described in the *Voice Menus Application Guide* (555-7001-325).

Voice Forms

Voice Forms are an optional feature and may not be installed on your system.

Voice Forms take callers through an electronic form in which they are asked a series of questions to which they respond with voice. Each completed voice form is considered a response. Once recorded, transcribers can log in to the voice form in order to listen to and transcribe caller responses. This information can then be entered into another application, such as a database, if necessary.

Voice Forms are described in detail in the *Voice Forms Application Guide* (NTP 555-7001-326). For information about transcribing voice forms, see the *Meridian Voice Forms Transcriber User Guide*.

Fax on Demand

Fax on Demand is an optional feature that is new to Meridian Mail Release 9. It allows you to store Fax Items in the system and then make them accessible to external callers and internal users.

Fax items can be accessed directly. In this case, the fax service has a unique DN entered in the VSDN table which is published. Depending on how the service is set up, the fax will either be delivered on the same call (only if the caller is calling from a fax phone), or the caller will be prompted for a callback number. This is the number of a fax phone to which the fax will be delivered at a later time. You can also give callers the choice of choosing same call delivery or callback delivery.

You can also include Fax Items in Voice Menus. This allows you to create fax menus that are collections of fax items only, or combine Fax Items with other services in your voice menus.

For information about configuring this service, refer to the *Fax on Demand Application Guide* (NTP 555-7001-327).

Meridian Networking

Meridian Networking is an optional feature and may not be installed on your system.

Meridian Networking allows users at one Meridian Mail site to compose messages to and receive voice messages from another Meridian Mail site. This type of networking, also known as proprietary networking, requires that each site in the network have Meridian Mail. This is unlike AMIS networking and Network Message Service (NMS).

See the chapter "Meridian Networking administration" in the *Networking Services Administration Guide* (NTP 555-7001-335) for details.

AMIS networking

AMIS networking is an optional feature and may not be installed on your system.

AMIS is a standardized networking protocol that allows users in your Meridian Mail system to compose messages to and receive voice messages from users at other voice messaging sites. This means that the remote users can be part of a voice messaging system other than Meridian Mail, and still be able to send voice messages back and forth.

AMIS networking must be enabled in the class of service to which a user belongs for a user to have access to this feature.

See the chapter "AMIS networking" in the *Networking Services Administration Guide* (NTP 555-7001-335) for details.

Chapter 5: Administrator logon and the main menu

Once the Meridian Mail system has been installed and the software is loaded, you are ready to log on to the system to gain access to the system administration menus - the starting point for initial setup of the system and general administrative functions.

Administrative functions can be carried out from the main administrative console attached to your Meridian Mail system or from a remote terminal connected to the system through a modem. Remote access is generally used by off-site service personnel to troubleshoot a system. A remote administration configuration is shown in Figure 5-9. If your installation uses this feature for the purpose of support from service personnel, you must coordinate remote administration sessions. See "Using a remote terminal" later in this chapter.

If the Multiple Administration Terminals feature is installed, Meridian Mail can support up to four administration terminals: one main administration terminal and up to three secondary terminals, or MATs. However, only a limited number of administrative tasks can be performed from a MAT as opposed to the main administration terminal. These tasks include

- user administration (adding, modifying, and deleting mailboxes)
- class of service (COS) administration (read-only functions, view and find, are supported)
- voice services administration by adding/viewing/modifying/deleting the following:
  - voice service-DNs
  - announcement definitions

- Thru-Dial definitions
- time-of-day control definitions and voice menu definitions)

See the *System Administration Tools Guide* (NTP 555-7001-305) for more information about configuring MATs. For more information about voice menus, see the *Voice Menus Application Guide* (NTP 5551-7001-325).

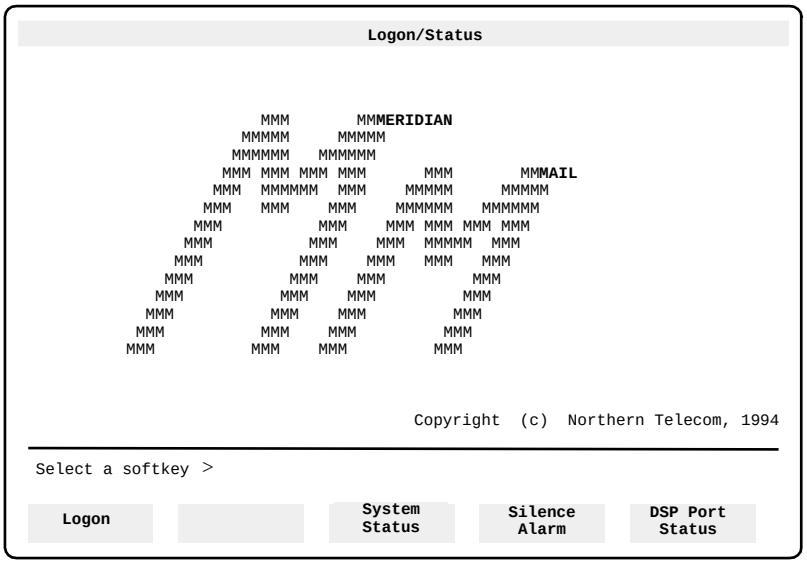
ATTENTION

Keep your system secure.
Do not leave the administration terminal logged on when it is unattended. Otherwise, you are leaving your system open to unauthorized access.

The Logon/Status screen

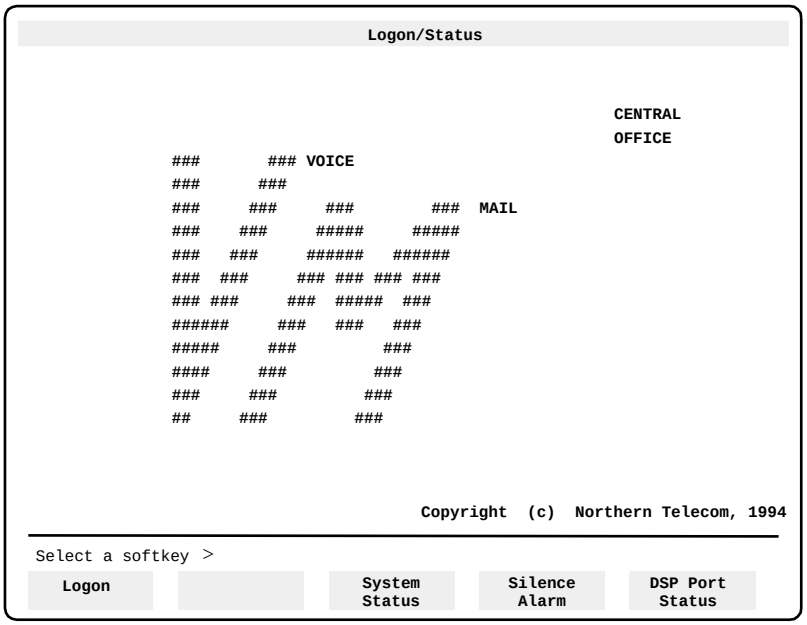
The Logon/Status screen (Figure 5-1 for CPE systems or Figure 5-2 for CO systems) is displayed when the administration terminal is idle. From this screen you can log on to the administration console to set up the system, carry out administrative tasks on a system-wide basis or on a per-user basis, configure various voice services, or use the softkeys on the Logon/Status screen to view the system status or DSP port status screens, or silence any alarms.

Figure 5-1
The Logon/Status screen (for CPE systems)



Note: Throughout the rest of this guide, whenever the Logon/Status screen is illustrated, only the CPE version shown in Figure 5-1 will be displayed.

Figure 5-2
The Logon/Status screen (for CO systems)



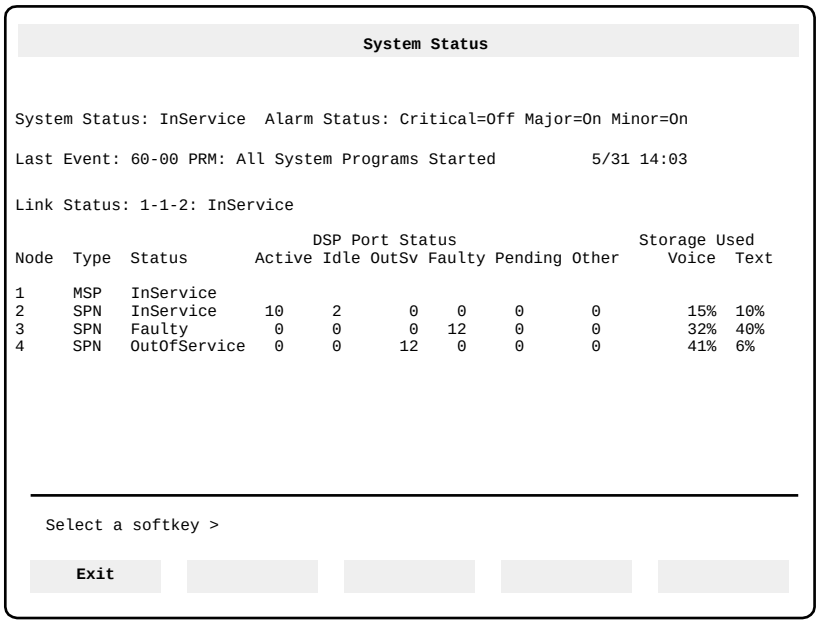
Note 1: When logging on at a MAT, only the [Logon] softkey is displayed.

Note 2: Sometimes when you power down your terminal and then power it back up, the screen is drawn incorrectly. Namely, instead of the line that appears near the bottom of the screen (above the softkeys), a row of "q"s appears instead. Should this ever happen, do the following in order to redraw the screen: Press Ctrl-w (a small window opens up). Type **if**. (You do not have to press <Return>. The "i" means initialize and the "f" means full screen.)

Checking the system status

You can check the system status from one of two locations: the logon screen, or from the System Status and Maintenance Menu. The System Status screen (as shown in Figure 5-3) is displayed when you press the [System Status] softkey on the Logon/Status screen. When accessed from the logon screen, the System Status screen is a read-only screen that dynamically updates when the status of the system, system nodes, and DSP ports changes. Additional softkeys are displayed on this screen when it is accessed from the System Status and Maintenance Menu. These softkeys allow you to enable or disable nodes and courtesy down ports on the entire system. For more information about the System Status screen, see "System Status" in the chapter "System status and maintenance."

Figure 5-3
The System Status screen



The following fields are displayed on the System Status screen:

- ***System Status*** This field displays the current system status. Your system can be in one of the following states:
  - ***InService*** This state indicates that the system is running.
  - ***CourtesyPending*** This state indicates that the system is in the process of shutting down. This occurs after using the [Courtesy Down System] softkey. Incoming calls are directed to an attendant. Calls in progress are not interrupted. Each DSP port is courtesy disabled as it becomes idle. The software remains loaded.
  - ***CourtesyDown*** This state indicates that the system has shut down and is no longer operational nor accepting calls. The software remains loaded. When the system is down, the [Courtesy Down System] softkey becomes [Activate System]. When used, the system will restart and eventually return to an InService state.
  - ***Loading*** This state indicates that the system is loading software during bootup.
- ***Alarm Status*** This field indicates the state of each of the following alarm categories:
  - ***Critical*** These alarms indicate a service-affecting problem that requires immediate attention.
  - ***Major*** These alarms indicate a service-threatening problem that may be allowed to persist (for up to 24 hours). If not attended to, the alarm could become critical.
  - ***Minor*** These alarms indicate a problem that has no impact on the system or users.

  The status for each type of alarm will be one of the following:
  - ***Off*** This status indicates that there are no new alarms. This does not necessarily mean that there are no error conditions as alarms may have been silenced from the Logon/Status screen, but the error conditions causing the alarm may still exist.
  - ***On*** This status indicates that one or more alarm situations was detected.
  - ***Unk*** This status indicates that the status is unknown.
- ***Last Event*** This is the most recent system event or error (SEER) logged.

- ***Link Status*** This is the status of the SMDI link to the DMS or SL-100 switch. The link will be in one of the following states:
  - ***InService*** This state indicates that the link is operational.
  - ***Faulty*** This state indicates that a hardware or software problem exists on the link.
  - ***Unequipped*** This state indicates that the link is not defined in the hardware database. *System Administration Tools* (NTP 555-7001-305) describes how to modify the hardware database.
  - ***InSvYelAlarm*** This state indicates that the SMDI link is in service but has lost the modem connection.
  - ***InSvRedAlarm*** This state indicates that the SMDI link has lost the signaling with the host (DMS-100, DMS-10 or SL-100).
  - ***OutOfService*** This state indicates that the link is not operational and that calls are not being accepted.
- ***Node*** This field indicates the node number.
- ***Type*** This field indicates the type of node.
- ***Status*** This field indicates the status of the nodes in your system. A node may be in one of the following states:
  - ***InService*** This state indicates that the node is operational.
  - ***Unequipped*** This state indicates that the node is not defined in the hardware database. *System Administration Tools* (NTP 555-7001-305) describes how to modify the hardware database.
  - ***Faulty*** This state indicates that a critical program on the node is not operational.
  - ***OutOfService*** This state indicates that the node is no longer operational, as a result of a forced disable.
  - ***Loading*** This state indicates that the node is currently starting up and loading software into memory. No software is running when the node is in this state.
  - ***Booting*** This state indicates the operating system is being loaded on the node.

- ***DSP Port Status*** These fields reflect the state of each DSP port on the associated node. For each DSP port that is in a particular state, an entry is made in the appropriate column. A DSP port may be in one of the following states:
  - ***Active*** This state indicates that the DSP port is operational and is currently in use.
  - ***Idle*** This state indicates that the DSP port is operational but not in use at the moment. The DSP port is ready to accept calls.
  - ***OutSv*** This state indicates that the associated DSP port is not operational, as a result of a courtesy disable or forced disable.
  - ***Faulty*** This state indicates that the an error has been detected in the DSP port.
  - ***Pending*** This state indicates that there has been a request to shut down the DSP port. The port is either in the process of shutting down or restarting.
  - ***Other*** This state indicates that the DSP port is temporarily unavailable. This usually occurs while the system is booting up. The status remains as "Other" while the software is loading. Once fully loaded, the status automatically becomes "Active" or "Idle". The status may also appear as "Other" when you reenable a port (for as long as the necessary software is loading). The status returns to "Idle" once the port has been enabled.
- ***Storage Used*** These fields indicate the amount of voice and text storage used as a percentage of available storage on the user volume of this node. (If the disk on a node is bad, percentages are not displayed.)

Procedure 5-1
Viewing the system status from the logon screen

Starting point: The Logon/Status screen

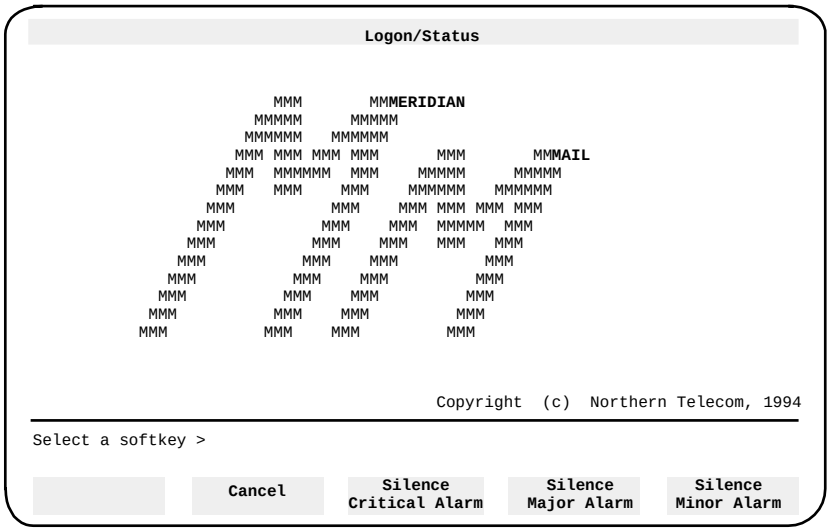
1 Press the [System Status] softkey to view the status of your system.

2 Use [Exit] to return to the Logon/Status screen.

Silencing alarms

When the system sounds an alarm, you may silence it using the [Silence Alarm] softkey on the Logon/Status screen. When this softkey is pressed, the softkeys displayed in Figure 5-4 are displayed.

Figure 5-4
Alarm softkeys (CPE Logon/Status screen)



An alarm will sound if the corresponding severity level SEER is issued indicating that a problem exists. By using the appropriate softkey you can silence critical, major, or minor alarms. The [Cancel] softkey causes the original set of softkeys to be displayed without silencing any alarms. Try to clear the problem as well or the alarm could be turned on again if you simply silence it. Alarms persist until you silence them. (There is no timeout period after which they are turned off by the system.)

Checking the DSP port status

Like the system status, the DSP port status can be viewed from one of two places: the logon screen and the System Status and Maintenance Menu. The DSP Port Status screen (shown in Figure 5-5) is displayed when you press the [DSP Port Status] softkey on the Logon/Status screen. It displays all of the nodes that have DSP ports and the status of each port. This screen is read-only. It is dynamically updated as the status of your DSP ports change. If you suspect that one of your ports is not functioning properly, check this screen. To enable or disable a DSP port or perform out of service diagnostics, you must access the Card and/or DSP Port Status screen from the System Status and Maintenance Menu. See "Card Status" and "DSP Port Status" in the "System status and maintenance" chapter.

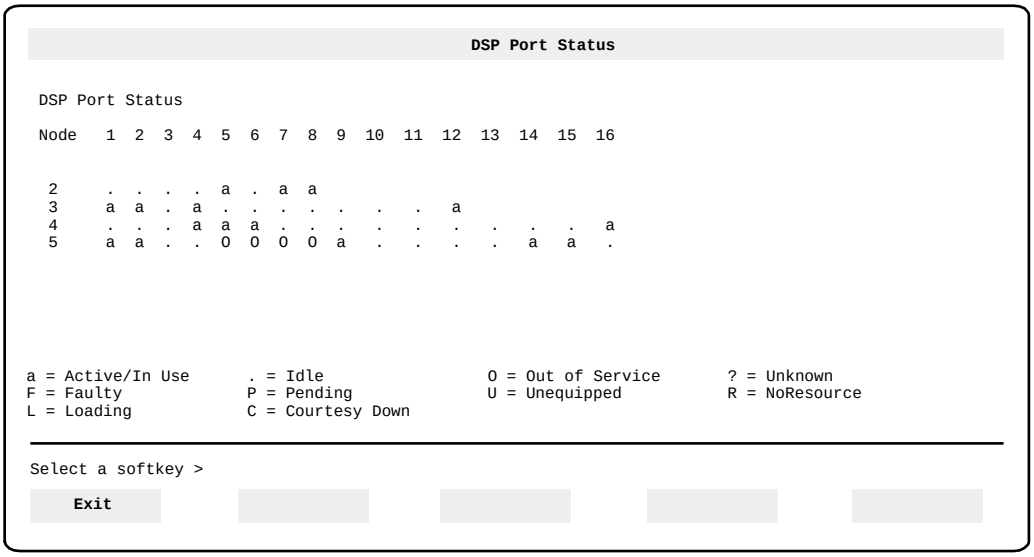
Table 5-1 shows the maximum number of DSP ports available on hardware platforms with an MMP40 upgrade. There are 96 ports available on the EC system. All other systems with MMP40 have a maximum of 64 ports.

The example shown in Figure 5-5 illustrates the status for each DSP port in a five-node system with varying numbers of ports per node.

Table 5-1
Number of ports available on EC and Modular Option platforms *with* the MMP40 card

Hardware platform	Total number of nodes	Maximum number of DSP ports on primary node	Maximum number of DSP ports on secondary node(s)
Modular Option GP	3 to 5	None	16
	single	12	n/a
	2	8	16

Figure 5-5
The DSP Port Status screen



For each node on the system, the status of the DSP ports is displayed. A DSP port may be in one of the following states.

- ***Active/In Use*** This state indicates that the DSP port is operational and in use.
- ***Idle*** This state indicates that the DSP port is operational but not currently in use.

- ***OutOfService*** This state indicates that the DSP port is no longer operational, as a result of a courtesy disable or forced disable.
- ***Unknown*** This state indicates that the status of the DSP port is unknown.
- ***Faulty*** This state indicates that the system has detected an error in the DSP port.
- ***Pending*** This state indicates that the DSP port is in the process of shutting down after a request to disable.
- ***Unequipped*** This state indicates that the DSP port is not defined in the hardware database. For more information about modifying the hardware database, see *System Administration Tools* (NTP 555-7001-305).
- ***NoResource*** This state indicates a transition state that occurs during the initial stages of software loading (after a request to enable a port). When software begins to load, the port is initially in this state, followed by Loading and finally, once the software has finished loading, Idle.
- ***Loading*** This state indicates that the DSP port is currently starting up after a request to enable and that the necessary software is loading.
- ***CourtesyDown*** This state indicates that the DSP port is down as a result of a Courtesy Down System.

Procedure 5-2
Viewing the DSP Port Status screen

Starting point: The Logon/Status screen

1. Press the [DSP Port Status] softkey to view the status of the system's DSP ports.
2. Use [Exit] to return to the Logon/Status screen.

Logging on

When you press the [Logon] softkey, you are prompted for a password. If you are logging on for the first time, use the default password **adminpwd**. When you log on for the first time with the default password, the system prompts you for a new password. The system does not allow you to log on until you have changed the default password.

Passwords can be between 1 and 16 characters in length. However, it is recommended that the password be no less that 7 characters in length for added system security. The longer the password, the less probable it is that someone will manage to guess it correctly.

You should continue to change the logon password on a regular basis to ensure the security of your system. In the future, you will change the password from the General Administration menu.

ATTENTION

If you have forgotten your password, you will have to reboot the system from the install tape. When the system boots from the tape, an item is presented which allows you to reset the password to the original default. Once this has been done, the install tape can be removed from the tape drive and the system can be rebooted from the disk. Once the system is up, use the default password to log on. You will be prompted to change it immediately. Use a memorable yet non-obvious password.

Procedure 5-3
Logging on as the system administrator

Starting point: The Logon/Status screen

1 Press [Logon]. Enter the system administrator password and press <Return>.

If the system has been down due to a power outage or some other problem, the system prompts you to enter the date and time.

2 Enter the date and time in the format indicated, with leading zeroes, slashes, and colon (for example, 31/01/89 09:35).

If an invalid password is entered, an error message appears. T ry logging on again.

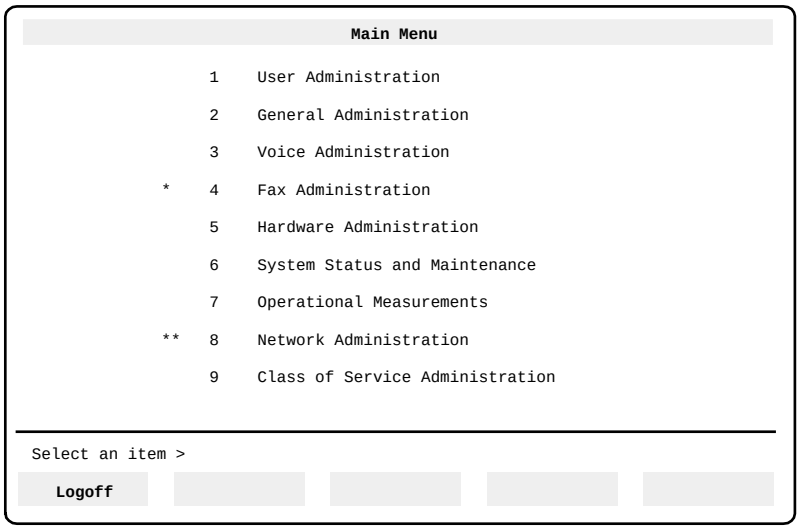
Note 1: An unsuccessful logon attempt is automatically recorded in the system log file. As a security precaution, after a third unsuccessful attempt to log on, the system forces a ten minute delay before a further logon attempt will be accepted. Only your Northern Telecom representative has the required privileges to gain access to the system during the lockout period.

Note 2**:** If you are logging in for the first time, you will be prompted to change the default password. To do so, enter a new password and press <Return>. You are prompted to reenter the password for

verification. Enter the password again and press <Return>. If you entered the password incorrectly the second time, you will have to enter the password again.

If a valid password is entered, the Main Menu is displayed (Figure 5-6). From the Main Menu you will specify the specific administrative task you want to perform, such as adding users and configuring their mailboxes, configuring voice services, and backing up your system, checking your hardware configuration,reading operational measurement reports.performing system maintenance. The various administrative tasks are described throughout the rest of this guide.

Figure 5-6
The Main Menu



* This item is displayed only if Fax on Demand is installed.
** This item is displayed if at least one of the following is installed:
Meridian Networking or AMIS Networking.

3 Select an item from the Main Menu.

To select an item from a menu, enter the number corresponding to the menu item and press <Return>.

Logging on at a multiple-administration terminal (MAT)

If the Multiple Administration Terminal (MAT) feature is installed, your Meridian Mail system can support up to four administration terminals (one main administration terminal and up to three MATs). When logged on to a secondary terminal, you can perform a limited number of administrative tasks: User Administration, Voice Services Administration and Class of Service Administration (available as a series of read-only screens).

The logon password is the same for all terminals (the main administration terminal and all MATs). The default password is **adminpwd**. You can only change the administrator password at the main administration terminal. The change is automatically made to the configured MATs.

If you log on to a secondary terminal with the default password, you will be prompted to enter a new password immediately. (The system will not allow you to log on until you have changed the default password.)

When you log on successfully, the Main Menu is immediately displayed (see Figure 5-7). Note that this is different than the Main Menu that is displayed when you log on to the main administration terminal (Figure 5-6).

For more information, see the chapter "Configure MATs" in *System Administration Tools* (NTP 555-7001-305).

Procedure 5-4
Logging on to a MAT

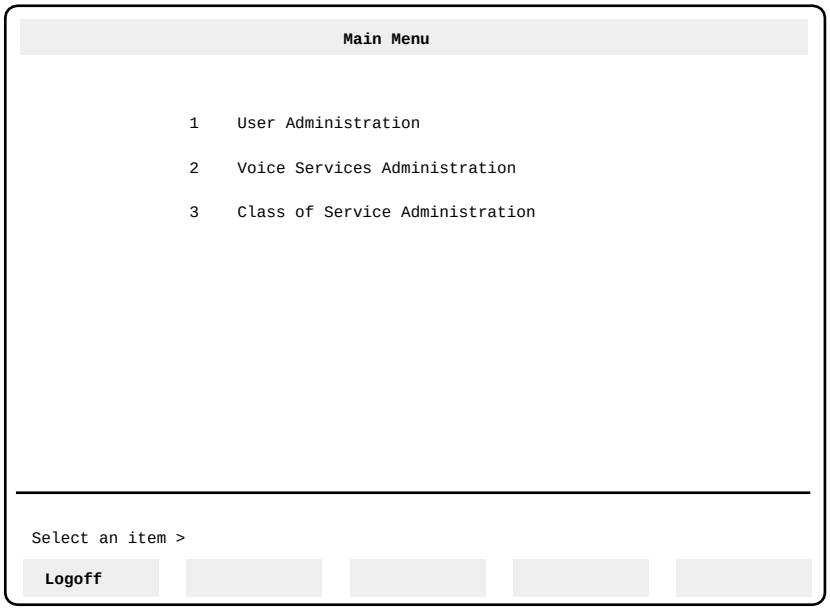
Starting point: The Logon/Status screen

1. Press the [Logon] softkey.
2. Enter the system administration password and press <Return>.

   If an invalid password is entered, an error message appears. T ry logging on again.

   If the password is valid, the Main Menu is displayed.

Figure 5-7
The Main Menu at a multiple administration terminal (MAT)



3 Select an item from the menu.

Select <1> to perform User Administration. See the "User administration" chapter for more information.

Select <2> to perform Voice Services Administration. See the "Voice administration" chapter for more information.

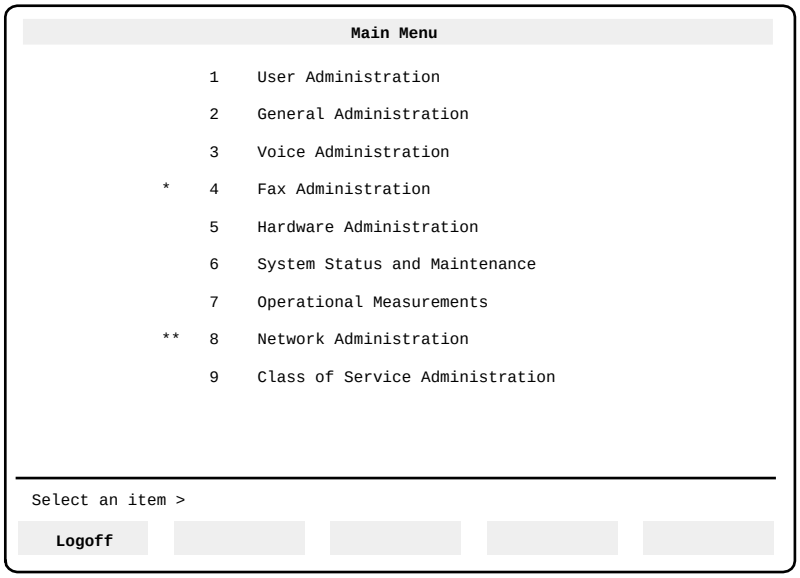
Select <3> to view the existing Classes of Service. (Class of Service screens are read-only from a MAT.) See the "Class of service administration" chapter for more information.

The Main Menu

The Main Menu (Figure 5-8) is displayed after a successful logon from the main administration terminal. This menu is a routing menu from which you can select the type of administrative function you require.

> ***Note:*** For security and memory usage reasons, do not leave the administrative console unattended while you are logged on. Also, remember to log out at night. If you do not log out, critical audit and backup routines may not be able to run due to insufficient memory.

Figure 5-8
The Main Menu



* This item is displayed only if Fax on Demand is installed.
** This item is displayed if at least one of the following is installed: Meridian Networking or AMIS Networking.

Procedure 5-5
Using the Main Menu

Starting Point: The Main Menu

1 Choose an item by entering its number and pressing <Return>.

The appropriate menu appears.

2 Carry out the required administrative functions, then return to the Main Menu; repeat step 1 to carry out additional administrative tasks, or proceed to step 3.

3 Use [Exit].

The Logon/Status screen is redisplayed.

Resetting the system time

It is possible that the system time may be undefined. This may happen when a time signal is not provided by the switch to which Meridian Mail is connected or when a time signal is provided but the link to the switch is temporarily down. In both cases, the system automatically prompts you for the correct time. You cannot proceed with administrative functions unless the system date and time are defined.

You may be required to enter the time at the Logon/Status screen, under unusual circumstances such as power outages. At other times, you can perform optional system time changes as desired. See "Changing the system time" in the "General administration" chapter.

CAUTION
Risk of losing messages
If you set the time ahead by a number of days (if for example, the current time is incorrect or you are testing time-of-day controllers), all read messages that meet the *Read Message Retention Value* (set in the Add Class of Service screen) will be deleted. For example, today is December 9th and the read message retention limit is 7 days. You set the time ahead by 72 hours. Any messages that are 4, 5 or 6 days old will be deleted before they are supposed to be according to the read message retention maximum.

Procedure 5-6
Resetting the system time

Starting point: The Logon/Status screen, system time incorrect or undefined after logon

1 You are prompted for the correct time. Enter the date and time in the format indicated, with leading zeroes, slashes, and colon (for example, 31/01/89 09:35).

The Main Menu is displayed.

2 Use [Cancel] if you choose not to set the system time.

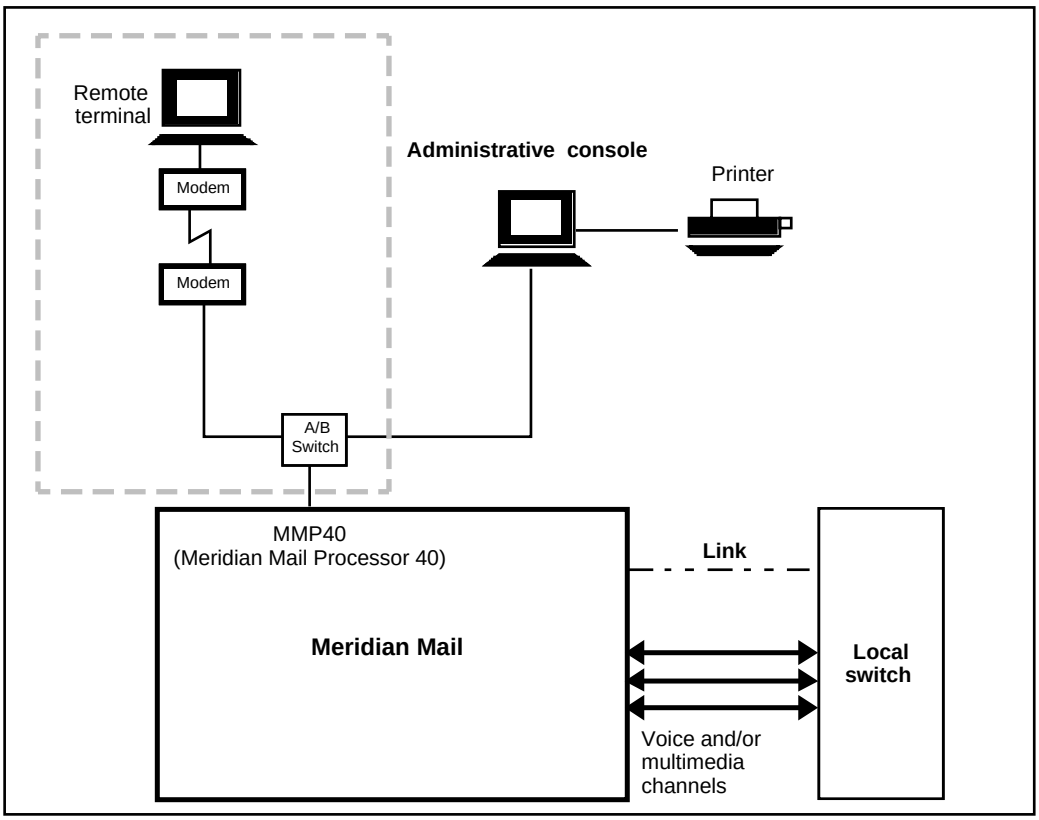
The password prompt is redisplayed.

You may wish to investigate the source of the time discrepancy; see Meridian Mail Installation and Maintenance Guide (NTP 555-7031-250).

Using a remote terminal

If your installation has a remote terminal installed for service personnel, as shown in Figure 5-9 you can perform administrative functions remotely. While a remote logon is in effect, no administrative functions can be carried out from the local console. You should coordinate a remote logon with the local administrator.

Figure 5-9
A typical remote administration configuration



Procedure 5-7
Logging on to a remote terminal

Starting point: The Logon/Status screen, at the local administration console

1. Change the A/B switch setting to remote.
2. Notify the user at the remote terminal. The user at the remote terminal should do the following:
   a. Dial into the modem.
   b. Press **Ctrl-r** (while holding down the <Ctrl> key, press <r>) to display the logon screen.
   c. Enter the administrative password.
   d. Carry out administrative tasks as required, then log off.

   The Logon/Status screen appears at the remote console.
3. At the local site, change the A/B switch back to the local setting.

   Control is returned to the local console, and the Logon/Status screen is redisplayed.

On-line help

As described earlier in the chapter "An overview of administration," on-line help is available for most of the menus and screens, including the Main Menu. The <Help> key on the keyboard can be used to display information on whatever screen you are working in. If you require help with a screen, press the <Help> key. The system will display explanations of all the fields on the menu or screen you are working in. When you are done, use the [Exit] softkey on the Help screen to return to the screen you are working in.

Chapter 6: Making recordings

As administrator you (or selected delegates) will be required to make a variety of voice recordings. These include call answering greetings, personal verifications, verifications for Meridian Mail network sites, broadcast messages, announcements and prompts for voice menus.

Guidelines for making voice recordings

Prompts used solely for administrative purposes can be recorded without much preparation other than deciding on the exact wording of the prompt. For Voice Menus or Announcements played to the public or other users, more formal preparation may be necessary. See the *Voice Menus Application Guide* (NTP 555-7001-325) for details. The following is a list of guidelines you may wish to use when recording prompts:

- Use a voice that is similar to the Meridian Mail prompts and consider using only one voice to avoid distracting callers by changes in pitch, tone, intonation, or accent.

  Select the person who will read the text and print complete, definitive copies of the script. Audition a few candidates by recording their voices, and then listening to the recordings over the telephone line. Low-pitched voices are reproduced over telephone lines better than high-pitched ones.

- Record in quiet surroundings.

  Start recording immediately after the tone and stop the recording immediately after the last word. This prevents unnecessary pauses when system prompts and personal verifications are joined together.

- Do not hang up the phone while recording as this may produce clicks in the recording. Instead press # to stop recording.

- For applications that provide current information, have the person who knows the information monitor the prompts to ensure that the information is always up-to-date.
- When recording a personal verification for two or more people who have the same name (or very similar names), provide more information (their extension number or title, for example) to distinguish them.
- Record a few names for personal verification and listen to them before recording the remaining names.

  This ensures that the procedure is done correctly and the intonation is good. Test each of the following areas where personal verification applies:

  - call answering greeting
  - message envelope playback
  - address playback in the compose command
  - name dialing
  - name addressing

The call answering greeting and personal verifications

These greetings are used for identification purposes. One identifies the system to external callers and the other identifies users during message composition.

The call answering greeting

Note: This greeting does not apply if VMUIF is installed.

This greeting identifies your organization to external callers. The greeting typically consists of the spoken name of the organization. It is played when a user's mailbox is reached through call answering. It is also played by the remote notification service during notification delivery.

This greeting is optional. If recorded, external callers hear this greeting before the user's personal greeting. If you do not record a custom greeting, no call answering greeting is played and callers simply hear the user's personal greeting when they reach a mailbox.

Because this greeting is used in a variety of situations, you will have to consider how to best word this greeting (or decide if you want to record a greeting at all). For example, during remote notification calls, the following prompt is played to MMUI users if no call answering greeting is recorded: *"Hello. Meridian Mail has received a message for ..."*For users belonging to VMUIF systems, the prompt is *"Hello. Call Answering has received a message for ..."*..

When a custom call answering greeting exists, the following prompt is played: *"Hello. <Call Answering Greeting> has received a message for ..."*. If the call answering greeting is something like *"Hello. Thank you for calling Myelin Incorporated"*, the prompt will not sound right when used during remote notification. Consider the following when deciding whether or not to record a call answering greeting.

- If you do not record a call answering greeting, the organization's name will not be announced at the beginning of a call answering session.

  When an external caller is connected to a user's mailbox, the caller will only hear the user's external greeting (or internal greeting, if an internal but not external greeting is recorded). If you feel that the user's personal greeting is sufficient, you may regard this greeting as unnecessary.

- If you record just the organization's name (*"The Myelin Corporation"*), the greeting that is played during call answering may sound too abrupt.

  However, the prompt that is played during remote notification will sound quite natural.

- A friendlier greeting (*"Thank you for calling The Myelin Corporation"*), is ideal for call answering scenarios, yet results in an awkward sounding prompt for remote notification.

The personal verification

The personal verification is a recording of a user's first and last names (and extension, if desired). It is used to identify the owner of a mailbox. If no verification is recorded, the system plays a recording of the user's extension number. Since it is easier to determine if you have reached the correct person by hearing their name than hearing their extension number, it is highly recommended that a personal verification be recorded for all users with mailboxes.

The personal verification can be recorded by you (the administrator) as you add each user to the system, or by the users themselves. Users can change their own personal verifications only if this capability is enabled in the class of service to which the user is assigned. See the chapter "Class of service administration" for more information. The field is called *Personal Verification Changeable by User* and is disabled by default.

The procedure for recording personal verifications at the administration terminal is described in the "User administration" chapter. However, it is ideal to have users record their own personal verifications because the user's own voice is likely to be more recognizable to callers. The user's procedure for recording a name for personal verification is covered in the *Meridian Mail Voice Messaging User Guide*. If you prefer your users to record their own personal verifications, ensure that they are informed of this feature and that they are instructed in the procedure.

Personal verifications are played in the following situations:

- During message composition, the personal verification is played after the mailbox number is entered to verify that the correct person is being addressed.
- Messages delivered to non-users (using the Delivery to Non-Users feature) include the personal verification.

  The recipient is more likely to listen to the message if they recognize who the message is from.
- When a user is called using the name dialing feature, the personal verification is played instead of spelling out the name to the caller.
- During remote notification the system will play the verification to identify for whom the message is intended.

Procedure 6-1
Recording call answering greetings and personal verifications

1 Log on to a Meridian Mail mailbox with administrator capabilities.

2 Follow step 2a to record a call answering greeting or 2b to record a personal verification.

a. To record a call answering greeting, press **829** on the telephone keypad.

b. To record a personal verification for a user, press **89**, enter the user's mailbox number and then press #.

3 Choose step 3a to replace an existing call answering greeting or personal verification, or 3b to add a new greeting or verification.

   a. Press **76** to delete the old greeting. Proceed to step 3b.

   b. Press **5** to start recording.

      If a previous recording exists, the recording you are about to make will be appended to the existing message.

4 Wait for the tone and say the custom call answering greeting or personal verification (name of user).

5 Press # to stop recording. (Do not hang up the phone during recording as this may produce a click sound.)

6 To check the recording, press **2** (play).

7 When recording is finished, press **83** to end the voice messaging session, and then hang up.

   Note: Both the call answering greeting and personal verifications can be recorded from the administration terminal (with a telephone nearby).

Broadcast messages

There may be times when you will need to send a message to all Meridian Mail users. A message that is sent to all users is known as a *broadcast message.* A special mailbox number (the broadcast mailbox number) is defined in the Voice Messaging Options screen. (See the chapter "Voice administration".) When composing a broadcast message, you simply specify the broadcast mailbox number and all users in the system will receive it. Note that any user who knows the broadcast mailbox number and has access to a mailbox with broadcast capability can also compose and send broadcast messages.

> ***Note:*** It is recommended that you refrain from sending broadcast messages during busy hours.

It is a good idea to record a personal verification for the broadcast mailbox (before you record and send any broadcast messages as described in Procedure 6-2). This verification is played to users when they receive the message. You can either identify who the message is from (such as the system administrator) or that the message is a broadcast message so that each recipient knows that all users have received the message. This verification is recorded from the Voice Messaging Options screen using the [Voice] softkey. See the section "Voice messaging options" in the "Voice administration" chapter for details.

Procedure 6-2
Recording and sending broadcast messages

Note: *Ensure that a personal verification has been recorded for the broadcast mailbox in the V oice Messaging Options screen.*

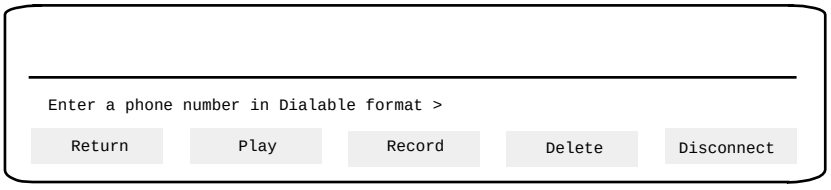
1. Log on to a Meridian Mail mailbox with broadcast capability.
2. Press **75**, enter the broadcast mailbox number (the default is 999), and press **#**.
3. Press # again to end the list.
4. Press **5** to start recording.
5. Wait for the tone and say the message to be broadcast.
6. Press # to stop recording.
7. To check the recording, press **2** (play).
8. To send the broadcast message, press **79**.
9. When recording is finished, press **83** to end the voice messaging session, and then hang up.

Making recordings using the [Voice] softkey

The [Voice] softkey is displayed on some administration screens. It can be used to record personal verifications and prompts for voice menu applications and voice forms. If the environment around your terminal is noisy, you may prefer to use a phone that is in a quieter location to dial into the Voice Prompt Maintenance Service to record voice menu prompts, or to record the call answering greeting or personal verifications. When the [Voice] softkey is pressed, the softkeys in Figure 6-1 are displayed.

Note: A telephone set is required to make recordings. Ensure that a phone set is available near the administration terminal where you are working.

Figure 6-1
Recording softkeys



Procedure 6-3
Using the recording softkeys

Starting point: Voice softkeys displayed

1 Press the [Voice] softkey.

The current screen remains displayed; the softkey display changes to [Cancel].

You are prompted to enter a phone number in dialable format.

2 Enter the extension number of the phone set you are going to use to make the recording.

The phone will ring when you finish entering the extension and press <Return>.

3 Pick up the telephone handset.

The recording softkeys are displayed. See Figure 6-1.

4 To make a new recording, go to step 4a. To listen to the existing recording, go to step 4b. To delete the existing recording, go to step 4c.

a. Press the [Record] softkey. At the sound of the beep, begin speaking into the handset.

See Procedure 6-5 for more details.

b. Press the [Play] softkey.

See Procedure 6-4 for more details.

c. Press the [Delete] softkey.

See Procedure 6-6 for more details.

5 When you are satisfied with the recording and want to disconnect the call through the softkeys, use step 5a. To disconnect by hanging up, go to step 5b. To return to the original softkeys without disconnecting the extension, go to step 5c.

a. Use the [Disconnect] softkey.

The line is disconnected and the original softkeys are displayed. If you press [Voice] to access the recording softkeys again, you will have to reenter the telephone extension.

b. Place the receiver on hook.

The call is terminated and [Return] appears.

Use [Return] to return to the current screen with its original softkeys.

c. Use the [Return] softkey.

The line is not disconnected (unless you hang up the receiver). The original softkeys are displayed. This means that if you decide to rerecord or listen to the recording, you do not have to reenter the telephone extension after pressing the [V oice] softkey.

6 Press [Save] to save the recording.

Playing a recording

The voice recording can be played using the [Play] softkey.

Procedure 6-4
Playing a voice recording

Starting point: Voice softkeys displayed

1 Use [Voice].

2 Use [Play].

If there is no current recording, a message is displayed on the console.

If a recording is available, it is played, and the [Stop] softkey is displayed;

3 Use [Stop] at any time to stop the playback.

The Voice Recording softkeys are redisplayed.

Recording a new message

The voice recording can be recorded using the [Record] softkey. This overwrites any existing recording.

Procedure 6-5
Recording a voice recording

Starting point: Voice softkeys displayed

1 Use [Record].

A message is displayed on the console requesting you to make the recording, and a beep can be heard in the telephone receiver .

The [Stop] softkey is displayed.

2 Say the text of the recording and use [Stop] when you are done.

The Voice Recording softkeys are redisplayed.

The recording will be stopped automatically if you exceed the Maximum Prompt Size or the Record T imeout set in the V oice Service Profile screen.

If a recording existed before, it is overwritten.

Deleting a recording

The recording can be deleted using the [Delete] softkey.

Procedure 6-6
Deleting a voice recording

Starting point: Voice softkeys displayed

1 Use [Delete].

A message is displayed on the console requesting you to confirm the deletion; the softkeys [OK to Delete] and [Cancel] are displayed.

2 Choose 2a to delete the recording, or 2b to cancel.

a. Use [OK to Delete].

The recording is deleted.

The Voice Recording softkeys are redisplayed.

b. Use [Cancel].

The Voice Recording softkeys are redisplayed; the recording is not deleted.

Chapter 7: User administration

User administration primarily involves adding users to the system, maintaining them and deleting them when necessary. The creation and maintenance of system distribution lists is also part of user administration.

CAUTION
Risk of loss of service if user administration is performed during a nightly DR audit
At 3:30 a.m. every day, an audit of the DR directory is performed. Do not perform any user administration (adding, modifying, or deleting users) during this audit. Depending on how unbalanced the system is, this audit can take anywhere from 10 minutes (if the system has not been modified since the last audit) to 2 hours (if there have been many changes, such as a lot of users being added).

Categories of users

User administration primarily involves adding users to the system, and once added, maintaining the existing users. When you add a new user to the system, you must specify the user type. There are three categories of users as described:

- Local Voice Users

  Local voice users have extensions on the local switch. Each local voice user has a mailbox with call answering capability. This means that if the user is away from his or her phone (or on the phone), callers are connected to their personal mailbox in which they can leave a voice message.

  Local voice users belonging to MMUI customer groups also have access to voice messaging functions (in other words, they can compose and send messages to other users and non-users). Local voice users belonging to VMUIF customer groups tend not to have compose and send capabilities (although compose capability can be enabled). Instead, they typically have access to a simplified call answering interface only.

- Remote Voice Users

  Remote voice users are users on other Meridian Mail systems who have access to your system through the Meridian Networking service. Meridian Networking is an optional feature that is only compatible with the MMUI interface.

  Not all voice users at remote sites need to be added to your system as remote voice users. You should only consider adding users who correspond frequently with users at the local site or if it is important that they can be included in your system distribution lists or users' personal distribution lists. By adding a user at a remote site to your local database network, certain extra features become available. For a list of the benefits of adding users as remote voice users, see the section "Adding remote voice users" on page 7-29.

  Meridian Networking is documented in the *Networking Services Administration Guide* (NTP 555-7001-335).

- Directory Entry Users

Directory entry users can only be added to the system if MMUI is installed. Directory entry users are registered in the Meridian Mail directory but they do not have mailboxes. As a result, they do not have access to voice messaging functions. They can, however, be referenced by such features as name dialing and automated attendant functions such as Voice Menus (if these are installed on your system).

The User Administration screens

The User Administration screens provide the necessary facilities to add, modify and delete directory entry users, local voice users and remote voice users.

The Find facility simplifies the process of locating existing users for the purpose of modifying or deleting them. You can retrieve a particular user or a subset of users using various search criteria such as first or last name, department (MMUI only), or personal verification status (to find all users without recorded personal verifications).

Note: User Administration can be performed from a secondary administration terminal if the Multiple Administration Terminals (MAT) feature is installed. If more than one administrator accesses a user or system distribution list at the same time, the administrator who first gained access to the user or list is the only one who can modify the information. The information displayed on the other terminals will be read-only and instead of the [Save] and [Cancel] softkeys, only the [Exit] softkey will be displayed.

Planning to add new users to the system

When you add a local voice user to the system, the user-specific parameters are based on the Class of Service (COS) to which he or she is assigned. Classes of service act as templates to simplify the process of adding new local voice users to the system and provide a way of changing a parameter (such as enabling/disabling a feature, changing a maximum limit) for a group of local voice users (all of the users who belong to a class of service). Up to 15 classes of service can be defined.

Personal classes of service can be created to meet the needs of a local voice user who does not fit into any of the existing classes of service. This is described in more detail in the section "Adding local voice users." Classes of service are described in the chapter "Class of service administration."

Before you begin to add any local voice users to the system, you should do some planning first. Ask yourself the following questions:

1 What types of local voice users will you be servicing? Identify the classes of service that you will need to meet their needs.

2 The system automatically distributes local voice users over volumes so that a new local voice user is added to the volume that is least full.

However, you may want to consider some other strategy for assigning local voice users to volumes.

3 If you have disk shadowing on some nodes but not others, which local voice users should be put on the shadowed nodes?

4 If you are adding large numbers of users in a short time period (in a 24-hour period), there are special considerations as described in the section "Adding large numbers of users."

Distributing local voice users over volumes

Meridian Mail systems can have from one to five nodes, each of which contains a hard disk drive for data storage. The hard disk drives are partitioned into volumes. Volumes are storage areas for system and user related information. The volumes are already set up when your system is installed.

The system automatically distributes local voice users over volumes. Whenever you press the [Add] softkey, the volume to which the local voice user is added defaults to the volume with the greatest amount of free voice space. This ensures that certain volumes do not fill up while others remain empty.

Even though this guarantees a fairly random process, you should be careful that you do not assign too many local voice users who use the system a lot to the same volume. Putting certain types of local voice users who share the same usage pattern (especially those who use the system heavily) on the same volume increases the probability that too many channels will try to access the same disk at one time. For example, all secretaries are added to the same volume (volume 203). They all come in at 9:00 a.m. and log on immediately. Suddenly a large number of channels are trying to access the disk. This situation is not desirable. It is therefore recommended that you distribute local voice users across volumes randomly in such a manner that does not result in correlations in access patterns among the users on a volume.

Before adding local voice users to the system, survey your users to estimate average usage in terms of number of messages and length of each message. Compare this with the capacity of the available disk volumes and the minutes of storage you wish to assign to local voice users and then, estimate the number of local voice users each volume can accommodate. Randomly assign local voice users on different disks to distribute traffic evenly to the disk drives. Ideally, each user volume should have an equal number of local voice users. For example, to randomly select local voice users, choose the volume based on the first letter of the local voice user's surname.

Information on disk usage can be obtained through the Disk Usage report. (See "Traffic reports" in the chapter "Operational measurements") A listing of disk volumes can be obtained by displaying the Volume Administration screen (see Figure 8-NO TAG in the "General administration" chapter). For information about volume names and how information is distributed on the volumes, see "Volume numbers and distribution" in the "General administration" chapter.

If a volume becomes full and you need to move local voice users to another volume, existing local voice users can be moved from one user volume to another using the Move User utility available under the Tools menu. To move a local voice user you must know the local voice user's mailbox number. For more information, see *System Administration Tools* (NTP 555-7001-305).

Disk shadowing

Disk shadowing is an optional feature which provides protection against data loss in the event of disk failure. This feature works by writing new information to two disks at the same time. If one disk fails, it is taken out of service without service interruption. Disks are shadowed on a node-by-node basis. Before adding local voice users, find out which nodes are shadowed and which are unshadowed. It is recommended that you put more important mailboxes (such as those of high-level executives) on the shadowed nodes. Local voice users whose messages may not be as critical can be placed on nonshadowed nodes. Should a shadowed disk fail, very important messages will not be lost since they will be on the second disk of the shadowed pair.

Adding large numbers of users

It is not recommended that you add a large number of users (600 or more) in a short period of time. (A short period of time here means a 24-hour period between two nightly audits. These audits take place between 2:30 a.m. and 5:00 a.m.). When you add such a large number of users, the organization directory which stores user information, can become unbalanced and perform less efficiently.

If you must add a large number of users between audits, consider the following factors:

1 Ensure that the number of local voice users to be added is within the engineering guidelines for the system.

Specifically, Meridian Mail is engineered for up to 3 000 local voice users per voice node.

2 The type of user affects system load. Residential users place less of a load on the system than private users.

If this is a residential system, you can add users in any order. When adding users to a private (business) system, add users in *reverse alphabetical order*. Otherwise performance will gradually degrade after approximately 600 users have been added. This degradation in performance will be corrected when the next nightly audit occurs.

3 Distribute local voice users across volumes as evenly as possible.

See the section "Distributing local voice users over volumes" on page 7-4.

4 Do not add more than 2000 users to the same exchange.

Otherwise, the system will become unbalanced. The next nightly audit will rebalance the system. For example, if the exchanges 763, 766 and 769 exist on your switch, do not add more than 2000 users to any of them within a 24-hour period.

If you notice that the system is slowing down as you add users, you should stop. You can then force an audit from the tools level, using the Rebalance directory tool. (This tool is documented in the *System Administration Tools Guide*, NTP 555-7001-305). However, you should not perform this audit during busy traffic times. Furthermore, during the audit, you will not be able to make any more updates from the administration terminal.

Converting from prior releases

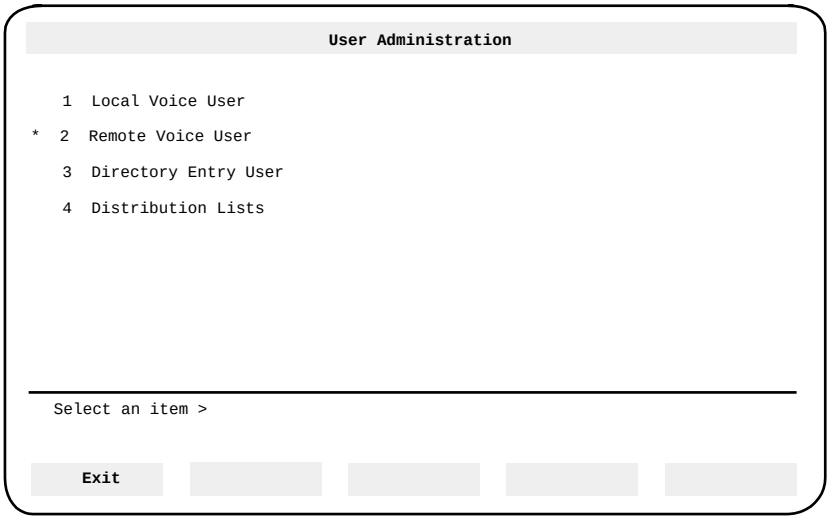
When you convert to Meridian Mail release 9 from a prior release, all existing local voice users are assigned to a personal class of service. This means that each local voice user has a "unique" class of service which is not connected to any of the system classes of service. Therefore, local voice users must be reassigned to system classes of service after a conversion.

There is a class of service conversion utility ("COS conversion") that is documented in the *System Administration Tools Guide* (NTP 555-7001-305). It checks each local voice user's personal class of service and if it matches an existing system class of service, the local voice user is assigned to that class of service. Local voice user mailboxes that do not match a system class of service remain with personal COSs. You can use this utility to view these unassigned mailboxes and then use the utility to either create a system class of service based on the personal COS or assign the unassigned mailbox to a defined system class of service.

The User Administration menu

When User Administration is selected from the Main Menu, the User Administration menu (Figure 7-1) is displayed. From this menu, you can add, modify or delete local voice users, directory entry users, remote voice users (if Meridian Networking is installed), or distribution lists.

Figure 7-1
The User Administration menu



* This item appears only if Meridian Networking is installed.

Procedure 7-1
Using the User Administration menu

Starting point: The Main Menu

1 Select User Administration.

The User Administration menu appears (Figure 7-1).

2 Choose an item by entering its number and pressing <Return>.

a. Select Local Voice User if you want to add, modify or delete a local voice user.

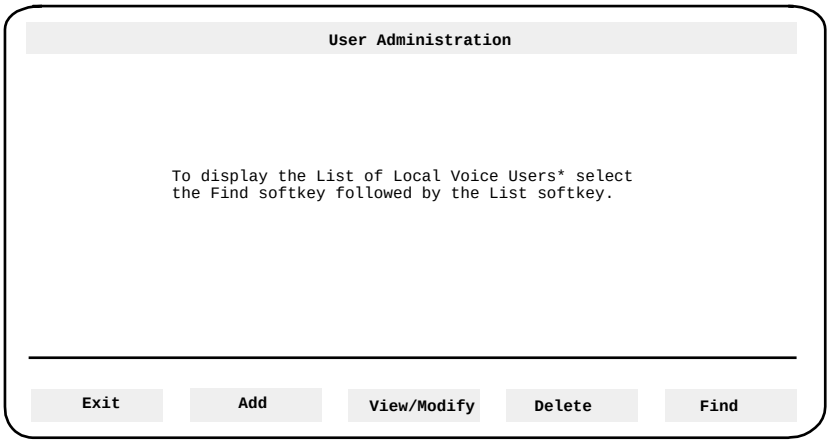
b. Select Remote Voice User if you want to add, modify or delete a remote voice user.

c. Select Directory Entry User if you want to add, modify or delete a directory entry user.

d. Select Distribution Lists if you want to add a new distribution list, or modify or delete an existing list.

The following screen is displayed when you select one of the options described in the previous step:

Figure 7-2
The User Administration softkeys



* This statement will vary depending on the menu item you selected. Instead of Local Voice Users, it may say Directory Entry Users, Remote Voice Users, or Distribution Lists.

3 Select a softkey.

a. Press [Exit] to return to the User Administration Menu.

b. Press [Add] to add a user or distribution list.

c. Press [View/Modify] to view or modify an existing user or distribution list.

d. Press [Delete] to delete an existing user or distribution list.

e. Press [Find] to find a particular user/distribution list or to find a subset of users/distribution lists from which you can then retrieve a specific user or list.

Adding local voice users

Most of the users that you add to the system will be local voice users.

In business environments, people that are not in the office much (such as salespeople) may not have their own telephone set. You still can, however,

configure a mailbox for these people so that they can collect and listen to messages. All that you need is an available DN on the switch that is not associated with a physical telephone set.

Before adding local voice users, you should

1 Determine the capacity of your disk volumes.

2 Survey users to determine the types of classes of service that will be necessary and to estimate the average system usage of each class of user.

3 Create classes of service to reflect the results of your survey.

User passwords

Each MMUI local voice user must have a password. When you add a new local voice user, the system assigns a default password (the user's mailbox number). This password can be changed by the administrator or by the user at the telephone set (the procedure for the administrator is described in Procedure 7-4 on page 7-24).

VMUIF local voice users are not initially assigned a password by the system. This means that subscribers can only log on to their mailboxes from their "home phone". (A password is required to log on to a mailbox from a phone other than a user's own phone.) If the local voice user belongs to a class of service for which remote notification is enabled, a password is necessary so that the user can call from a phone other than the home phone in order to listen to messages. In fact, if the local voice user wants to be able to log on to his or her mailbox from any phone (not just the home phone), a password will be necessary. You can create a password at the administration terminal using the [Change User Password] softkey in the Add (or View/Modify) Local Voice User screen. Alternatively, you can inform users that they will have to create a password using their telephone set in order to use remote notification and to log on to their mailbox from a phone other than the home phone.

You can increase mailbox security for MMUI users through the use of a password prefix. If you define a password prefix, it will be attached to the initial password at the time of mailbox creation. For example, you create a mailbox for a local voice user at extension "3334". The password prefix is "696". The resulting default password will be "6963334". If no prefix is defined, the default password would simply be the user's extension ("3334").

When a local voice user changes his or her password, the password prefix is no longer used. If, for example, the previously described local voice user changed his or her password to "51243", the prefix would not be added and the password would remain as "51243". Furthermore, when you change the password prefix, it will not affect existing mailbox passwords. It will only affect those mailboxes that are created after the change.

This prefix is defined in the Voice Security Options screen.

Table 7-1
Common fields controlled by VMBA

The Add Local Voice User screen

When you press the [Add] softkey, you are prompted to enter the mailbox number of the local voice user. If a valid mailbox number is entered, the Add Local Voice User screen (Figure 7-3) is displayed.

The Add Local Voice User screen is actually made up of three screens which contain:

- Basic fields

  The basic fields are contained in the first screen that is accessed after you press the [Add] softkey. It contains information such as the user's mailbox number, name, COS number, extension DNs, revert DN, and message waiting indication DN.

- Class of service fields

  The class of service fields are contained in the screen that is accessed by placing the cursor on the *Class of Service* field and pressing the [More Detail] softkey. This screen allows you to view (only) the configuration of the COS that is selected (for verification purposes). However, if the "Personal" COS is selected, you can modify the fields to create a custom COS for the user.

- Outcalling fields

  If Outcalling is installed on the system and the *Remote Notification Capability* field is set to "Yes" in the class of service selected for the user, you can create a remote notification schedule for the user from this screen. The outcalling fields are contained in the screen that is accessed by moving the cursor to the *Remote Notification Schedules* field and pressing the [More Detail] softkey.

Procedure 7-2
Accessing the Add Local Voice User screen

Starting point: The Main Menu

1 Select User Administration.

2 Select Local Voice User.

3 Press the [Add] softkey.

You are prompted for a mailbox number .

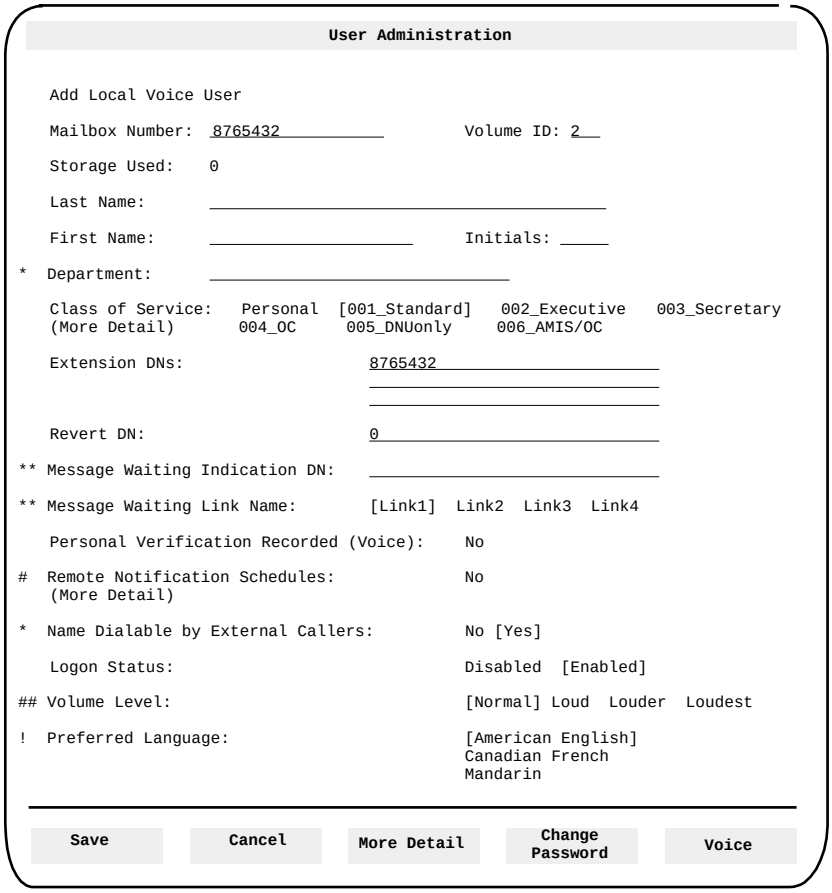
4 Enter the user's mailbox number followed by <Return>.

This number will be used in the Add Local V oice User screen to fill in the Mailbox Number, primary Extension DN and Message W aiting Indication DN fields. In most cases, these three numbers are indeed identical. This number can be up to 18 digits long.

If the system addressing length is defined (in the General Options screen), all mailbox numbers must be of the specified length.

The Add Local Voice User screen is displayed.

Figure 7-3
The Add Local Voice User screen (basic fields)



* These fields are displayed only if MMUI is installed.
** These fields are displayed only if the MWI option is not set to None in the selected COS.
\# This field is displayed only if Outcalling is installed and Remote Notification Capability is set to Yes in the selected COS.
\#\# This field is displayed only if VMUIF is installed.
! This field is displayed only on multilingual systems.

The following fields are displayed:

- ***Mailbox Number*** This field is filled in with the mailbox number you entered to access this screen, although it can be changed from within this screen. This field is mandatory. If it is not filled in, you will not be able to save the local voice user. The mailbox number can be up to 18 digits long and can be in the range 10 to 999999999999999999.

  The mailbox number is generally the user's directory number as configured on the switch and is typically a 7-digit number.

  Mailbox numbers should not conflict with any of the following numbers:

  - the broadcast mailbox number (the default is 999)
  - other DNs
  - the name dialing prefix (the default is 11); see "Voice messaging options" in the "Voice administration" chapter
  - delivery to non-user dialing prefixes
  - system distribution list numbers
  - other mailbox numbers
  - the AMIS compose prefix if AMIS networking is installed (the default is 13)
  - the personal distribution list prefix (VMUIF only)
- ***Volume ID*** This field specifies the hard disk volume to which the local voice user is assigned. The volume ID indicates where messages for the user and related information are to be stored. All local voice users must be assigned to a volume. This field defaults to the volume with the greatest amount of free voice space at the time that the [Add] softkey is pressed.
- ***Storage Used*** This read-only field indicates how many minutes of voice messages are currently stored for the current local voice user. This value is rounded up to the nearest minute. Before deleting a local voice user, check this field to make sure that there are no voice messages in the mailbox. If submailboxes are enabled in this user's COS, all submailbox greetings and messages take up voice storage allocated to the mailbox.

If the MMUI interface is installed, the system still accepts calls when the mailbox is full. However, users experience limited functionality. (For example, users can only listen to messages and delete them. They cannot compose and send messages if their mailbox is full.) If VMUIF is installed, calls are rejected (the system will not take messages) when the mailbox is full.

Note: A user may inform you that he or she has received the mailbox full warning, but that the mailbox is definitely not full. For example, the user is certain that there are only two short messages in the mailbox. A prematurely full mailbox is caused by an unexpected system reboot that leaves inconsistencies between the volume server and what is actually in the mailbox. This problem will be fixed automatically during the scheduled nightly audit. However, if an unexpected reboot happens at a busy traffic time, you can log on at the Tools level and select the menu item "Audit all volumes". This will update the real mailbox storage information that is stored on disk and prevent prematurely full mailboxes. See the *System Administration Tools* guide (NTP 555-7001-305) for more information about this tool.

- ***Last Name*** This is the last name of the new local voice user, up to 41 characters in length. This field accepts any characters with the exception of the restricted characters "+", "_", and "?". However, you should limit yourself to alphanumeric characters. If you use any control characters or special characters, name dialing and name addressing may not work properly. This field is blank by default. Be sure to fill it in and be sure to use correct spelling because the name dialing and name addressing features use this information.

CAUTION
Risk of lost messages
If you must change a user's last name once the mailbox has been added and put in use, do not modify this field. Instead, make sure the user has listened to all of his or her messages, delete the mailbox, and add it again with the new last name. Meridian Mail uses the user's last name to keep track of users, mailboxes, and messages. Modifying the *Last Name* field can cause inconsistencies.

- ***First Name*** This is the first name of the new local voice user. You can enter up to 21 characters in this field. Do not use any special characters. Limit yourself to alphanumeric characters for the reasons mentioned in the *Last Name* field. This field is blank by default. Ensure correct spelling because the Name Dialing and Name Addressing features use this information.

- ***Initials*** This field holds the initials (up to 5 of them) of the local voice user. This field is for display only and can be used to distinguish users with identical first and last names. These initials, however, cannot be used in name dialing.

  Note: If you do not enter any initials, the system will automatically fill in this field with the first initial of the user's first name after you save the user.

- ***Department*** (MMUI only.) You may enter up to 31 characters. The characters "+", "_", and "?" are restricted. It is recommended that you use alphanumeric characters only and avoid using special characters altogether (even though some are accepted by this field) for the reasons described in the *Last Name* field.

  When adding the first user to the system, this field will be blank by default. For subsequent users, this field defaults to the department entered for the last user added.

You can retrieve users on the basis of department when using the Find Local Voice Users function (described later in this chapter). However, only the first 12 characters of the department are displayed in the List of Local Voice Users. Therefore, the first 12 characters of department names should be unique so that you can distinguish departments in this list.

- ***Class of Service (More Detail)*** This field specifies the class of service (COS) to which the user belongs. Up to 15 COSs will be displayed. The COSs that are displayed in this screen depend on the selections made in the General Options screen (see the "General administration" chapter). Only the "Personal" COS will be displayed if you have not yet assigned any COSs to this customer group.

  If you press the [More Detail] softkey while the cursor is on this field, you will see the definition for the selected COS. The fields are read-only and are provided as a reminder to you, so that you can verify the configuration of a COS before selecting one for the user.

  If the "Personal" COS is selected, you will be able to modify the fields and create a custom COS especially for this user. This is useful if the user doesn't fit into any of the existing COSs. However, each personal COS will have to be maintained separately, in addition to the system COSs. See the section "Creating a personal class of service" on page 7-24.

- ***Extension DNs*** The user's extension number or numbers. A user can have up to three extension DNs. (This means that a caller can dial any of these numbers and still reach the user's mailbox.) An extension DN can be up to 30 digits in length.

  The first field is for the primary DN and is mandatory. It should be the same as the mailbox number. It is automatically filled in with the mailbox number you entered to access this screen, but can be changed. You cannot save the user if this field is blank.

  Important: If the mailbox number and primary DN are not the user's 7-digit directory DN, you must enter the 7-digit directory DN as the secondary DN. (If the 7-digit directory DN is the primary DN, the secondary DN is optional.)

  The tertiary DN is optional.

  Note: If the SMDI link is set to 10-digit messaging, the extension DN should include the area code (this is the full 10-digit DN).

- ***Revert DN*** If this field is not blank, the number entered in this field is the number to which calls are passed when:

  - a caller presses "0" during a call answering session
  - when a user waits more than 2 seconds to enter "#" after dialing "0" in order to place a call while in his mailbox (known as mailbox thru-dial or extension dialing).

  The revert DN may be up to 30 digits in length and can begin with 0 (zero). However, keep in mind that this revert DN is limited by the restriction/permission codes that are selected in the user's class of service.

  This field is blank by default. For MMUI users, if this field is left blank, the number entered in the Attendant DN field in the General Options screen will be used as the revert DN for this user. Therefore, when a caller presses "0", he or she will be transferred to the attendant DN (which is typically "0" or the main console). If, however, a user wants his or her callers to be transferred to another person, such as a personal secretary, a revert DN must be configured.

  For VMUIF users, there is no Attendant DN to be configured for the system . Therefore, if no revert DN is defined, callers will not have the opportunity to transfer to another number by pressing "0". For most VMUIF users, this will probably be sufficient. However, if a user does want callers to be able to revert, this DN will have to be defined.

  MMUI users and VMUIF users with defined revert DNs should be encouraged to include a statement in their personal greeting to inform callers that they can press "0" to transfer out of Meridian Mail.

Users can also configure their own revert DN through their telephone set. This is covered in the *Meridian Mail Voice Messaging User Guide.* However, you might want to restrict users from changing their own revert DNs. This can be done by assigning a set of restriction/permission codes (that has the restriction codes filled in with the digits 0 to 9) to the *Custom Revert Restriction/Permission Codes* field in a class of service. This is done in the Add or View/Modify Class of Service screen. (The user must then be assigned to the class of service.) The administrator can still enter a revert DN through user administration and custom revert will work. However, users will not be able to change this DN from a telephone set. See the chapter "Class of service administration" for details about setting up these restriction codes.

- ***Message Waiting Indication DN*** This field is not displayed if the *Message Waiting Indication Options* field in the user's COS is set to "None". If this field is displayed, it is mandatory. This DN specifies the telephone extension at which message waiting indication is activated when a new message is put in the user's mailbox. This field defaults to the mailbox number that was entered to access this screen. This DN must be the user's 7-digit directory number as it is configured on the switch.

  If you try to save your configuration when the primary DN and the MWI DN are different, the system will give you a warning message indicating that these two DNs are different. At this point, you can either press [Save] a second time to continue, or change your mind and make the two DNs identical.

  Note 1: To modify or delete this DN, make sure MWI is turned off first. If the MWI DN is changed when MWI is on, MWI will never be turned off.

  Note 2: If the SMDI link is configured for 10-digit messaging, enter the user's 10-digit directory number (this DN includes the area code).

- ***Message Waiting Link Name*** This field is only displayed if the system has SMDI links and if the *Message Waiting Indication Options* field in the user's COS is set to something other than "None". This name specifies the link on which the message waiting indication is sent for this user.

This field is intended for systems with the Multi-SMDI (indicated as "SMDI" in the General Options screen) feature so that you can distribute users over all available links. If you have only one SMDI link, this field defaults to the link name entered in the hardware database and cannot be changed from this screen.

If you do have multiple SMDI links, do not put all users on the same link. Instead, distribute users (as evenly as possible) across all available links. This field defaults to the first link name defined in the hardware database.

- ***Personal Verification Recorded (Voice***) When a personal verification has been recorded, this field is set to "Yes". "No" indicates that no verification is currently recorded. The verification can either be recorded by the user from his or her phone or by the administrator from this screen. See the chapter "Making recordings" for more information about personal verifications and when they are used.

- ***Remote Notification Schedules (More Detail)*** This field is displayed only if Outcalling is installed and if *Remote Notification Capability* is set to "Yes" in the user's COS.

  "Yes" indicates that remote notification schedules have been set up for this user (either by the administrator or by the user). This field will show "Yes" even if the schedules are disabled (as long as at least one schedule has been created).

  To create a remote notification schedule for a user, press the [More Detail] softkey while the cursor is on this field. See the chapter "Planning outcalling" in the *Outcalling Application Guide* (NTP 555-7001-322) for details.

- ***Name Dialable by External Callers*** (MMUI only.) When this field is set to "Yes", external callers can use name dialing to call the user. This may not be desirable for all users, since a caller could get through to any extension as long as they know the person's name. You may therefore want to set this field to "No" for those users who have their phone calls screened by a secretary. The default is "Yes".

- ***Logon Status*** A mailbox will become disabled if too many logon attempts are made using the wrong password. (The maximum number of invalid logon attempts is set in the Voice Security Options screen.) If the logon status is "Disabled", an explanation is displayed on the line below this field. When the status is "Enabled" the user has full access to the mailbox and messages are accepted. The default is "Enabled".

  the user will not be able to log on to the system, however, messages are still received. To reenable a mailbox, access the user through the View/Modify Local Voice User screen and set the *Logon Status* field to "Enabled".

  If the VMUIF interface is installed, the user will be able to log on, however, the system will no longer take messages (in other words, calls are rejected). This field is affected by the *Lockout Duration* field in the subscriber's class of service. A value other than zero in the *Lockout Duration* field indicates that the subscriber's mailbox will automatically be reenabled once the specified time period has passed (up to 24 hours). A value of "00:00" indicates that the subscriber will be locked out until the administrator reenables the mailbox manually by setting the Logon Status to "Enabled".

- ***Volume Level*** (VMUIF only.) This field controls the volume level for voice messaging. The options are: "Normal", "Loud", "Louder", "Loudest". The default is "Normal". Note that if there are submailboxes, this field affects only the main mailbox.

- ***Preferred Language*** This field applies only to multilingual systems. The language specified in this field determines the language in which prompts are played. (This includes prompts that are played to the user during a login session and to callers during express messaging and call answering sessions.) This field can display a maximum of four of the languages installed on your system. The default is the first language in the list.

  Note: If the *Default Language Overrides User 's Preferred Language* field is set to "Yes" in the Voice Messaging Options screen, prompts played to callers during call answering and express messaging sessions will be in the default language. However, prompts played to the user during login sessions continue to be played in the user's preferred language.

Procedure 7-3
Adding a local voice user

Starting point: The Main Menu

1 Select User Administration.

2 Select Local Voice User.

3 Press the [Add] softkey.

The [Cancel] softkey appears, and you are prompted to enter a mailbox number (up to 18 digits in length).

4 Go to step 4a to proceed, or 4b to cancel.

a. Enter the mailbox number and press <Return>.

The Add Local Voice User screen is displayed (Figure 7-3).

b. Use [Cancel].

The Local Voice User Administration softkeys screen is displayed.

5 Enter the *Last Name, First Name, Initials ,* and *Department* (if applicable) of the new user.

6 Assign the user to a class of service (either to one of the system COSs or create a personal COS if necessary).

a. To view a COS, press the [More Detail] softkey while the cursor is on the *Class of Service* field. Fields in the COS are read-only.

b. To create a personal COS, make sure "Personal" is selected and then press [More Detail]. The fields in the personal COS are modifiable from this screen.

c. Press [Return to Basic Fields] when finished.

See the chapter "Class of service administration" for screen illustrations and field descriptions.

7 Normally the primary extension DN is the same as the user's mailbox number and message waiting indication DN. If required, however, it can be modified. Enter optional secondary and tertiary DNs if necessary.

8 Enter a revert DN if this user wants to revert callers to a number other than the attendant DN (defined in General Options).

9 The message waiting indication DN is typically the same as the primary DN and the mailbox number. This is the default. However, it can be changed to another number if required.

10 If you need to create a personal verification for the user, move the cursor to the *Personal Verification Recorded (Voice)* field and press [Voice]. (This is necessary if the field *Personal Verification Changeable by User* is set to "No" in the COS and the user requires or desires a personal verification.)

a. Enter the extension number of the phone you will be using to record the verification.

b. A new set of softkeys is displayed.

c. Press the [Record] softkey.

d. At the sound of the beep, speak the user's name into the telephone handset.

e. Press the [Stop] softkey to stop recording.

f. If you are satisfied with the recording, press either [Disconnect] or [Return] to display the original softkeys.

When you use [Return], the line is not disconnected (unless you hang up the receiver). This means that if you decide to rerecord or listen to the recording, you do not have to reenter the telephone extension after pressing the [Voice] softkey.

When you use [Disconnect], the line is disconnected and if you press [Voice] to access the recording softkeys again, you will have to reenter the telephone extension.

See the section, "Recording personal verifications using the [Voice] softkey" on page 7-40 for more information about the recording softkeys.

11 If remote notification is enabled in the COS to which the user belongs and you need to create a schedule for the user, put the cursor on the *Remote Notification Schedules* field and press [More Detail]. See the section "Creating a remote notification schedule."

12 For VMUIF users, set the volume to the desired level.

13 On a multilingual system, specify the user's preferred language.

14 For MMUI users, the default password is the same as the user's mailbox number. For VMUIF users, there is no initial password. To change the password, see Procedure 7-4.

15 Go to step 15a to save the new user, or 15b to discard this user.

a. Use [Save].

If the primary extension DN and the message waiting indication DN are different, the system will warn you of this. If you intend these numbers to be different, press [Save] again to save the user . If you have made a mistake, press [Cancel] or modify the MWI DN. The user will not be added and you will have to redefine the user if [Cancel] is pressed.

The system saves the new user and prompts for another local voice user's mailbox number. Go to step 4a to add another user, or to 15b to exit this screen.

b. Use [Cancel].

New user information is discarded. The Local Voice User Administration softkeys screen is displayed.

Procedure 7-4
Changing the user's password

Starting point: The Add Local Voice User screen

1 Press the [Change Password] softkey.

You are prompted to enter the new password.

2 Enter the new password (up to 16 digits in length) and press <Return>.

(The password is not displayed on the screen.)

You are prompted to reenter the password for verification.

3 Reenter the password and press <Return>.

If there is a mismatch between the first and second passwords, return to step 2.

Creating a personal class of service

If a user has special requirements that are not met by any of the existing COSs, you can create a personal COS that is customized for that user. All personal COSs must be maintained individually since any changes made to a personal COS will not affect any other users. If, for example, it is decided that all users will be given access to a particular feature, you would have to modify all existing COSs as well as all personal COSs. To create a personal COS, follow Procedure 7-5.

Procedure 7-5
Creating a personal class of service

Starting point: The Add Local Voice User screen

1 Move the cursor to the *Class of Service* field.

2 Select the Personal COS (the first COS in the list).

3 Press the [More Detail] softkey.

The View/Modify Class of Service screen is displayed. Refer to the "Class of service administration" chapter for screen illustrations and field descriptions.

4 Make the necessary modifications.

5 Press the [Return to Basic Fields] softkey to return to the Add Local Voice User screen.

6 Press [Save] to save the personal class of service and the user.

Creating a remote notification schedule

A remote notification schedule allows you to define the telephone or pager numbers where users can be reached at different times of the business day, as well as nonbusiness days. There are three different schedules associated with each user: one for business days, one for nonbusiness days, and one temporary schedule. The temporary schedule overrides the other two schedules until the time specified. This schedule is useful if a user will be at a different number than usual for a short period.

See the *Outcalling Application Guide* (NTP 555-7001-322) for detailed instructions on setting up remote notification schedules.

Procedure 7-6
Creating a remote notification schedule

Starting point: The Add Local Voice User screen

1 Move the cursor to the *Remote Notification Schedules* field.

2 Press the [More Detail] softkey.

The outcalling fields are displayed. See Figure 7-4.

Figure 7-4
The Add Local Voice User screen (outcalling fields)

```
                          User Administration                    MORE ABOVE

 Add Local Voice User - Outcalling Fields

 Current State of Remote Notification:        Off

 Message Remote Notification Option:          [Any]  Urgent

 Business Days Schedule

* Period 1 from (hh:mm):_____ to (hh:mm):_____ [Disabled]      Enabled

    Target 1 DN: _____________________________   [Phone] Tone Voice Numeric Service
                                                 Pager Callback Number:___________
    Target 2 DN: _____________________________   [Phone] Tone Voice Numeric Service
                                                 Pager Callback Number:___________
    Target 3 DN: _____________________________   Phone  Tone Voice Numeric [Service]
                                                 Pager ID Number:      ___________

 Non-Business Days Schedule:

* Period 1 from (hh:mm):_____ to (hh:mm):_____ [Disabled]  Enabled

    Target 1 DN: _____________________________   [Phone] Tone Voice Numeric Service
                                                 Pager Callback Number:___________
    Target 2 DN: _____________________________   [Phone] Tone Voice Numeric Service
                                                 Pager Callback Number:___________
    Target 3 DN: _____________________________   [Phone] Tone Voice Numeric Service
                                                 Pager Callback Number:___________

 Temporary Days Schedule up to midnight of (dd/mm/yy): _________

* Period 1 from (hh:mm):_____ to (hh:mm):_____ [Disabled]  Enabled

    Target 1 DN: _____________________________   [Phone] Tone Voice Numeric Service
                                                 Pager Callback Number:___________
    Target 2 DN: _____________________________   [Phone] Tone Voice Numeric Service
                                                 Pager Callback Number:___________
    Target 3 DN: _____________________________   [Phone] Tone Voice Numeric Service
                                                 Pager Callback Number:___________

  The Outcalling Fields data will be saved only if the user is saved.

  Return to
  Basic Fields
```

*There are actually three periods listed for each schedule, each with three targets.

3 Create a business day schedule. For each time period necessary

a. Enter the from and to time.

b. Enable the time period.

c. Enter up to three target DNs. For each target DN, specify the type of device.

d. For pagers, specify the Pager Callback Number. For general access pager services, enter the Pager ID Number.

4 Create a nonbusiness days schedule. For each time period necessary

   a. Enter the from and to time.

   b. Enable the time period.

   c. Enter up to three target DNs. For each target DN, specify the type of device.

   d. For pagers, specify the Pager Callback Number. For general access pager services, enter the Pager ID Number.

5 Create a temporary days schedule if necessary.

   a. Enter the date on which the temporary days schedule should be disabled.

   The schedule will be disabled at midnight of that day and the business days or nonbusiness days schedule will be activated.

   For each time period necessary

   b. Enter the from and to time.

   c. Enable the time period.

   d. For each period necessary, enter up to three target DNs. For each target DN, specify the type of device.

   e. For pagers, specify the Pager Callback Number. For general access pager services, enter the Pager ID Number.

6 Press the [Return to Basic Fields] softkey when you are done.

7 Press the [Save] softkey to save the user and remote notification schedule information.

The following outcalling fields are displayed:

- ***Current State of Remote Notification*** This is a read-only field which indicates whether or not remote notification is currently enabled or disabled for this user.

- ***Message Remote Notification Option*** This field specifies the type of message that will cause the system to remotely notify the mailbox owner. If "Any" is selected, the user will be notified of all new messages. If "Urgent" is selected, only those messages that are tagged as urgent will trigger a remote notification call.

- ***Schedules*** Up to three remote notification schedules can be defined for each user. One for business days, one for nonbusiness days and a temporary days schedule for short-term remote notification. The temporary days schedule overrides the business and nonbusiness days schedules until midnight of the date specified, including the current day. When the duration expires, the temporary days schedule is automatically disabled.

  To enable a schedule, define a valid time period and set the appropriate schedule to "Enabled" (defining the time period alone will not automatically enable the schedule). For a time period to be valid, the times must be chronologically correct, nonoverlapping, within the 24-hour time window (midnight to midnight) and the targets must be dialable, unrestricted phone or pager numbers.

  Within each schedule, you can define up to three time periods. For each time period, you can define up to 3 RN target DNs. The target DN can be a phone number, a directly dialable pager number, or a common pager service number (if this is a general access pager service, such as SkyPager).

  For each target DN that you enter you must define the type of device to which the service will be outcalling. If the device is a phone, select "Phone". You do not have to enter anything in the *Pager Callback Number* field. To define a pager as the target device, select one of the following options:

  - ***Tone*** defines either a Tone-only or Tone and Voice pager. You do not need to enter anything in the *Pager Callback Number* field.
  - ***Voice*** defines a Tone and Voice pager. You do not need to enter anything in the *Pager Callback Number* field.
  - ***Numeric*** defines a digital or numeric pager with DID access. Fill in the callback number to be displayed in the *Pager Callback Number* field. If you do not enter a callback number here, the number entered in the *Default Numeric Pager Data* field in the Outcalling Administration screen will be used instead.

- ***Service*** defines a digital or numeric pager with general access. Enter the pager's PIN number in the *Pager ID Number* field. In this case, the callback number is taken from the *Default Numeric Pager Data* field in the Outcalling Administration screen. This is a system-wide callback number that is displayed on all pagers configured with "Service" as the RN target device.

Adding remote voice users

Note: To add users as remote voice users, Meridian Networking must be installed.

Users at remote Meridian Mail sites that are networked to yours through Meridian Networking can be added to your system as Remote Voice Users. This is by no means necessary. There are, however, several benefits of doing this:

- When a remote voice user sends a message to a user at the local site, the sender's personal verification is played. When a user at a remote site (that is not defined as a remote voice user) sends a message, the mailbox number (for example, 63385443, if the dialing plan is ESN) is played to the recipient.
- Remote voice users can be added to distribution lists, whereas users at remote sites (not defined as remote voice users) cannot.
- Users at the local site can use name dialing to reach remote voice users.
- External callers to your system can reach remote voice users by name dialing (for example, through a voice menu or thru-dialer) if you enable the *Name Dialable by External Callers* field.

You should only choose to add those users who correspond frequently with users at the local site or if it is important that they can be included in your distribution lists. For more information about Meridian Networking, see the chapter "Meridian Networking administration" in the *Networking Services Administration Guide* (NTP 555-7001-335).

The following fields are displayed:

- ***Mailbox Number*** Enter the mailbox number preceded by any necessary access codes and the user's network prefix. The access code is the number used to dial out of the system (such as "6" for ESN). The network prefix will depend on the type of dialing plan used at the remote site. It may be an ESN prefix, a mailbox prefix, a dialing prefix or, if the remote site is part of a CDP dialing plan, the CDP steering code is already part of the mailbox number and no additional prefixes need to be added. For example, if the remote voice user is part of an ESN dialing plan, the access code will likely be "6". This is followed by the ESN prefix for that site ("233") and the mailbox number "4433", making the full extension 62334433). (Dialing plans and network prefixes are described in the "Meridian Networking administration" chapter in the *Networking Services Administration Guide*, NTP 555-7001-335.) This number can be up to 28 digits long.
- ***Last Name*** This is the last name of the remote voice user. This field can hold up to 41 characters. This field accepts any characters with the exception of the restricted characters "+", "?", and "_". However, it is recommended that you use alphanumeric characters only because this field is used by the name dialing and name addressing features. The default is blank.
- ***First Name*** This is the first name of the new remote voice user. This field can hold up to 21 alphanumeric characters. You can use spaces and hyphens. The default is blank.
- ***Initials*** These are the initials of the remote voice user. This field can hold up to 5 alphanumeric characters. This field is for display only and can be used to distinguish users with identical first and last names. These initials, however, cannot be used during name dialing.

  Note: If you do not enter any initials, the system will automatically fill in this field with the first initial of the user's first name.

- ***Department*** (MMUI only) You may enter up to 31 characters. The characters "+", "_", and "?" are restricted. It is recommended that you use alphanumeric characters only and avoid using special characters altogether (even though some are accepted by this field).

  When adding the first user during this add session, this field will be blank by default. For subsequent users, this field defaults to the department entered for the last user added.

  You can retrieve users on the basis of department when using the Find Remote Voice Users function (described later in this chapter). However, only the first 26 characters of the department are displayed in the List of Remote Voice Users screen. Therefore, make sure that department names are unique based on the first 26 characters of their names.

- ***Extension DNs*** Enter the user's full extension number at the remote site including any necessary access codes and network prefixes. You can enter up to three DNs. (The primary DN is required whereas the others are optional.) For example, if the remote voice user is part of an ESN dialing plan, the access code will likely be "6". This is followed by the ESN prefix for that site ("233") and the mailbox number "4433", making the full extension 62334433).

- ***Personal Verification Recorded (Voice***) When a personal verification has been recorded, this field is set to "Yes". "No" indicates that no verification is currently recorded. This field is only changed by using the [Voice] softkey. The personal verification is played when a local user composes a message to the remote user, includes the remote user in a distribution list, or uses the name dialing feature to call the remote user.

- ***Name Dialable by External Callers*** (MMUI only) When this field is set to "Yes", external callers can reach the remote voice user by entering the user's name rather than the user's extension. Name dialing can be used when an external caller is connected to a voice menu or thru-dialer and does not remember the user's extension. If this field is set to "No", external callers have to enter the remote user's DN (including access code and network prefix) whenever prompted for an extension. The default is "Yes".

It may not be desirable to enable this feature for all remote voice users. A caller who is connected to your system through a voice menu can get through to any extension as long as they know the person's name. You may, therefore, want to set this field to "No" for those users who have their phone calls screened.

Procedure 7-7
Adding a remote voice user
Starting point: The Main Menu

1 Select User Administration.

2 Select Remote Voice User.

3 Select the [Add] softkey.

You are prompted for a remote mailbox number . The [Cancel] softkey is displayed.The mailbox number can be up to 28 digits long.

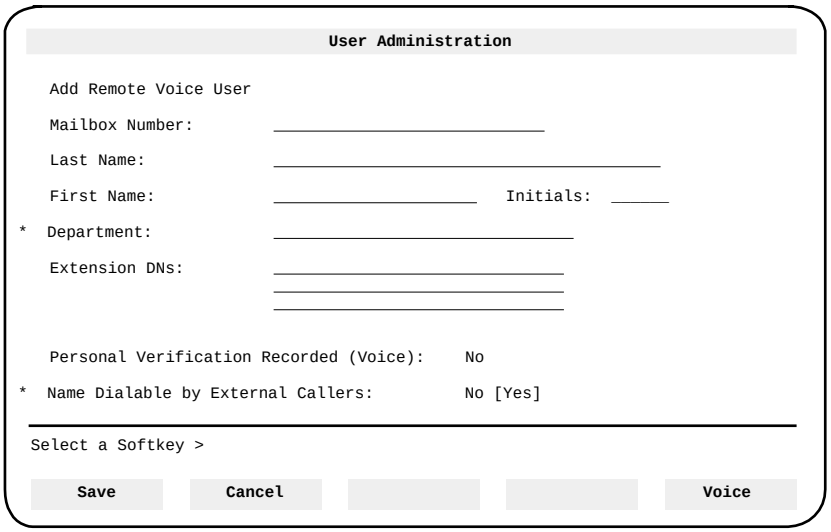
4 Go to step 4a if you do not want to add the user. Go to step 4b to proceed.

a. Use [Cancel].

b. Enter the location prefix (ESN prefix or CDP steering code) and mailbox number and press <Return>.

The Add Remote Voice User screen is displayed below (Figure 7-5).

Figure 7-5
The Add Remote Voice User screen



* These fields are displayed only for MMUI users.

5 Enter the remote voice user's last name, first name, initials (optional), and department.

6 Normally the primary extension DN is the same as the user's mailbox number and message waiting indication DN. If required, however, it can be modified. Enter optional secondary and tertiary DNs if necessary.

7 Press the [Voice] softkey to record a personal verification, if one is not already recorded.

a. Enter the extension number of the phone you will be using to record the verification.

A new set of softkeys is displayed.

b. Press the [Record] softkey.

c. At the sound of the beep, speak the user's name into the telephone handset.

d. Press the [Stop] softkey to stop recording.

e. If you are satisfied with the recording, press either [Disconnect] or [Return] to display the original softkeys.

When you use [Return], the line is not disconnected (unless you hang up the receiver). This means that if you decide to rerecord or listen to the recording, you do not have to reenter the telephone extension after pressing the [V oice] softkey.

When you use [Disconnect], the line is disconnected and if you press [Voice] to access the recording softkeys again, you will have to reenter the telephone extension.

See the section, "Recording personal verifications using the [Voice] softkey" on page 7-40 for more information about the recording softkeys.

8 Disable name dialing by external callers if necessary.

9 Go to step 9a to save the new user, or 9b to cancel the addition.

a. Use [Save].

The system saves the new user and prompts for another remote voice user mailbox number. To add another user, go to step 4b. Go to step 9b if you do not want to add more users at this time.

b. Use [Cancel].

The information for the new user is discarded.

Adding directory entry users

Directory entry users do not have mailboxes associated with their extensions. This may be the case for one of several reasons. The user may not require or want a mailbox, or perhaps the user is not authorized to have a mailbox. Another common reason is that a user shares the same phone with other users. (In other words, you can associate a number of directory entry users with the same DN. This is unlike local voice users in that each local voice user must have a unique primary DN and mailbox number.) In this case, if you were to create a mailbox for this telephone, it would not be clear for whom new messages are intended when the MWI is turned on.

Because directory entry users do not have mailboxes, they, therefore, do not have access to voice messaging functions (such as compose and send) or other features such as outcalling, AMIS networking, and so on. However, by adding users as directory entry users, they are included in the Meridian Mail directory. This means that these users can be dialed using thru-dial features such as name dialing and automated attendants.

For example, if June Miller, Andy Artaud, and Don Lawrence share the same phone (at extension 2339), another user can call June by using the name dialing feature instead of dialing the extension number. This is also useful when an external caller wants to ring a user's phone through a voice menu or automated attendant. If the external caller does not remember June's extension number, the caller can still dial the phone by entering June's name.

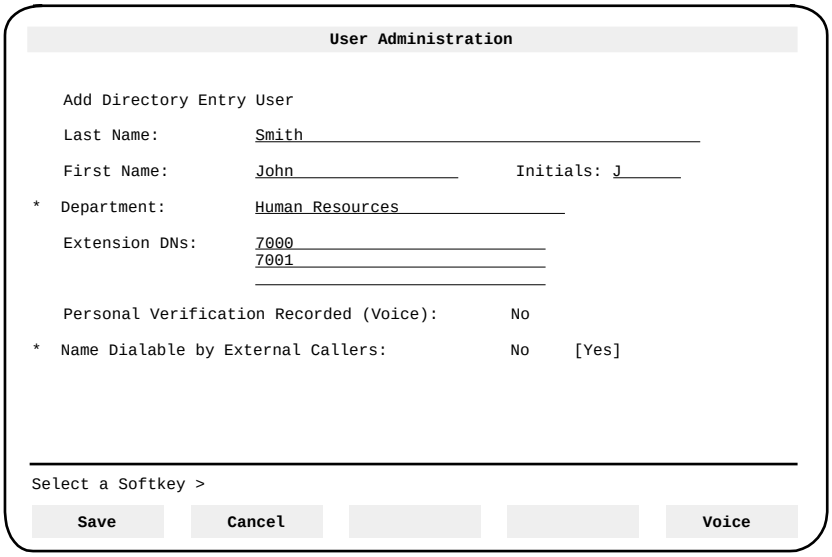
If at some point a directory entry user needs a mailbox, you will have to delete the directory entry user and add the user again as a local voice user.

> ***Note:*** Directory entry users are only applicable to the MMUI interface.

The Add Directory Entry User screen

Directory entry users are added to the system through the Add Directory Entry User screen (Figure 7-6). Like local voice users, each directory entry user can be associated with up to three different extensions. Primary extension numbers do not have to be unique. A number of users can share the same extension.

Figure 7-6
The Add Directory Entry User screen



* These fields are displayed for MMUI users only.

The Directory Entry User screen contains the following fields:

- ***Last Name*** This is the last name of the new directory entry user, up to 41 characters in length. This field is mandatory. This field accepts any characters with the exception of the restricted characters "+", "_", and "?". However, you should limit yourself to alphanumeric characters for name dialing to work properly. This field is blank by default. Be sure to fill it in and ensure correct spelling because the name dialing feature uses this information.
- ***First Name*** This is the first name of the new directory entry user. It can be up to 21 alphanumeric characters in length. Spaces and hyphens ("-") are also allowed. The default is blank.
- ***Initials*** This field holds the initials (up to 5 alphanumeric characters) of the directory entry user. Using initials can help you distinguish users with identical first and last names. These initials, however, cannot be used in name dialing.

Note: If you do not enter any initials, the system will automatically fill in this field with the first initial of the user's first name.

- ***Department*** (MMUI only) You may enter up to 31 characters. The characters "+", "_", and "?" are restricted. It is recommended that you use alphanumeric characters only, and avoid using special characters altogether (even though some are accepted by this field).

  When adding the first user to the system, this field will be blank by default. For subsequent users, this field defaults to the department entered for the last user added.

  You can retrieve users on the basis of department when using the Find Directory Entry Users function (described later in this chapter). However, only the first 26 characters of the department are displayed in the List of Directory Entry Users screen. Therefore, make sure that department names are unique based on the first 26 characters of their names.

- ***Extension DNs*** The user's extension number or numbers. A user can have up to three extension DNs (a primary, secondary and tertiary DN). This means that a caller can dial any of these numbers and still reach the user's mailbox. A DN can be up to 30 digits in length.

  The first field is for the primary DN and is mandatory. You cannot save the user if this field is blank. It is automatically filled in with the DN you entered to access this screen and is therefore the same as the mailbox number.

  Important: If the mailbox number and primary DN are not the user's 7-digit directory DN, you must enter the 7-digit directory DN as the secondary DN. For example, in a centrex or private network environment, the primary DN can be the user's locally dialable extension (typically a 4-digit DN). In this case, you must enter the 7-digit DN as the secondary DN because it is required by Meridian Mail when sending message waiting notifications.

  If the 7-digit directory DN is the primary DN, the secondary DN is optional. The tertiary DN is optional.

  Note: If the SMDI link is set to 10-digit messaging, the extension DN could include the area code (this is the full 10-digit DN).

Note: Make sure none of these DNs conflict with any distribution list numbers. If a distribution list and a directory entry user share the same number, the distribution list number will take precedence over a directory entry user number during compose. The message will not be sent to the directory entry user.

- ***Personal Verification Recorded (Voice)*** If a personal verification has been recorded for this user, this field displays "Yes". "No" indicates that no verification is currently recorded. The setting in this field changes when the [Voice] softkey is used to record a verification. The personal verification is played when the user's phone is dialed using a Thru-Dial service (including name dialing). It informs the caller that he or she has reached the correct phone.
- ***Name Dialable by External Callers*** (MMUI only.) When this field is set to "Yes", external callers can reach the user through the name dialing feature. This may occur when a caller reaches a voice menu and is prompted to enter an extension or the name of the person they want to speak to. (Internal callers can always use name dialing to call directory entry users.) The default is "Yes".

Procedure 7-8
Adding a directory entry user

Starting point: The Main Menu

1 Select User Administration.

2 Select Directory Entry User.

3 Select [Add].

You are prompted to enter a DN.

The [Cancel] softkey is displayed.

4 Go to step 4a if you do not want to continue, or 4b to proceed.

a. Use [Cancel].

b. Enter the extension number and press <Return>.

This number will be used in the Add Directory Entry User screen to fill in the primary Extension DN field.

Note: Make sure this DN does not conflict with any distribution list numbers. If a distribution list and a directory entry user share the same number, the distribution list number will take precedence over a directory entry user number during compose. The message will not be sent to the directory entry user.

Once a valid DN has been entered, the Add Directory Entry User screen is displayed (Figure 7-6).

5 Enter the *Last Name*, *First Name*, *Department*, and *Extension Numbers* of the new user.

6 Press the [Voice] softkey to record a personal verification.

a. Enter the extension number of the phone you will be using to record the verification.

A new set of softkeys is displayed.

b. Press the [Record] softkey.

c. At the sound of the beep, speak the user's name.

d. Press the [Stop] softkey to stop recording.

e. If you are satisfied with the recording, press either [Disconnect] or [Return] to display the original softkeys.

When you use [Return], the line is not disconnected (unless you hang up the receiver). This means that if you decide to rerecord or listen to the recording, you do not have to reenter the telephone extension after pressing the [V oice] softkey.

When you use [Disconnect], the line is disconnected, and if you press [Voice] to access the recording softkeys again, you will have to reenter the telephone extension.

See the section, "Recording personal verifications using the [Voice] softkey" on page 7-40 for more information about the recording softkeys.

7 Go to step 7a to save the new user, or 7b to cancel the addition.

a. Use [Save].

The system saves the user and prompts for another extension number.

To add another user, enter the extension, press <Return> and fill in the screen for the new user. If there are no further users to add, go to step 7b to leave the screen.

b. Use [Cancel].

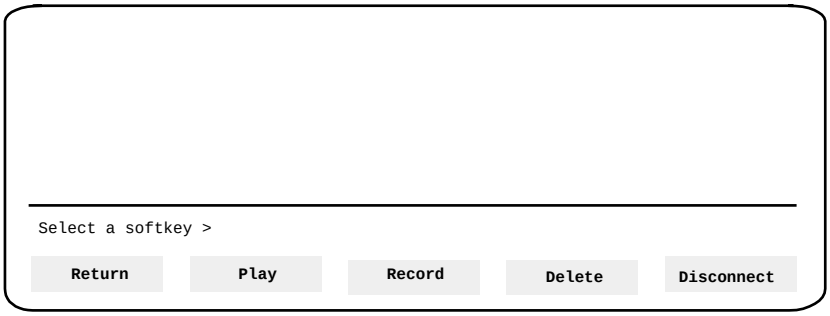
The information for the new user is discarded.

Recording personal verifications using the [Voice] softkey

The [Voice] softkey is displayed on the Add and View/Modify User screens. When this softkey is pressed, a new set of softkeys is displayed as in Figure 7-7. These allow you to record personal verifications for all types of users (directory entry users, local voice users, and remote voice users). When a personal verification is recorded, the *Personal Verification Recorded (Voice)* field is automatically set to "Yes".

> ***Note:*** A telephone set is required to record the personal verification. Ensure that a phone set is available near the administration terminal where you are working.

Figure 7-7
Personal verification recording softkeys



Procedure 7-9
Recording, playing, and deleting personal verifications

Starting point: The Main Menu

1. Select User Administration.
2. Select the type of user (local voice user, directory entry user, or remote voice user).
3. If you haven't added the user yet, go to step 3a. If you want to record a personal verification for an existing user, go to step 3b.
   a. Press the [Add] softkey. Enter the extension number when prompted and press <Return>.
   b. Press the [View/Modify] softkey. Enter the extension number when prompted. If you do not know the extension number of the user, use the [Find] softkey instead to retrieve the user from a subset of users.

4 From the Add or View/Modify User screen, press the [Voice] softkey.

You are prompted for an extension number .

5 Enter the extension number of the phone set you are going to use to record a spoken name.

The phone will ring when you press <Return> after you finish entering the extension.

6 Pick up the telephone handset.

7 To record a new verification, go to step 7a. To listen to the existing personal verification, go to step 7b. To delete the existing personal verification, go to step 7c. To return to the original set of softkeys, go to step 7d.

a. Press the [Record] softkey. At the sound of the beep speak the personal verification for the user into the handset.

When you pressed the [Record] softkey , a new [Stop] softkey appeared in its place.

Press the [Stop] softkey to stop recording.

b. Press the [Play] softkey.

If a verification has been recorded for the user , it is played over the phone.

c. Press the [Delete] softkey.

If a verification has been recorded, it is deleted. A prompt is displayed advising you that the recording was deleted.

d. If you are satisfied with the recording, press either [Disconnect] or [Return] to display the original softkeys.

When you use [Return], the line is not disconnected (unless you hang up the receiver). This means that if you decide to rerecord or listen to the recording, you do not have to reenter the telephone extension after pressing the [V oice] softkey.

When you use [Disconnect], the line is disconnected, and if you press [Voice] to access the recording softkeys again, you will have to reenter the telephone extension.

Finding users

The Find function can be used to retrieve a list of users for viewing or printing. This is useful for record-keeping purposes. It is also useful if you need to view or modify a particular user but you do not know the mailbox number. (When you press the [View/Modify] softkey after selecting Local Voice user or Remote Voice User from the User Administration menu, you are prompted for a mailbox number.) If you only know the last name, for example, use the [Find] softkey to retrieve the user according to name.

Using wildcard characters

The fields on the Find Users screens accept three wildcard characters: "+" (plus sign), "_" (underscore), and "?" (question mark).

The plus sign (+) is used to match a number of characters. For example, if you enter "2+" in the *Mailbox Number* field, all mailboxes beginning with 2 will be retrieved.

The underscore (_) matches a single character. For example, if you enter "210_" in the *Mailbox Number* field, mailboxes with numbers in the range 2100 to 2109 will be retrieved. To retrieve all mailboxes numbered 2100 to 2199, enter "21_ _".

The question mark (?) produces a "sound match." This is useful if you are unsure of the spelling of a user's name. For example, a user calls to inform you that his mailbox has been disabled and tells you that his name is "Roger Braemoore". You forget to ask him for the spelling of his last name (it could be spelled Braymore, Braemore, Breymore, or some other way you may not think of). If you enter "Br+more", the system will find all surnames that begin with "br" and end with "more". If you enter "Br__more", the system will find surnames that begin with "br" followed by two characters and ending with "more". In both of these cases, the user you are looking for will not be found because you did not think to enter "moore" instead of "more". If you enter "Braymore?", the system will find all names that sound like "Braymore" and find the user you are searching for.

> ***Note:*** The search criteria that you specify in this screen also apply when you use the [Print Users] softkey.

Finding local voice users

To access the Find Local Voice User screen, follow Procedure 7-10.

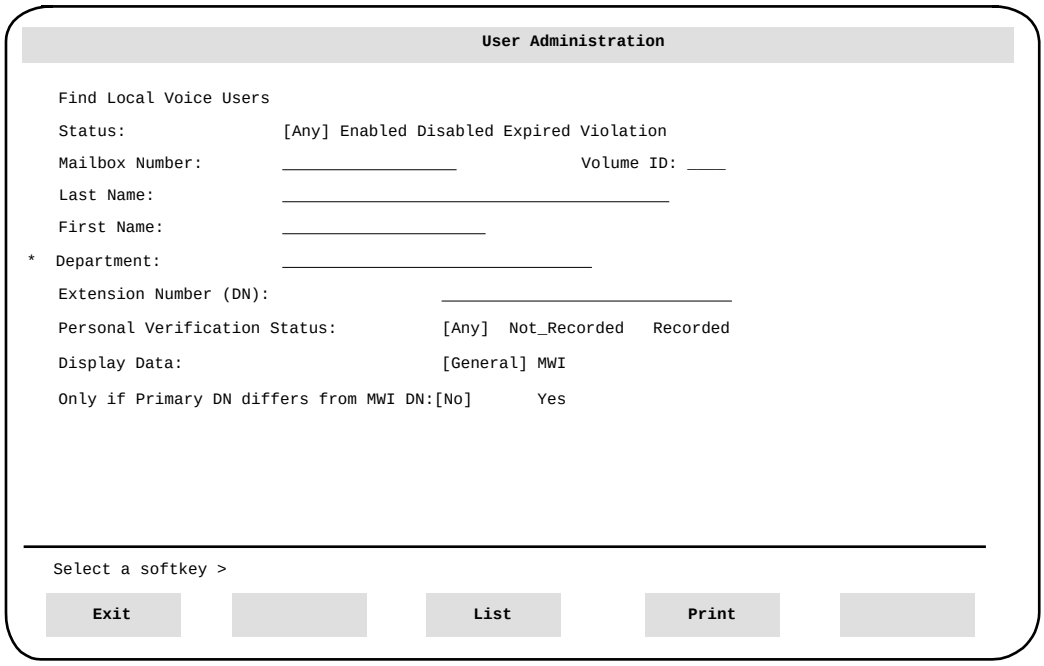
Procedure 7-10
Accessing the Find Local Voice Users screen

Starting point: The Main Menu

1. Select Local Voice User.
2. Press the [Find] softkey.

   The Find Local Voice Users screen (Figure 7-8) is displayed.

Figure 7-8
The Find Local Voice Users screen



* This field is displayed only if MMUI is installed.

The following fields are displayed:

- ***Status*** This field allows you to retrieve and view local voice users according to their mailbox status. You have five choices:
  - ***Any*** Select this option to retrieve local voice users regardless of their current mailbox status.
  - ***Enabled*** Select this option if you want to find users whose mailboxes are enabled.
  - ***Disabled*** Select this option to find users whose mailboxes are disabled. These users cannot log on, however messages are still received. A mailbox may be disabled if the user has made too many logon attempts with an incorrect password or if their password has expired.
  - ***Expired*** Select this option to find users whose passwords have expired. This situation can occur only if users are required to change their password before the number of days stipulated in the *Maximum Days Permitted Between Password Changes* field in the Voice Security Options screen. If a user's password has expired, he or she will have to enter a new password the next time that he or she logs on.
  - ***Violation*** Select this option to find users who have surpassed the maximum number of allowed invalid logon attempts for their mailbox (configured in the Voice Security Options screen). Users who have made too many invalid logon attempts will not be able to log on and their mailbox will be disabled.
- ***Mailbox Number*** You might use this field to retrieve users within a certain range of mailbox numbers. For example, to retrieve all users with mailbox numbers between 2300 and 2399, enter "23_ _" or "23+". This field can hold up to 18 characters.
- ***Volume ID*** To find all users or a subset of users on a particular volume, enter a volume number in this field.

Information on disk usage can be obtained through the Disk Usage report (see "Operational Measurement Reports" in the "Operational measurements" chapter). If you notice that one volume is getting full, you should move some of the users to another volume. Set the *Volume ID* field to the ID of the volume that is almost full in order to get a list of user's names and their mailbox numbers. You can then move some of these users to another volume with the Move User utility accessible through the Tools menu. See the *System Administration Tools* guide (NTP 555-7001-305) for more information.

- ***Last Name*** Fill in this field if you want to retrieve a particular user and only remember the last name. Use wildcard characters if you are unsure of the spelling.
- ***First Name*** Fill in this field if you want to retrieve a particular user and only remember the first name. Or if you also know the last name, the first name will narrow down the search (if a number of users have the same last name). Use wildcard characters if you are unsure of the spelling.
- ***Department*** (MMUI only) This field can help you narrow down a search even further if, for example, you only remember the first or last name of the user you want to find. You can also use this field if you want to retrieve all users that belong to a particular department. Use wildcard characters if you are unsure of the spelling or exact name of the department.
- ***Extension Number (DN)*** The user's primary extension DN. Enter the user's DN if it is known (and if different from the mailbox number). Use wildcard characters to retrieve a subset of users in a particular range of DNs.
- ***Personal Verification Status*** Set this field to "Not_Recorded" to retrieve all local voice users who do not have a recorded personal verification. Since it is a good idea for all users to have a personal verification, you can either record a verification for the user yourself, or notify the found users and suggest that they record their own personal verifications (if the *Personal Verification Changeable by User* field in the user's class of service is set to "Yes"). If the personal verification status is not important, make sure this field is set to "Any" (the default).

- ***Display Data*** This field determines the format in which the resulting list of retrieved users will be displayed. Your choices are
  - ***General*** When selected, the list of users includes the following information: user's name, mailbox number, department, COS number, the amount of storage used, and whether or not a personal verification has been recorded. See Figure 7-9. This is the default format on entering the Find Local Voice User screen.
  - ***MWI*** When selected, the list of users includes the following information: user's name, DN, mailbox number, the number of read messages, the number of unread messages, the number of text messages, and the MWI status. See Figure 7-10.
- ***Only if Primary DN differs from MWI DN*** Set this field to "Yes" if you want to check for occurrences of a mismatch between extension DN and MWI DN. If a user's primary DN differs from his or her MWI DN, the MWI DN may be set to the extension DN of another user, meaning that the user is not being notified of new messages and that some other user is being notified of someone else's messages. The default is "No".

Viewing a list of local voice users

The List of Local Voice Users screen appears when the [List] softkey on the Find Local Voice Users screen is used. It provides a list of user names and mailboxes matching the search parameters entered in the Find Local Voice Users screen. Users are sorted by the first search parameter that is filled in on the Find Local Voice Users screen. From the resulting list you can select a particular user and view, modify, or delete the user.

Procedure 7-11
Viewing a list of local voice users

Starting point: The Find Local Voice Users screen

1 Fill in the screen with the required search parameters.

2 Use [List] to display search results on the screen.

The List of Local Voice Users screen is displayed. If Display Data is set to "General", see Figure 7-9. If Display Data is set to "MWI", see Figure 7-10.

3 To view, modify, or delete a user, move the cursor to the user's name and press the <Space Bar> to select it. To view or modify a user, go to step 3a. To delete a user , go to step 3b. To record a personal verification for the user, go to step 3c.

a. Press the [View/Modify] softkey.

The View/Modify Local Voice User screen is displayed. See the section "Viewing and modifying local voice users."

b. Press the [Delete] softkey.

The Delete Local Voice User screen is displayed. See the section "Deleting local voice users."

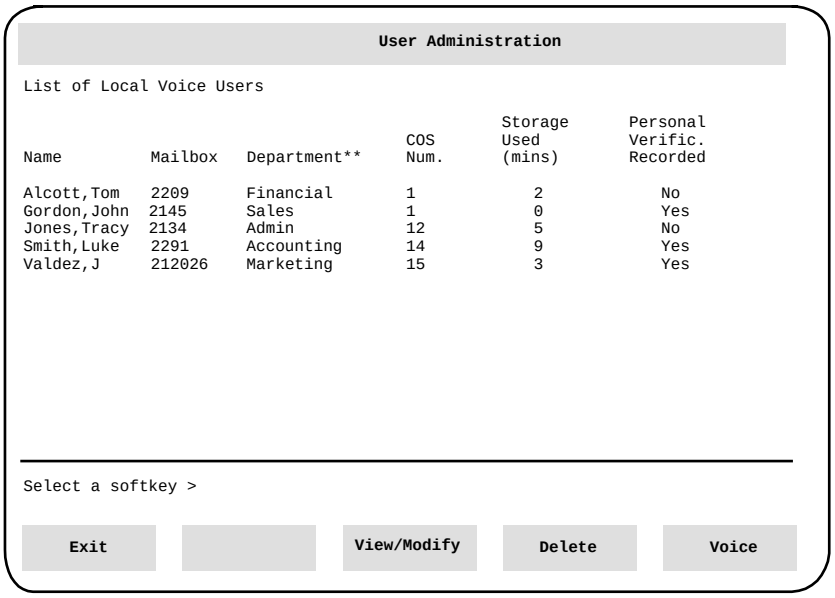
c. Press the [Voice] softkey.

The recording softkeys are displayed. Refer to the section "Recording personal verifications using the [Voice] softkey" on page 7-40.

The List of Local Voice Users screen

When you choose to list the retrieved local voice users on screen, the display format of the screen depends on how the *Display Data* field in the Find Local Voice Users screen is configured. Figure 7-9 shows the general format, and Figure 7-10 shows the MWI format.

Figure 7-9
The List of Local Voice Users screen (General)

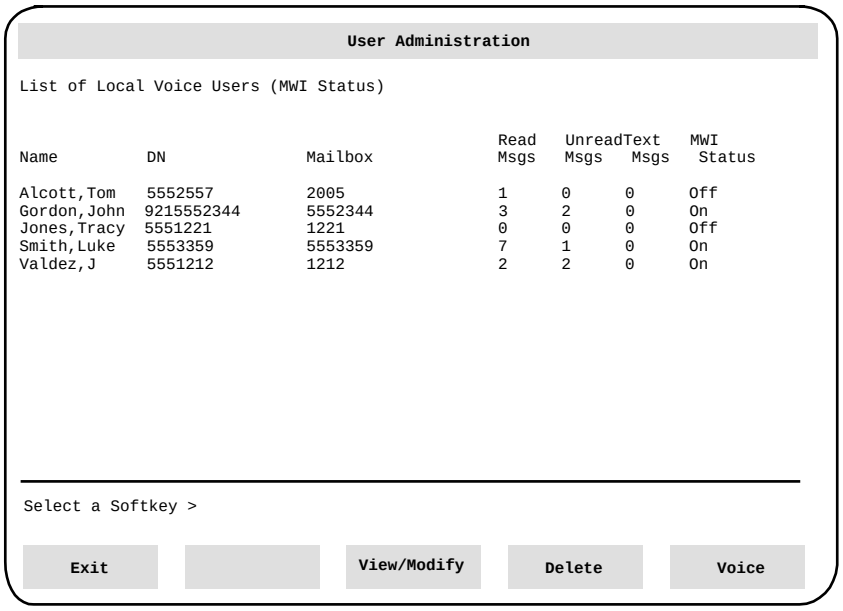


* The Department column only appears if MMUI is installed.

The following information is displayed for each user:

- ***Name*** This is the user's last name followed by the first name.
- ***Mailbox*** This is the user's mailbox number.
- ***Department*** (MMUI only.) This is the name of the department to which the user belongs.
- ***COS Num*** This is the number of the class of service to which the user belongs.
- ***Storage Used (mins)*** These are the minutes of voice storage used up by the user.
- ***Personal Verific Recorded*** This indicates whether or not a spoken name has been recorded for this user.

Figure 7-10
The List of Local Voice Users screen (MWI)



The following information is displayed for each user:

- ***Name*** This is the user's last name followed by the first name.
- ***DN*** This is the user's primary DN.
- ***Mailbox*** This is the user's mailbox number.
- ***Read Msgs*** This is the number of read messages in the user's mailbox.
- ***Unread Msgs*** This is the number of unread messages in the user's mailbox.
- ***Text Msgs*** This is the number of text messages in the user's mailbox.
- ***MWI Status*** This is the status of the message waiting indicator. "On" indicates that there are new unread messages waiting. "Off" indicates there are no new unread messages (even though there may be older unread messages in the mailbox).

Printing a list of local voice users

The results of your search can also be printed. Instead of using the [List] softkey on the Find Local Voice Users screen, use the [Print] softkey.

Procedure 7-12
Printing a list of local voice users

Starting point: The Find Local Voice Users screen

1 Fill in the screen with the required search parameters.

2 Press the [Print] softkey.

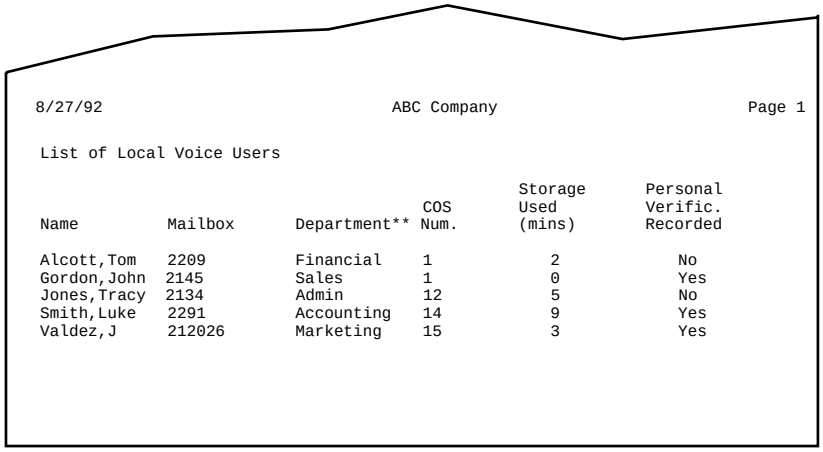
Two new softkeys are displayed: [Continue Printing] and [Cancel Printing].

3 Press [Continue Printing] to send the results to the printer.

See Figure 7-11 for an example of the printer output.

Press [Cancel Printing] at any time to cancel the print job.

Figure 7-11
Print output example



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List of Local Voice Users

Name	Mailbox	Department**	COS Num.	Storage Used (mins)	Personal Verific. Recorded
Alcott,Tom	2209	Financial	1	2	No
Gordon,John	2145	Sales	1	0	Yes
Jones,Tracy	2134	Admin	12	5	No
Smith,Luke	2291	Accounting	14	9	Yes
Valdez,J	212026	Marketing	15	3	Yes

* The Department column appears only if MMUI is installed.

Finding remote voice users

To access the Find Remote Voice Users screen, follow Procedure 7-13.

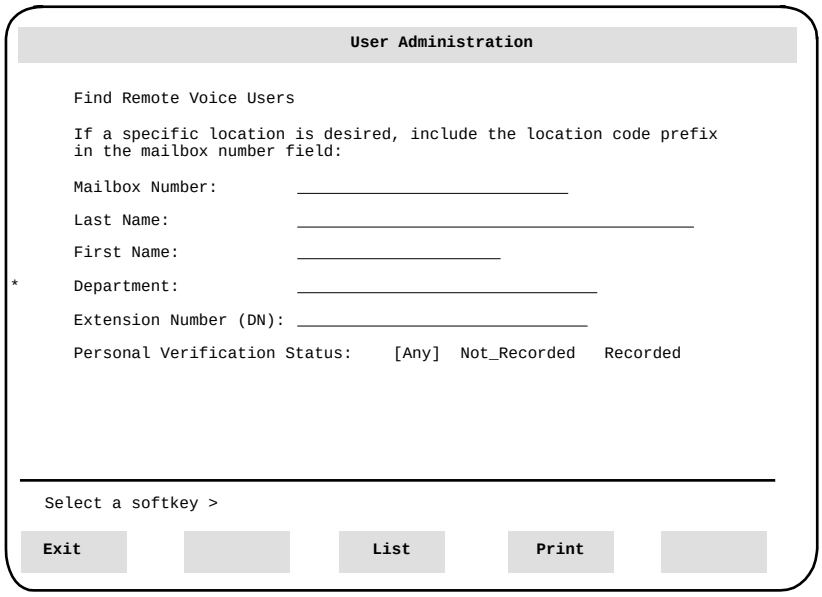
Procedure 7-13
Accessing the Find Remote Voice Users screen

Starting point: The Main Menu

1. Select User Administration.
2. Select Remote Voice User.
3. Press the [Find] softkey.

   The Find Remote Voice Users screen (Figure 7-12) is displayed.

Figure 7-12
The Find Remote Voice Users screen



* This field is displayed only if MMUI is installed.

The following fields are displayed:

- ***Mailbox Number*** You can use this field to retrieve remote voice users within a certain range of mailbox numbers. You can use the wildcard characters "+", "_" and "?". This field can hold up to 28 characters.

- ***Last Name*** Fill in this field if you want to retrieve a particular user and only remember the last name. Use wildcard characters if you are unsure of the spelling.
- ***First Name*** Fill in this field if you want to retrieve a particular user and only remember the first name. If you also know the last name, the first name will narrow down the search (if a number of users have the same last name). Use wildcard characters if you are unsure of the spelling.
- ***Department*** (MMUI only) This field can help you narrow down a search even further, if for example, you only remember the first or last name of the user you want to find. You can also use this field if you want to retrieve all users that belong to a particular department. Use wildcard characters if you are unsure of the spelling or exact name of the department.
- ***Extension Number (DN)*** This is the user's primary extension DN. Enter the user's DN if it is known (and if different from the mailbox number). Use wildcard characters to retrieve a subset of users in a particular range of DNs.
- ***Personal Verification Status*** Set this field to "Not_Recorded" to retrieve all remote voice users who do not have a recorded personal verification. Since it is a good idea for all users to have a personal verification, you should record a verification for the user. If the personal verification status is not important, make sure this field is set to "Any" (the default).

Viewing a list of remote voice users

The List of Remote Voice Users screen appears when the [List] softkey on the Find Remote Voice Users screen is used. It provides a list of user names and mailboxes matching the search parameters entered in the Find Remote Voice Users screen. Users are sorted by the first search parameter that is filled in on the Find Remote Voice Users screen. From the resulting list, you can select a particular user and view, modify, or delete the user.

Procedure 7-14
Viewing a list of remote voice users

Starting point: The Find Remote Voice Users screen

1. Fill in the screen with the required search parameters.
2. Use [List] to display search results on the screen.

The List of Remote Voice Users screen is displayed. See Figure 7-13.

3 To view, modify, or delete a remote voice user, move the cursor to the user's name and press the <Space Bar> to select it. To view or modify a remote voice user, go to step 3a. To delete a remote voice user, go to step 3b. To record a personal verification for the user, go to step 3c.

a. Press the [View/Modify] softkey.

The View/Modify Remote Voice User screen is displayed. See the section "Viewing and modifying remote voice users."

b. Press the [Delete] softkey.

The Delete Remote Voice User screen is displayed. See the section "Deleting remote voice users."

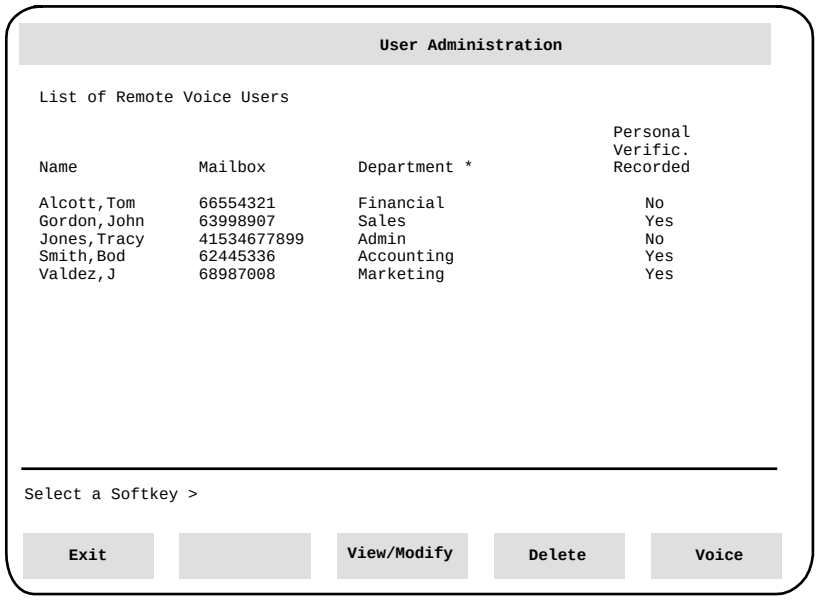
c. Press the [Voice] softkey.

The recording softkeys are displayed. Refer to the section "Recording personal verifications using the [Voice] softkey" on page 7-40.

The List of Remote Voice Users screen

The List of Remote Voice Users screen (Figure 7-13) is displayed when you choose to list users from the Find Remote Voice Users screen.

Figure 7-13
The List of Remote Voice Users screen



* The department column only appears if MMUI is installed.

The following fields are displayed:

- ***Name*** This is the user's last name followed by the first name.
- ***Mailbox*** This is the user's mailbox number (in network format).
- ***Department*** This is the department to which the user belongs.
- ***Personal Verific Recorded*** This field indicates whether or not a spoken name (personal verification) has been recorded for this user.

Printing a list of remote voice users

The results of your search can also be printed. Instead of using the [List] softkey on the Find Remote Voice Users screen, use the [Print] softkey.

Procedure 7-15
Printing a list of remote voice users

Starting point: The Find Remote Voice Users screen

1 Fill in the screen with the required search parameters.

2 Press the [Print] softkey.

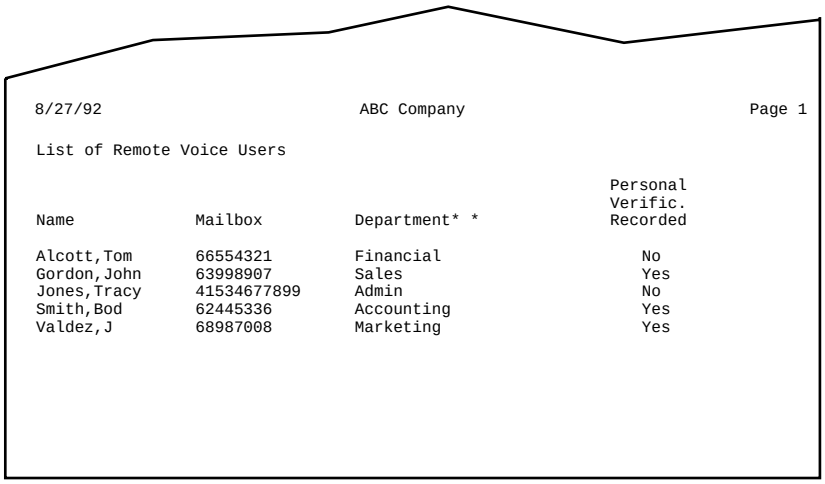
Two new softkeys are displayed: [Continue Printing] and [Cancel Printing].

3 Press [Continue Printing] to send the results to the printer.

See Figure 7-14 for an example of the printer output.

Press [Cancel Printing] at any time to cancel the print job.

Figure 7-14
Print remote voice users output



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List of Remote Voice Users

                                                          Personal
                                                          Verific.
Name              Mailbox          Department* *          Recorded

Alcott,Tom        66554321         Financial                 No
Gordon,John       63998907         Sales                     Yes
Jones,Tracy       41534677899      Admin                     No
Smith,Bod         62445336         Accounting                Yes
Valdez,J          68987008         Marketing                 Yes
```

* The department column only appears if MMUI is installed.

Finding directory entry users

To access the Find Directory Entry Users screen, follow Procedure 7-16.

Procedure 7-16
Accessing the Find Directory Entry Users screen

Starting point: The Main Menu

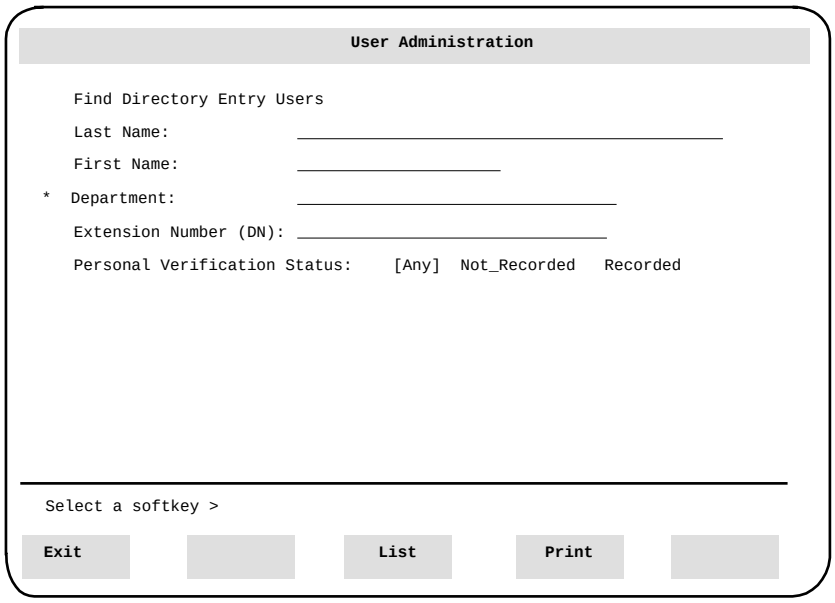
1 Select User Administration.

2 Select Directory Entry User.

3 Press the [Find] softkey.

The Find Directory Entry Users screen (Figure 7-15) is displayed.

Figure 7-15
The Find Directory Entry Users screen



* This field is displayed only if MMUI is installed. .

The following fields are displayed:

- ***Last Name*** Fill in this field if you want to retrieve a particular user and only remember the last name. Use wildcard characters if you are unsure of the spelling.

- ***First Name*** Fill in this field if you want to retrieve a particular user and only remember the first name. If you also know the last name, the first name will narrow down the search (if a number of users have the same last name). Use wildcard characters if you are unsure of the spelling.
- ***Department*** (MMUI only) This field can help you narrow down a search even further if, for example, you only remember the first or last name of the user you want to find. You can also use this field if you want to retrieve all users that belong to a particular department. Use wildcard characters if you are unsure of the spelling or exact name of the department.
- ***Extension Number (DN)*** This is the user's primary extension DN. Enter the user's DN if it is known. Use wildcard characters to retrieve a subset of users in a particular range of DNs.
- ***Personal Verification Status*** Set this field to "Not_Recorded" to retrieve all directory users who do not have a recorded personal verification. Since it is a good idea for all users to have a personal verification, you should record a verification for the user. If the personal verification status is not important, make sure this field is set to "Any" (the default).

Viewing a list of directory entry users

The List of Directory Entry Users screen (Figure 7-16) appears when the [List] softkey on the Find Directory Entry Users screen is used. It provides a list of user names matching the search parameters entered in the Find Directory Entry Users screen.

Procedure 7-17
Viewing a list of directory entry users

Starting point: The Find Directory Entry Users screen

1. Fill in the screen with the required search parameters.
2. Use [List] to display the results of the search on the screen.

   See Figure 7-16.

3 To view, modify, or delete a directory entry user, move the cursor to the user's name and press the <Space Bar> to select it. To view or modify a directory entry user, go to step 3a. To delete a directory entry user, go to step 3b. To record a personal verification for the user, go to step 3c.

a. Press the [View/Modify] softkey.

The View/Modify Directory Entry User screen is displayed. See the section "Viewing and modifying directory entry users."

b. Press the [Delete] softkey.

The Delete Directory Entry User screen is displayed. See the section "Deleting directory entry users."

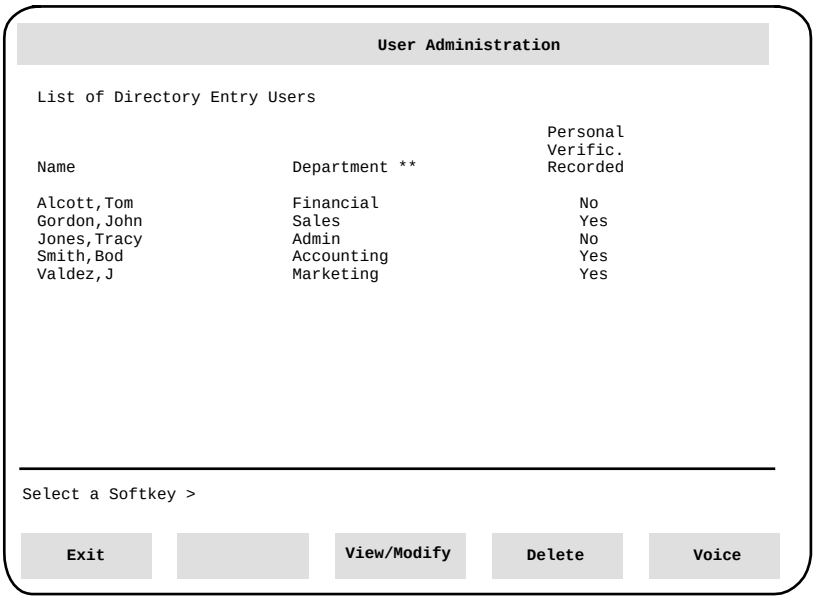
c. Press the [Voice] softkey.

The recording softkeys are displayed. Refer to the section "Recording personal verifications using the [V oice] softkey" on page 7-40.

The List of Directory Entry Users screen

The List of Directory Entry Users screen (Figure 7-16) is displayed when you choose to list users from the Find Directory Entry Users screen.

Figure 7-16
The List of Directory Entry Users screen



* This field is displayed only if MMUI is installed..
* The department column only appears if this is an MMUI customer group.

The following information is displayed for each directory entry user:

- ***Name*** This is the user's last name followed by the first name.
- ***Department*** (MMUI only) This is the name of the department to which the user belongs.
- ***Personal Verific Recorded*** This field indicates whether or not a spoken name (personal verification) has been recorded for this user.

Printing a list of directory entry users

The results of your search can also be printed. Instead of using the [List] softkey on the Find Directory Entry Users screen, use the [Print] softkey.

Procedure 7-18
Printing a list of directory entry users

Starting point: The Find Directory Entry Users screen

1 Fill in the screen with the required search parameters.

2 Press the [Print] softkey.

Two new softkeys are displayed: [Continue Printing] and [Cancel Printing].

3 Press [Continue Printing] to send the results to the printer.

See Figure 7-17 for an example of the printer output.

Press [Cancel Printing] at any time to cancel the print job.

Figure 7-17
Print directory entry users output

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List of Directory Entry Users

                                                      Personal
                                                      Verific.
Name                        Department **             Recorded

Alcott,Tom                  Financial                    No
Gordon,John                 Sales                        Yes
Jones,Tracy                 Admin                        No
Smith,Bod                   Accounting                   Yes
Valdez,J                    Marketing                    Yes

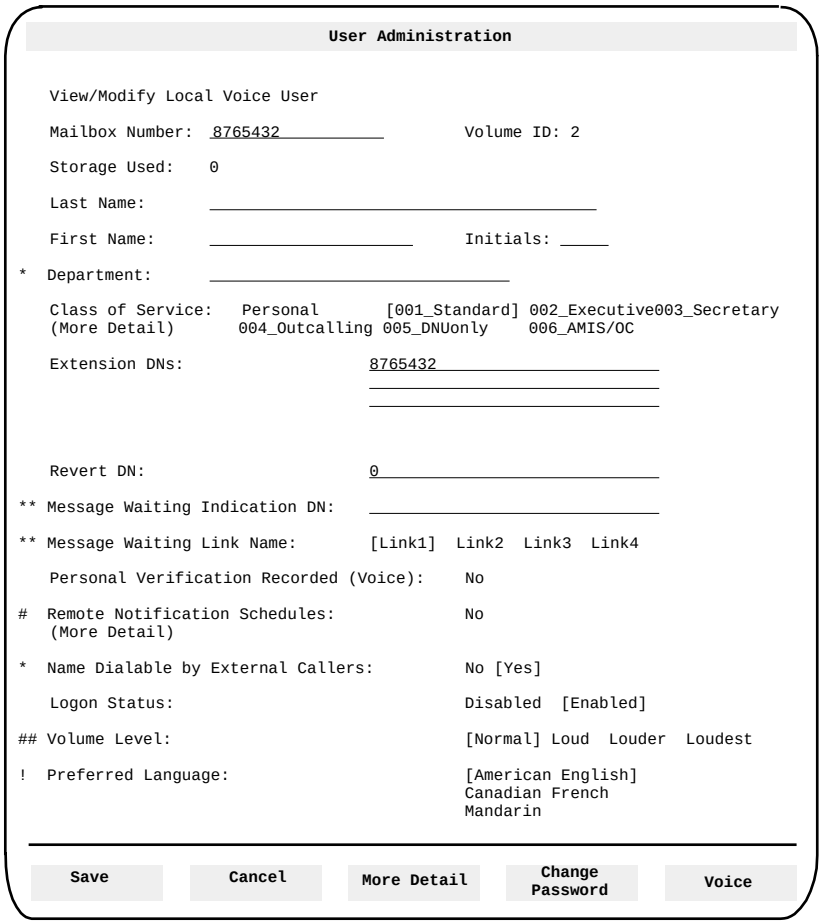
*    This column is displayed only if MMUI is installed.
```

Viewing and modifying local voice users

Use the View/Modify Local Voice User screen to change the parameters of an existing local voice user. This screen contains the same fields as the Add Local Voice User screen except that a number of additional fields, shown in Figure 7-18, are displayed at the bottom of the screen.

CAUTION
Risk of corrupted messages
If you must change a local voice user's last name once the mailbox has been added and put in use, do not modify the *Last Name* field in the View/Modify Local Voice User screen. Instead, make sure the user has listened to all of his or her messages, delete the mailbox, and add it again with the new last name. Meridian Mail uses the user's last name to keep track of users, mailboxes, and messages. Modifying the *Last Name* field can cause inconsistencies.

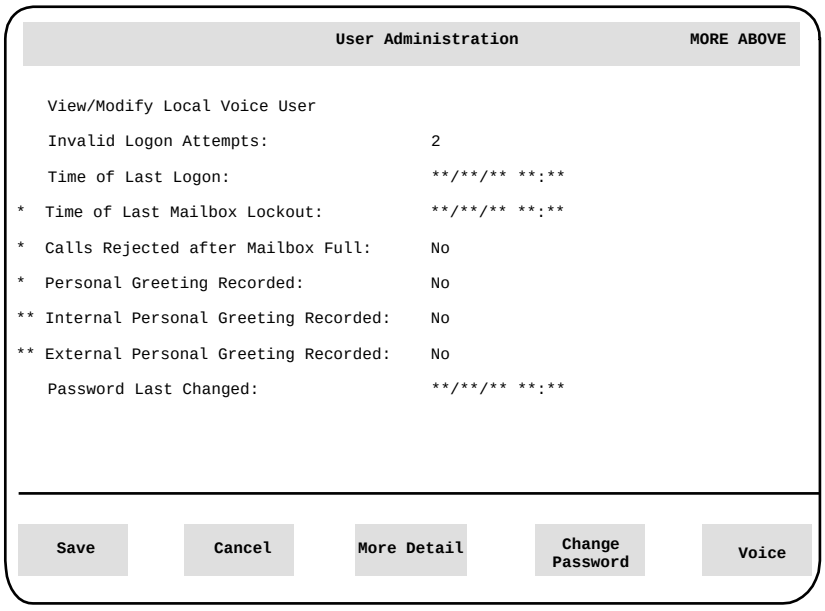
Figure 7-18
The View/Modify Local Voice User screen



* These fields are displayed only if MMUI is installed.
** These fields are displayed only if the MWI option is not set to None in the selected COS.
\# This field is displayed only if Outcalling is installed and Remote Notification Capability is set to Yes in the selected COS.
\#\# This field is displayed only if VMUIF is installed.
! This field is displayed only on multilingual systems.

Figure continued on next page

Figure 7-18 (continued)
Additional fields in the View/Modify Local Voice User screen



* These fields are displayed only if VMUIF is installed.
** These fields are displayed only if MMUI is installed.

Note: If you have logged on to a terminal while another administrator is modifying the same user, only the [Exit] and [More Detail] softkeys will be

See the section "Adding local voice users" on page 7-9 for most field descriptions. Descriptions for additional fields (as shown in the second part of Figure 7-18) are provided as follows:

- ***Invalid Logon Attempts*** This is a read-only field displaying the number of successive logon attempts using an incorrect password. When the maximum number of invalid logon attempts is reached, the user's mailbox is disabled. (There are two fields in Voice Security Options which limit the number of invalid logon attempts. The default is 3 for the maximum number of invalid logon attempts permitted per session and 9 for the maximum number permitted per mailbox.)

A large number of invalid logon attempts or a lower but persistent count may indicate a security problem. For example, someone may be trying to get into your system through this particular mailbox. Or, the owner of the mailbox may have simply forgotten his or her password and tried a variety of passwords. You should speak with the mailbox owner to determine what the problem might be. If you are convinced that there is no security risk, reenable the mailbox by setting the *Logon Status* field to "Enabled". This action resets the *Invalid Logon Attempts* field to 0.

- ***Time of Last Logon*** This is a read-only field displaying the time of the last successful logon. In the case of a new user who has not logged on yet, the field will display "**/**/** **:**".

  A considerable amount of time between the current date and the user's last logon could indicate one of several things. For example, the user may be on holiday or off-site and not retrieving messages; the user may have left the organization; the user may not know how to log on and retrieve messages; the user may have forgotten his or her password (in which case he or she may have stopped trying to log on and has not contacted the administrator to change the mailbox password). Try to contact the user to determine if there is a problem. You might also want to check the voice messaging user usage report (described in the "Operational measurements" chapter) to see if the user has messages waiting.

- ***Time of Last Mailbox Lockout*** (VMUIF only) This is a read-only field that displays the time of the last mailbox lockout. This is usually due to an excessive number of invalid logon attempts. To reenable a disabled mailbox, set the *Mailbox Status* field to Enabled.

- ***Calls Rejected after Mailbox Full*** (VMUIF only) "Yes" indicates that calls have been lost for this user. No either indicates that the mailbox is not full or that the mailbox is full, but no calls have been rejected.

  You may never actually see this field set to Yes because when the user logs on, this field is reset to No. When a user logs on after messages have been lost, he or she will hear a message indicating that the mailbox is full and that messages have been lost. In turn, the user may inform you of lost messages. Ask the user to delete messages if this has not already been done.

If a subscriber complains about lost messages, you can reassign him or her to another class of service that has a larger voice storage limit. However, if many subscribers are losing calls, you might want to consider manipulating the following fields in the class of service to which they belong:

- *Voice Storage Limit*
- *Maximum Call Answering Message Length*
- *Maximum Message Length*
- *Maximum Personal Greeting Length*
- *Read Message Retention*

- ***Personal Greeting Recorded*** (VMUIF only) This is a read-only field which indicates whether or not the user has a recorded personal greeting.
- ***Internal Personal Greeting Recorded*** (MMUI only) This is a read-only field. It indicates whether or not an internal personal greeting has been recorded by the user. This greeting is played to callers that have reached the user from a line inside the switch. This greeting should normally be recorded by the user from his or her phone so that it is in the user's own voice and because this greeting may change on a fairly regular basis.

  If the internal greeting is not recorded, the external greeting (if recorded) is played to internal callers. If neither an internal greeting or external greeting is recorded, the following standard system greeting is played to callers if the user's personal verification is recorded: *"<Personal verification> is not available to take your call. Please leave a message after the tone or press zero for assistance."* If the personal verification is not recorded, callers hear *"The person at extension xxxx ..."*.

  This greeting is typically less formal than the external greeting and can include information that is not appropriate to external callers. For example, *"Hi, this is David. I'm not at my desk right now, so please leave a message after the tone. If this is an urgent matter, you can find me at Brian's desk."*

- ***External Personal Greeting Recorded*** (MMUI only) This is a read-only field. It indicates whether or not an external personal greeting has been recorded by the user. This greeting is played to callers who reach the user's mailbox from an outside trunk. This greeting will also be played to internal callers if an internal greeting has not been recorded. The external greeting message is usually more formal than the internal greeting. This greeting should normally be recorded by the user from his or her phone so that it is in the user's own voice and because this greeting may change on a fairly regular basis.

  If the external greeting is not recorded, the following standard system greeting is played to external callers (or internal callers if the internal greeting is also not recorded): *"<Personal verification> is not available to take your call. Please leave a message after the tone or press zero for assistance."* If a personal verification has not been recorded, callers hear *"The person at extension xxxx ..."* instead. This system greeting is also played to internal callers if neither the internal or external greeting is recorded.

- ***Password Last Changed*** This is a read-only field displaying the date and time of the last password change. For new MMUI users, this is the time at which the user was added. (If VMUIF is installed, this field is set to "nil" for new users.)

  If the MMUI interface is installed on the system, there is a maximum imposed on the number of days permitted between password changes. This value is set in the Voice Security Options screen. If this maximum is exceeded, the user will have to change their password the next time they log on.

Procedure 7-19
Viewing and modifying local voice users

Starting point: The Main Menu

1 Select User Administration.

2 Select Local Voice User.

3 Press the [View/Modify] softkey if you know the user's mailbox number or [Find] to retrieve a user according to some other search criteria (such as name, department, and so on.)

If you select [View/Modify], you are prompted to enter a mailbox number. Go to step 4.

If you select [Find], the Find Local V oice Users screen is displayed. See the section "Finding local voice users" for details, then go to step 5 in this procedure.

4 Enter the mailbox number and press <Return>.

The View/Modify Local V oice User screen is displayed.

5 Make the necessary modifications.

6 If a personal verification has not been recorded for this user, press the [Voice] softkey.

a. Enter the extension number of the phone you will be using to record the verification.

A new set of softkeys is displayed.

b. Press the [Play] softkey to see if a verification has been recorded.

If there is no verification, or if you want to record a new one, continue with step 6c. If you do not need to rerecord the verification, go to step 6f.

c. Press the [Record] softkey.

d. At the sound of the beep, speak the user's name into the telephone handset.

e. Press the [Stop] softkey to stop recording.

f. If you are satisfied with the recording, press either [Disconnect] or [Return] to display the original softkeys.

When you use [Return], the line is not disconnected (unless you hang up the receiver). This means that if you decide to rerecord or listen to the recording, you do not have to reenter the telephone extension after pressing the [V oice] softkey.

When you use [Disconnect], the line is disconnected and if you press [Voice] to access the recording softkeys again, you will have to reenter the telephone extension.

See the section, "Recording personal verifications using the [Voice] softkey" on page 7-40 for more information about the recording softkeys.

7 If you need to change this user's password, press the [Change Password] softkey.

a. Enter the new password.

User passwords must be numeric and up to 16 digits long.

The password is not displayed as you enter it.

You are prompted to enter the password again for verification.

b. Enter the password again.

If there is a mismatch between the two passwords, return to step 7.

8 Go to step 8a to save the modified user, or 8b to cancel the changes.

a. Use [Save].

The system saves the modified user information and prompts for another mailbox number. To view or modify another user, go to step 4. If you do not want to modify any more users at this time, go to step 8b.

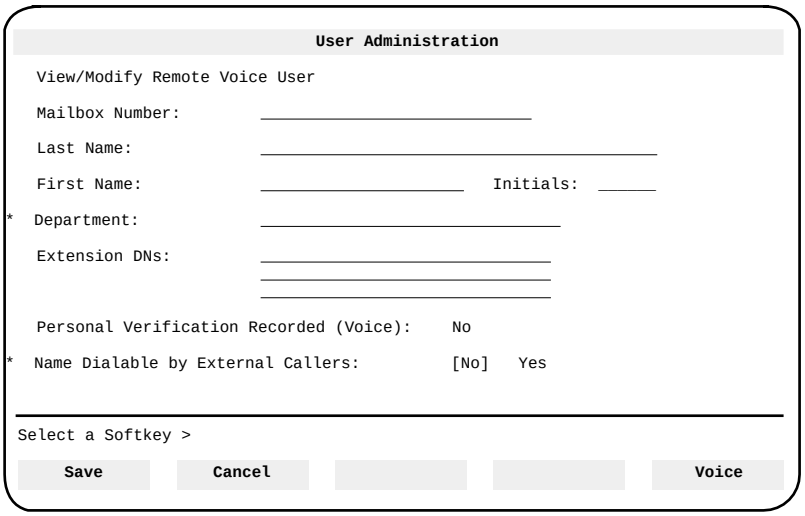
b. Use [Cancel].

Any changes you have made are discarded. The Local Voice User Administration softkeys screen is displayed.

Viewing and modifying remote voice users

Remote voice users are modified from the View/Modify Remote Voice User screen (see Figure 7-19). The fields in this screen are identical to those in the Add Remote Voice User screen. See page 7-33 for field descriptions.

Figure 7-19
The View/Modify Remote Voice User screen



* These fields are displayed only if MMUI is installed.

Procedure 7-20
Viewing and modifying remote voice users

Starting point: The Main Menu

1 Select User Administration.

2 Select Remote Voice User.

3 Press the [View/Modify] softkey if you know the user's mailbox number or [Find] to retrieve a user according to some other search criteria (such as name, department, and so on.)

If you select [View/Modify], you are prompted to enter a mailbox number. Go to step 4.

If you select [Find], the Find Remote V oice Users screen is displayed. See the section "Finding remote voice users" on page 7-51 for details, then go to step 5 in this procedure.

4 Enter the mailbox number and press <Return>.

The View/Modify Remote V oice User screen is displayed.

5 Make the required changes.

6 If a personal verification has not been recorded for this user, press the [Voice] softkey.

a. Enter the extension number of the phone you will be using to record the verification.

A new set of softkeys is displayed.

b. Press the [Play] softkey to see if a verification has been recorded.

If there is no verification, or if you want to record a new one, continue with step 6c. If you do not need to record the verification at this time, go to step 6f.

c. Press the [Record] softkey.

d. At the sound of the beep, speak the user's name into the handset.

e. Press the [Stop] softkey to stop recording.

f. If you are satisfied with the recording, press either [Disconnect] or [Return] to display the original softkeys.

When you use [Return], the line is not disconnected (unless you hang up the receiver). This means that if you decide to rerecord or listen to the recording, you do not have to reenter the telephone extension after pressing the [V oice] softkey.

When you use [Disconnect], the line is disconnected and if you press [Voice] to access the recording softkeys again, you will have to reenter the telephone extension.

See the section, "Recording personal verifications using the [Voice] softkey" on page 7-40 for more information.

7 Go to step 7a to save the modified user data, or 7b to cancel the modification.

a. Use [Save].

The system saves the modified user information. Y ou are prompted for another mailbox number . To modify another remote voice user go to step 4. If you do not need to modify any other users, go to step 7b.

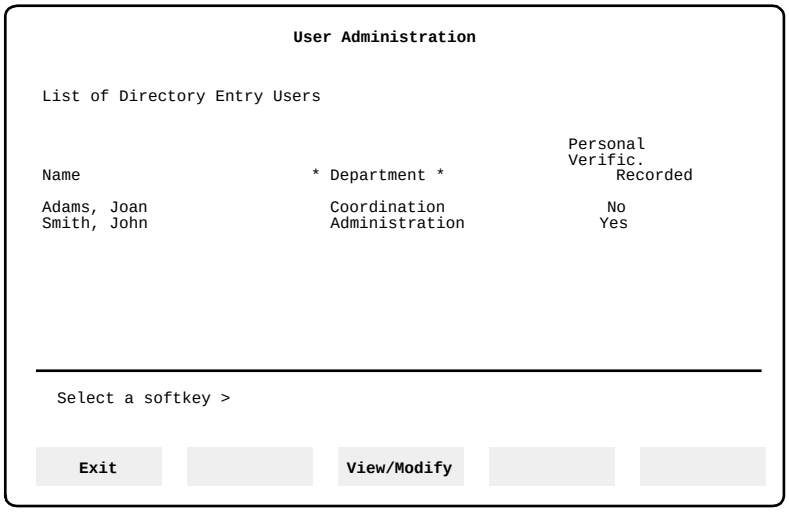
b. Use [Cancel].

Any changes that you have made are discarded. The Remote Voice User Administration softkeys screen is displayed.

Viewing and modifying directory entry users

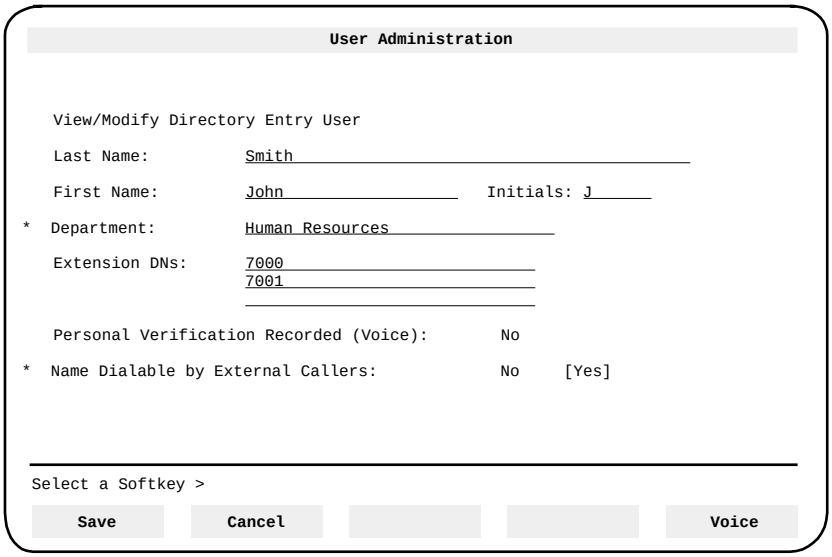
When you choose to view or modify a directory entry user, you are prompted for an extension number. If more than one directory entry user is associated with that extension you will see the List of Directory Entry Users screen (Figure 7-20). From the list of users, choose the user you want to view or modify. Once you have specified the user, the View/Modify Directory Entry User screen is displayed (Figure 7-21). If only one user is associated with the extension you enter, the View/Modify Directory Entry User screen is displayed immediately. The fields in this screen are identical to those on the Add Directory Entry User screen, described on page 7-36.

Figure 7-20
The List of Directory Entry Users screen



* This column is displayed only if MMUI is installed.

Figure 7-21
The View/Modify Directory Entry User screen



* These fields are displayed if MMUI is installed.

Note: If you have logged on to a terminal while another administrator is modifying the specified user, only the [Exit] softkey will be displayed.

Procedure 7-21
Viewing and modifying directory entry users

Starting point: The Main Menu

1 Select User Administration.

2 Select Directory Entry User.

3 Select the [View/Modify] softkey if you know the user's extension number. If you do not know it, use the [Find] softkey instead.

If you selected [View/Modify], you are prompted for an extension number. Go to step 4.

If you selected [Find], the Find Directory Entry Users screen is displayed. See page 7-56. Once you have filled in this screen and the View/Modify Directory Entry User screen is displayed, continue with step 5 in this procedure.

4 Enter the extension number.

a. If only one user is assigned to the extension number, the View/Modify Directory Entry User screen appears (Figure 7-21). Go to step 5.

b. If more than one user share the extension, the List of Directory Entry Users screen appears.

Select a user by placing the cursor on the user you want to view or modify. Press <Space Bar> to select the user and then press [View/Modify].

5 Modify the fields as needed.

6 Press the [Voice] softkey to record a personal verification, if necessary.

a. Enter the extension number of the phone you will be using to record the verification.

A new set of softkeys is displayed.

b. Press the [Record] softkey.

c. At the sound of the beep, speak the user's name into the telephone handset.

d. Press the [Stop] softkey to stop recording.

e. If you are satisfied with the recording, press either [Disconnect] or [Return] to display the original softkeys.

When you use [Return], the line is not disconnected (unless you hang up the receiver). This means that if you decide to rerecord or listen to the recording, you do not have to reenter the telephone extension after pressing the [V oice] softkey.

When you use [Disconnect], the line is disconnected and if you press [Voice] to access the recording softkeys again, you will have to reenter the telephone extension.

See the section, "Recording personal verifications using the [Voice] softkey" on page 7-40 for more information about the recording softkeys.

7 Go to step 7a to save the modified user, or 7b to cancel the modification.

a. Use [Save].

The system saves the modified directory entry user .

If only one user was associated with the entered extension, you are prompted for another extension number . (Go to step 4a to modify another user.)

If a number of users are associated with the extension you entered, the List of Directory Entry Users screen is displayed. (Go to step 4b to modify another user .)

If you do not want to modify another user at this time, go to step 7b.

b. Use [Cancel].

Any changes will be discarded. The Directory Entry User Administration softkeys screen or the List of Directory entry Users screen is displayed.

Deleting local voice users

Before deleting a user, you may want to ensure that there are no voice messages in the user's mailbox. This can be verified by checking the *Storage Used* field in the View/Modify Local Voice User screen. If there are messages remaining, you may want to make sure that the user listens to them before you delete the user.

When you delete a local voice user, the user's mailbox (including all messages), the user's personal verification, the user's personal greetings, and the user's personal distribution lists are deleted. Furthermore, any instances of this user's mailbox is automatically deleted from system distribution lists, but not from other users' personal distribution lists. In the case of personal distribution lists, users will hear a message indicating that the mailbox no longer exists when they try composing a message to a personal distribution list in which the deleted mailbox is included. To delete a local voice user, follow Procedure 7-22.

CAUTION
Risk of data loss if deleting mailboxes
User usage data is collected by the system once a day (at approximately 4:00 a.m.). If a user's mailbox is removed before user usage data is processed then the data will be lost. (See the chapter "Operational measurements.") If you require this information for billing purposes, do not delete the mailbox until the data is processed. (If you have the AdminPlus feature and file downloading capability then do not delete the mailbox until you have downloaded the data.) Instead, the mailbox should be disabled. See the description of the *Logon Status* field in the section "Viewing and modifying local voice users" earlier in this chapter. Once data is processed then you can delete the user if you wish.

Procedure 7-22
Deleting a local voice user

Starting point: The Main Menu

1 Select User Administration.

2 Select Local Voice User.

3 Press the [Delete] softkey if you know the user's mailbox number. If you do not remember the user's mailbox number, use the [Find] softkey instead to retrieve the user from a subset of users.

If you press [Delete], you are prompted for the user 's mailbox number. Enter the mailbox number.

If you press [Find], fill in the Find Local Voice User screen or press [List] to see a list of all local voice users. Once you have found the user, press the [Delete] softkey. See the section "Finding local voice users" on page 7-43 for more details.

The Delete Local Voice User screen (Figure 7-22) is displayed.

4 Choose step 4a to delete the user, or 4b to cancel.

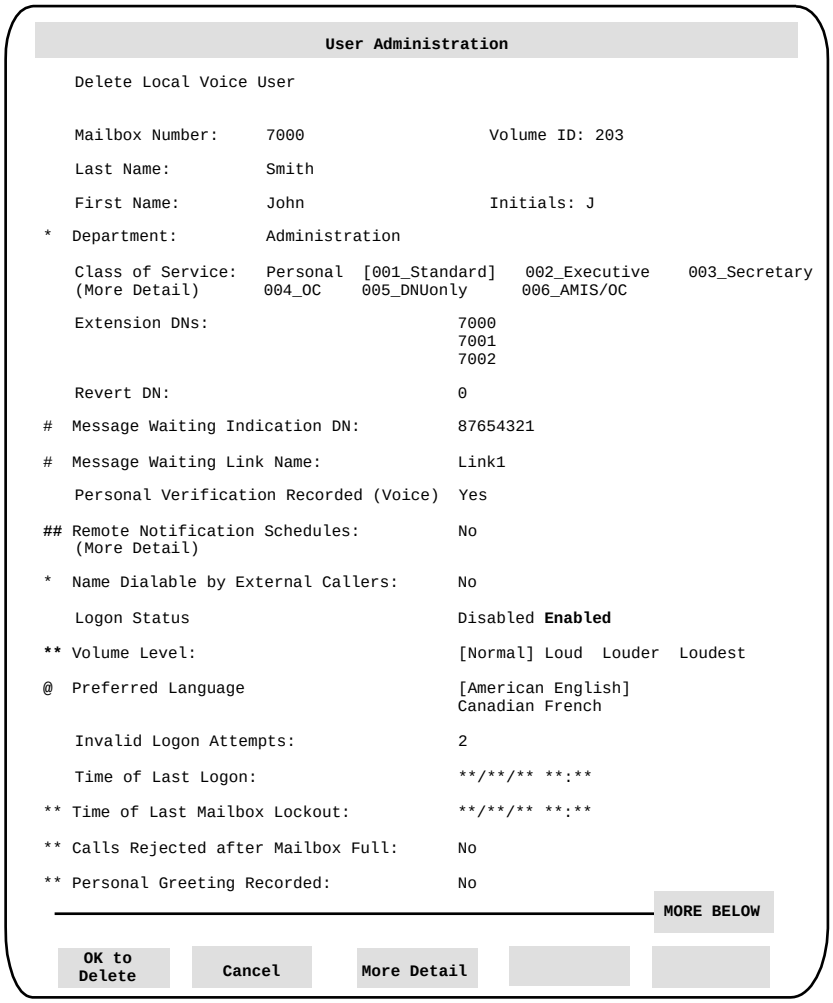
a. Use [OK to Delete].

The user is deleted and the system prompts for another mailbox number.

b. Use [Cancel].

The user is not deleted.

Figure 7-22
The Delete Local Voice User screen

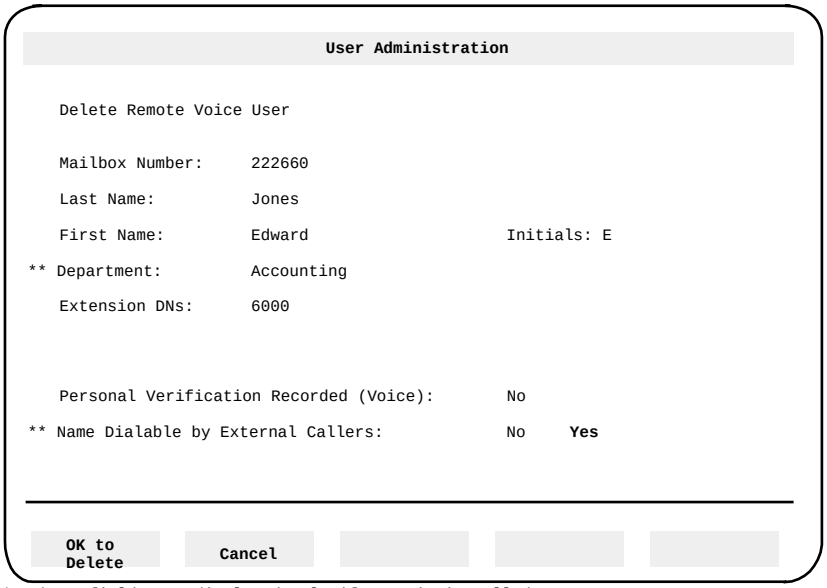


* These fields are displayed only if MMUI is installed.
** These fields are displayed only if VMUIF is installed
\# These fields are displayed only if the MWI option is not set to "None" in the selected COS.
This field is displayed only if Outcalling is installed and if Remote Notification Capability is set to "Yes" in the selected COS.
@ This field is displayed only on multilingual systems.
Note: If you have logged on to a terminal while another administrator is modifying the same user, only the [Exit] and [More Detail] softkeys are displayed.

Deleting remote voice users

Remote voice users can be removed from your system from the Delete Remote Voice User screen (Figure 7-23). When you delete a remote voice user, the personal verification (if recorded), is also deleted.

Figure 7-23
The Delete Remote Voice User screen



* These fields are displayed only if MMUI is installed.

Note: If you have logged on to a terminal while another administrator is modifying the specified user, only the [Exit] softkey will be displayed.

Procedure 7-23
Deleting remote voice users

Starting point: The Main Menu

1 Select User Administration.

2 Select Remote Voice User.

3 Press the [Delete] softkey if you know the user's mailbox number. If you do not remember the user's mailbox number, use the [Find] softkey instead to retrieve the user from a subset of users.

If you press [Delete], you are prompted for the user 's mailbox number. Enter the user's mailbox number.

If you press [Find], fill in the Find Remote Voice User screen or press [List] to see a list of all remote voice users. Once you have found the user, press the [Delete] softkey. See the section "Finding remote voice users" for more details.

The Delete Remote Voice User screen is displayed.

4 Choose step 4a to delete the user, or 4b to cancel.

a. Use [OK to Delete].

The user is deleted and the system prompts you for another mailbox number. To delete another user, enter another mailbox number. If you do not want to delete another user at this time, go to step 4b.

b. Use [Cancel].

The user is not deleted. The Delete User softkeys are displayed.

Deleting directory entry users

If you do not know the extension DN of the user you want to delete, use the find function to retrieve a subset of users from which you can select the user you want to delete.

If you know the extension DN, use the [Delete] softkey instead. You will be prompted for the extension number. If more than one directory entry user is associated with that extension you will see the List of Directory Entry Users screen (Figure 7-24).

From the list of users, choose the user you want to delete. Once you have specified the user, the Delete Directory Entry User screen is displayed (Figure 7-25). If only one user is associated with the extension you enter, the Delete Directory Entry User screen is displayed immediately. The fields in this screen are identical to those on the Add Directory Entry User screen, described on page 7-36.

When you delete a directory entry user, their personal verification is automatically deleted.

Procedure 7-24
Deleting directory entry users

Starting point: The Main Menu

1 Select User Administration.

2 Select Directory Entry User.

3 Press the [Delete] softkey if you know the user's extension DN. Press the [Find] softkey if you do not know the extension.

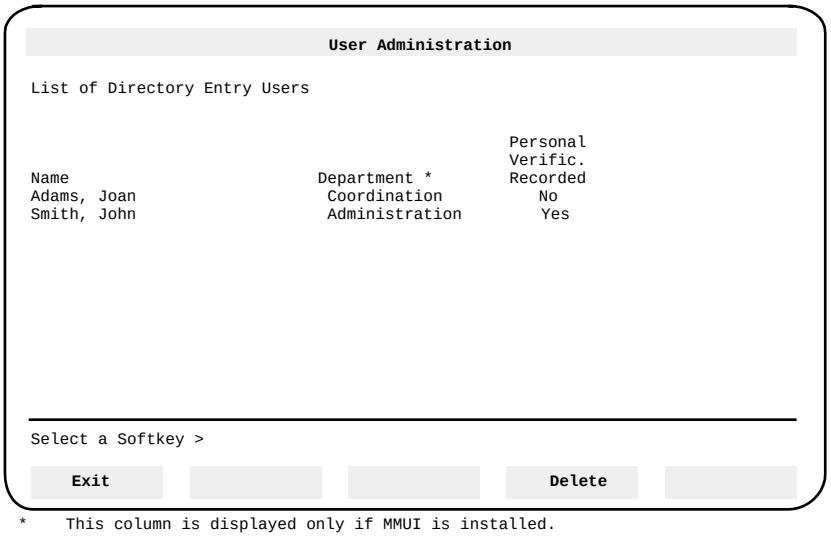
If you pressed [Delete], you are prompted for an extension number . Go to step 4.

If you pressed [Find], the Find Directory Entry Users screen is displayed. See page 7-56. Once you have retrieved the directory entry user you want to delete, continue with step 5 in this procedure.

4 Enter the extension number and press <Return>.

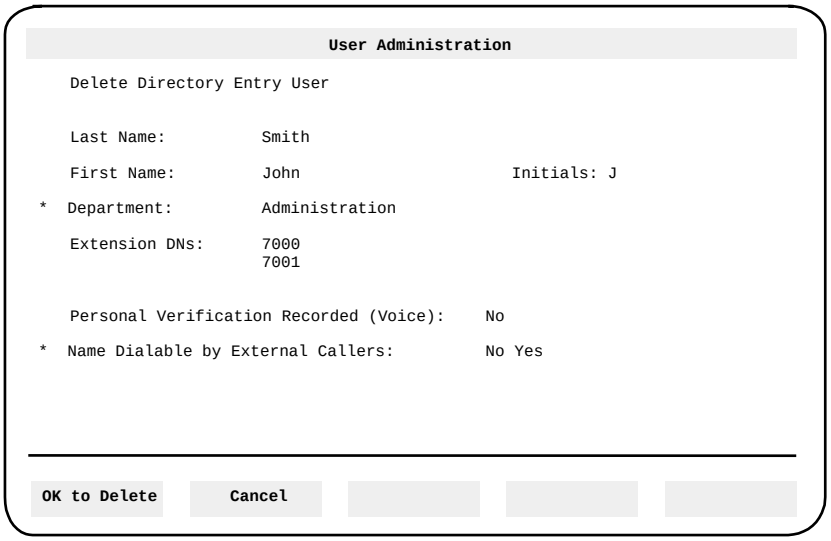
If more than one user shares the extension number , the List of Directory Entry Users screen appears (Figure 7-24). Select the required user and press [Delete]. The Delete Directory Entry User screen appears. Proceed with step 5.

Figure 7-24
The List of Directory Entry Users screen



If only one user is associated with the extension number , the Delete Directory Entry User screen appears (Figure 7-25). Proceed with step 5.

Figure 7-25
The Delete Directory Entry User screen



* These fields are displayed only if MMUI is installed.
Note: If you have logged on to a terminal while another administrator is modifying the specified distribution list, only the [Exit] softkey will be displayed.

5 Go to step 5a to delete the user. Go to step 5b to cancel.

a. Use [OK to Delete].

The user is deleted and the system prompts for another extension number. To delete another user go to step 4. If you do not want to delete another user at this time, go to step 5b.

b. Use [Cancel].

The user is not deleted.

Distribution lists

A distribution list is a collection of mailbox numbers. It allows you to send the same message to a number of people. Distribution lists are convenient and timesaving devices if you frequently have to send messages to the same group(s) of people.

To create a distribution list, you specify the mailbox numbers that should be included, assign a unique number to the list, and record a title for the list. It is recommended that you assign numbers to distribution lists that are of a different series or of a different length from those used as mailbox numbers. This will help to avoid confusion or conflict with other DNs. Although the list title is optional, it is recommended. The idea of a list title is similar to that of the personal verification. It is played when a distribution list number is entered when addressing messages. It is recommended that you record a list title, describing who is included in the list or the purpose of the list. This will make it easier to identify whether or not you have entered the correct list number when addressing messages.

When composing a message, you simply specify the distribution list number as you would any other mailbox number. When the message is sent, it is deposited in every mailbox included in the list.

There are two types of distribution lists: system distribution lists and personal distribution lists.

System distribution lists are created by the administrator through Meridian Mail User Administration. You can create any number of system distribution lists containing up to 120 entries each.

Personal distribution lists are created by users from their telephone sets. Each Meridian Mail user can create up to 9 personal distribution lists. A personal distribution list can contain up to 99 entries. There are, however, some limitations on the total number of addresses to which an outgoing message can be sent using personal distribution lists. If a user tries to send a message to a number of distribution lists, he or she may get the following message if the maximum address size of the message is exceeded: *"Your command cannot be completed at this time, please try again or contact your administrator."* The message is deleted and the user is positioned at the next message in the mailbox (or end of mailbox) and can use other commands normally.

Note: If VMUIF is installed, a personal distribution list prefix must be defined in the Voice Messaging Options screen. By default, no prefix is defined. If you want VMUIF subscribers to be able to address messages to personal distribution lists, this prefix must be defined.

The number of addresses to which a user can successfully send a message simultaneously depends on the size of the message. See the following examples:

- up to 290 addresses 99 minutes voice
- up to 350 addresses 60 minutes voice
- up to 425 addresses 10 minutes voice
- up to 440 addresses 1 minute voice

General limitations

The following restrictions are placed on distribution list numbers:

- A distribution list number must not conflict with any dialing plan prefixes or codes.

  (These are detailed further in the description of the *List Number* field on page 7-85.)

- If the system addressing length in the General Options screen is set to a value other than zero and the local addressing lengths are defined in the Voice Messaging Options screen, then a system distribution list number cannot be the same length as either of the local addressing lengths.

- A system distribution list cannot be assigned a number between 1 and 9.

  These numbers are reserved for personal distribution lists.

MMUI limitations

Distribution lists can include the following types of numbers:

- mailbox numbers of local voice users
- mailbox numbers of remote voice users

Mailbox numbers at AMIS sites cannot be added to a distribution list unless Meridian Networking is also installed and the AMIS site has been defined as a virtual node in the Meridian network. Virtual nodes are described in the

"AMIS Networking" and "Meridian Networking administration" chapters in the *Networking Services Administration Guide* (NTP 555-7001-335).

Users at remote sites in a Meridian network cannot be included in distribution lists unless they are defined as remote voice users in the local network database.

The following types of numbers do not have mailboxes associated with them and, therefore, cannot be included in a distribution list:

- numbers of directory entry users
- remote notification targets
- delivery to nonuser targets

Creating a distribution list

To add a new distribution list, follow Procedure 7-25 to access the Add Distribution List screen.

Procedure 7-25
Accessing the Add Distribution List screen

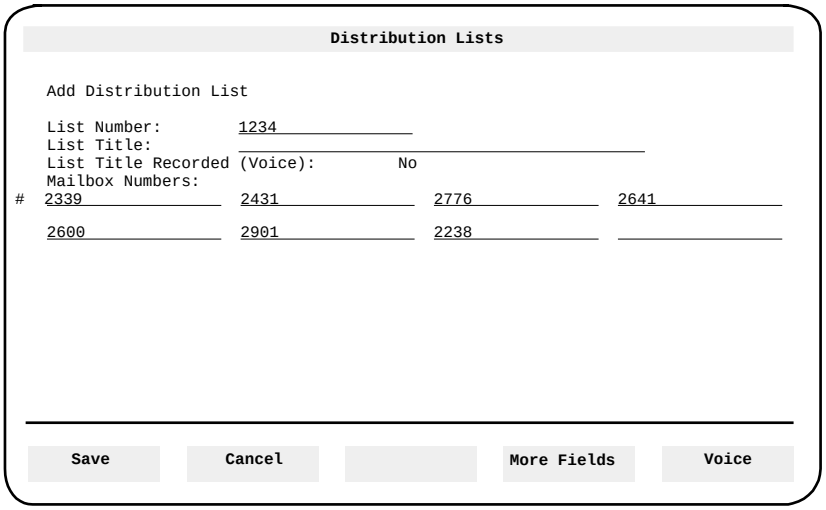
Starting point: The Main Menu

1. Select User Administration.
2. Select Distribution Lists.
3. Press the [Add] softkey.

   You are prompted for a distribution list number .
4. Enter a number that conforms to the rules described under the *List Number* field.

   The Add Distribution List screen is displayed (Figure 7-26).

Figure 7-26
The Add Distribution List screen



\# Two fields, 28 characters in length, are displayed per row (instead of 4) if Meridian Networking is installed.

The following fields are displayed.

- ***List Number*** This value uniquely identifies the distribution list. The valid range is from 10 to 999999999999999999 (only digits are allowed). The list number cannot be the same as the following numbers:
  - personal distribution list numbers (the single digits 1 to 9 are reserved)
  - any mailbox number including the broadcast mailbox number (the default is 999)
  - a directory entry user's DN

    If a distribution list and a directory entry user share the same number, the distribution list number will take precedence over a directory entry user number during compose. The message will not be sent to the directory entry user.
  - the name dialing prefix (The default prefix is 11. Do not use 11 to number a list unless you are sure that the name dialing prefix has been changed.)

- the delivery to nonuser prefix
- another distribution list number
- any dialing plan access code prefixes

- ***List Title*** This is the title of the distribution list, up to 41 characters in length. Do not use "?", "+", or "_" (underscore). This field is blank by default. This title can also be used to address the distribution list by name when composing and sending a message to the members of the distribution list.

- ***List Title Recorded (Voice)*** This read-only field indicates whether or not a list title has been recorded for this list. It is a good idea to record a title for each distribution list. This will help you to identify the list after you have entered its number when composing a message. Choose a name that uniquely identifies this list. This field can be changed only by using the [Voice] softkey to record (or delete) a list title. The default is "No".

- ***Mailbox Numbers*** Enter the mailbox numbers of the users who are to be included in the distribution list. Mailbox numbers can be up to 18 digits in length. If Meridian Networking is installed, you can enter up to 28 characters in this field. Up to 120 mailbox numbers are allowed in a distribution list. By default, these fields are blank. The [More Fields] softkey can be used to add more mailbox fields if required.

  Note: If you are adding a remote voice user to the distribution list, enter the mailbox number in network format. That is, include all necessary access codes and prefixes. For example, if the dialing plan is ESN, a valid mailbox number might be 63342337 (6 is the ESN access code; 334 is the ESN prefix, and 2337 is the local mailbox number).

Procedure 7-26
Adding a distribution list

Starting point: The Add Distribution List screen

1 Enter a name for the list in *List Title*.

2 Enter the mailbox numbers of the users you want to include in the distribution list.

If you are entering the mailbox number of a remote voice user, enter the network prefix (ESN prefix or CDP steering code), followed by the mailbox number.

You will be informed if any of the numbers you enter are invalid.

3 Use [More Fields] if you have reached the last available *Mailbox Numbers* field and wish to add more mailboxes to the list. One row of fields is drawn each time you press this softkey. Up to 120 mailboxes can be included in a list.

4 To record a list title press the [Voice] softkey.

a. Enter the extension number of the phone you will be using to record the verification.

A new set of softkeys is displayed.

b. Press the [Record] softkey.

c. At the sound of the beep, speak the list title into the telephone handset.

d. Press the [Stop] softkey to stop recording.

e. If you are satisfied with the recording, press either [Disconnect] or [Return] to display the original softkeys.

When you use [Return], the line is not disconnected (unless you hang up the receiver). This means that if you decide to rerecord or listen to the recording, you do not have to reenter the telephone extension after pressing the [V oice] softkey.

When you use [Disconnect], the line is disconnected and if you press [Voice] to access the recording softkeys again, you will have to reenter the telephone extension.

See the section, "Recording personal verifications using the [Voice] softkey" on page 7-40 for more information about the recording softkeys.

5 Choose step 5a to save the distribution list or 5b to cancel.

a. Use [Save].

The distribution list is saved; if you have created a long distribution list, it may take a few moments to save.

You are prompted to enter a number for a new distribution list. Enter a number to add another distribution list and go to step 1. Go to step 5b to exit the screen.

b. Use [Cancel].

The distribution list is not saved and you are returned to the Distribution Lists softkey screen.

Finding a distribution list

The Find function can be used to generate a list of distribution lists for record-keeping purposes, or to find a particular list or subset of lists in order to modify it (them). The List function allows you to view the distribution lists that have been retrieved on screen. From the retrieved list, you can select a distribution list in order to view it, modify it or delete it. If you want a printed copy of the distribution lists that are retrieved, use the [Print Titles] softkey to print just the titles and list numbers or the Print Entries function to print the mailboxes associated with each distribution list.

Procedure 7-27
Find a distribution list or a subset of distribution lists

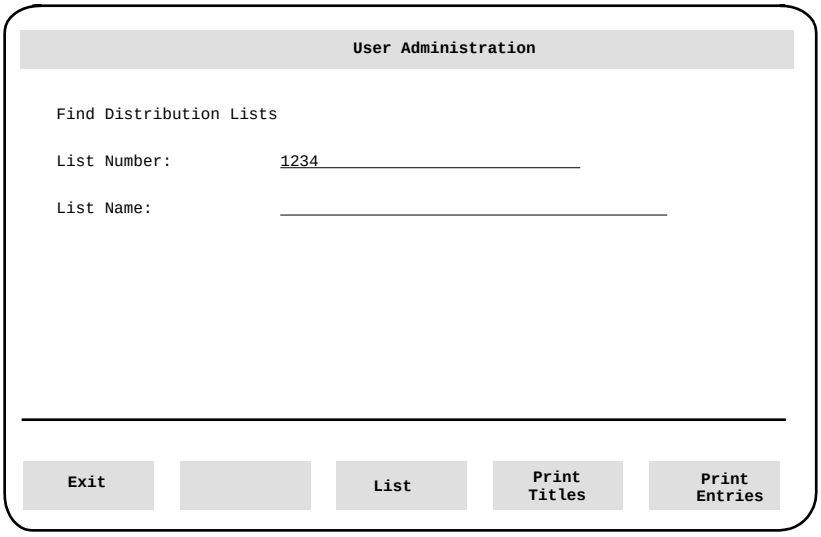
Starting point: The Main Menu

1 Select Distribution Lists.

2 Press the [Find] softkey.

The Find Distribution Lists screen (Figure 7-27) is displayed.

Figure 7-27
The Find Distribution Lists screen



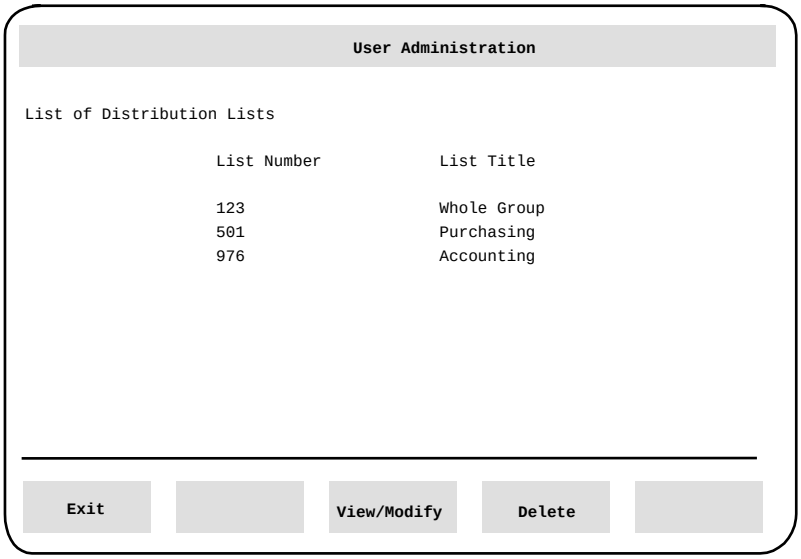
3 To retrieve a particular distribution list, enter either the complete number or name of the list. To find a subset of distribution lists, use wildcard characters to create a search pattern.

For example, to retrieve all lists beginning with 1, enter "1+". You can also use wildcard characters if you want to retrieve a particular list but cannot remember the exact number or name. To obtain a listing of all existing distribution lists, leave both fields blank.

4 To view a list of the retrieved distribution lists, press the [List] softkey.

This function allows you to view an alphabetical listing of distribution list titles. Use the list to obtain the number of an existing distribution list, if you need to modify, delete, or print it. See Figure 7-28.

Figure 7-28
The List of Distribution Lists screen



To view or modify a list, go to step 4a. To delete a list, go to step 4b.

a. To view or modify one of the retrieved lists, move the cursor to the distribution list you want to modify and press <Space bar> to select it. Then press the [View/Modify] softkey. See the following section, "Modifying a distribution list" for details.

b. To delete one of the retrieved lists, move the cursor to the distribution list you want to modify and press <Space bar> to select it. Then press the [Delete] softkey. See the section "Deleting a distribution list."

Procedure 7-28
Printing a list of distribution list titles and/or entries

Starting point: The Main Menu

1 Select Distribution Lists.

2 Press the [Find] softkey.

The Find Distribution Lists screen (Figure 7-27) is displayed.

3 To retrieve a particular distribution list, enter either the complete number or name of the list. To find a subset of distribution lists, use wildcard characters to create a search pattern. For example, to retrieve all lists beginning with 1, enter "1+". To obtain a listing of all existing distribution lists, leave both fields blank.

4 To print a list of the titles of the retrieved distribution lists, press the [Print Titles] softkey. To print a list of the entries associated with the retrieved distribution list(s), press the [Print Entries] softkey.

The following softkeys appear: [Continue Printing] and [Cancel Printing].

You are prompted to check that the printer is ready and on-line.

5 Choose step 5a to print or 5b to cancel.

a. Use [Continue Printing].

The list of distribution list titles or entries begins printing.

Once printing is complete, the List of Distribution Lists screen and its softkeys are redisplayed; you may stop printing at any time by proceeding to 5b.

b. Use [Cancel Printing].

The print operation is canceled, and you are returned to the List of Distribution Lists screen.

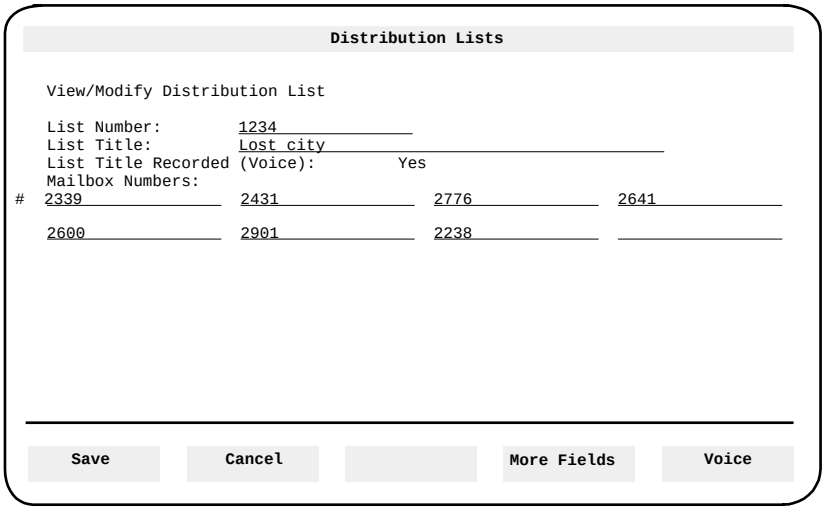
There may be some delay before control is returned to the screen because the system waits for the printer to stop.

Modifying a distribution list

The following procedure describes how to modify an existing distribution list. The fields in the View/Modify Distribution List screen are identical to the fields described in "Creating a distribution list" on page 7-84.

From this screen, you can add, modify, or delete one or more mailbox numbers from the distribution list. However, to delete all mailboxes, that is, to delete the entire distribution list, see the following section, "Deleting a distribution list," on page 7-93.

Figure 7-29
View/Modify Distribution List screen



\# Two fields, 28 characters in length, are displayed if Meridian Networking is installed.

Note: If you have logged onto a terminal while another administrator is modifying the specified distribution list, only the [Exit] softkey will be displayed.

Procedure 7-29
Modifying a distribution list

Starting point: The Main Menu

1 Select User Administration.

2 Select Distribution Lists.

The Distribution Lists softkey screen is displayed.

3 Select [View/Modify] if you know the number of the distribution list you want to view or modify.

If you do not know the number of the list, press the [Find] softkey instead. Refer to page 7-88 for more information. Then continue with step 5 in this procedure.

If you used the [View/Modify] softkey, you are prompted to enter the distribution list number.

4 Enter the list number to be modified, then press <Return>.

The View/Modify Distribution List screen is displayed. (Figure 7-29)

5 Modify the list title if necessary.

6 Change, add, or delete any mailbox numbers by using the keyboard cursor keys.

To delete an entire list, see the next section, "Deleting distribution lists."

7 Use [More Fields] if you have reached the last available mailbox number and wish to add more mailboxes to the list. Up to 120 mailboxes can be included in a list.

8 To record a list title press the [Voice] softkey.

a. Enter the extension number of the phone you will be using to record the verification.

A new set of softkeys is displayed.

b. Press the [Record] softkey.

c. At the sound of the beep, speak the list title into the telephone handset.

d. Press the [Stop] softkey to stop recording.

e. If you are satisfied with the recording, press either [Disconnect] or [Return] to display the original softkeys.

When you use [Return], the line is not disconnected (unless you hang up the receiver). This means that if you decide to rerecord or listen to the recording, you do not have to reenter the telephone extension after pressing the [Voice] softkey.

When you use [Disconnect], the line is disconnected and if you press [Voice] to access the recording softkeys again, you will have to reenter the telephone extension.

See the section, "Recording personal verifications using the [Voice] softkey" on page 7-40 for more information about the recording softkeys.

9 Choose step 9a to save the distribution list or 9b to cancel.

a. Use [Save].

The distribution list is saved. If you have modified a long distribution list, it may take a few moments to save.

You are prompted for another distribution list number . To modify another list, go to step 4. If you do not want to modify another list, go to step 9b.

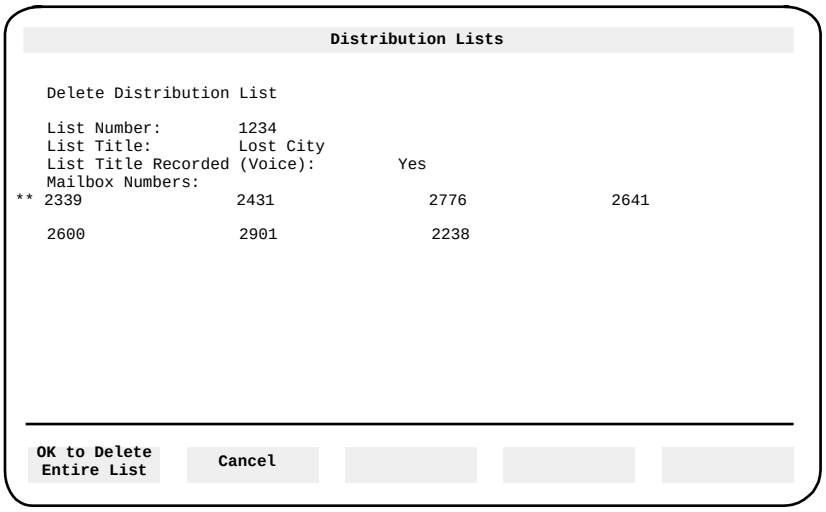
b. Use [Cancel].

You are returned to the Distribution Lists softkeys screen.

Deleting a distribution list

The Delete Distribution List screen (Figure 7-30) allows you to view a distribution list before deleting it. The fields in this screen are read-only. See "Creating a distribution list" on page 7-84 for field descriptions. (To delete mailbox numbers from a distribution list, but not the entire list, see the preceding section, "Modifying a distribution list.")

Figure 7-30
Delete Distribution List screen



** Two fields, 28 characters in length, are displayed if Meridian Networking is installed.

Note: If you have logged onto a terminal while another administrator is modifying

Procedure 7-30
Deleting a distribution list

Starting point: The Main Menu

1 Select User Administration.

2 Select Distribution Lists.

3 Press the [Delete] softkey.

You are prompted to enter the distribution list number .

If you do not know the number, use the [Find] softkey instead. This allows you to retrieve a list according to its title, or to retrieve a subset of lists. See page 7-88 for more information. Once the Delete Distribution List screen is displayed, continue with step 5 in this procedure.

4 If you used the [Delete] softkey, enter the number of the distribution list you want to delete followed by <Return>.

The Delete Distribution List screen is displayed (see Figure 7-30).

5 Choose step 5a to delete the distribution list or 5b to cancel.

a. Use [OK to Delete].

The distribution list is deleted. If you delete a long distribution list, the operation may take a few moments to complete.

You are prompted for the number of another distribution list. T o delete another list, go to step 4. If you do not want to delete another list at this time, go to step 5b.

b. Use [Cancel].

You are returned to the Distribution Lists softkeys screen.

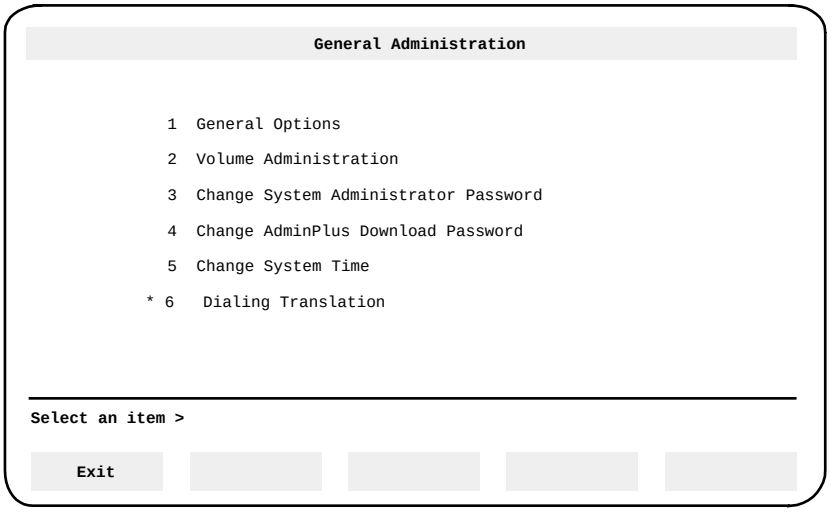
Chapter 8: General administration

The functions in the General Administration menu allow you to perform routine administrative tasks such as backups, system time changes, and administrator password changes. From this menu you can also access the General Options screen from which you can define broad system characteristics such as printer port names, the date format, and the attendant DN.

The General Administration menu

The General Administration menu displays the items shown in Figure 8-1.

Figure 8-1
The General Administration menu



* This item is displayed only if AMIS Networking and/or Fax on Demand is installed.

Procedure 8-1
Navigating the General Administration menu

Starting point: The Main Menu

6 Select General Administration.

The General Administration menu appears (Figure 8-1).

7 Choose an item by entering its number and pressing <Return>.

The menu corresponding to your selection appears.

See the following sections in this chapter for details. For information about setting up dialing translations, see the next chapter.

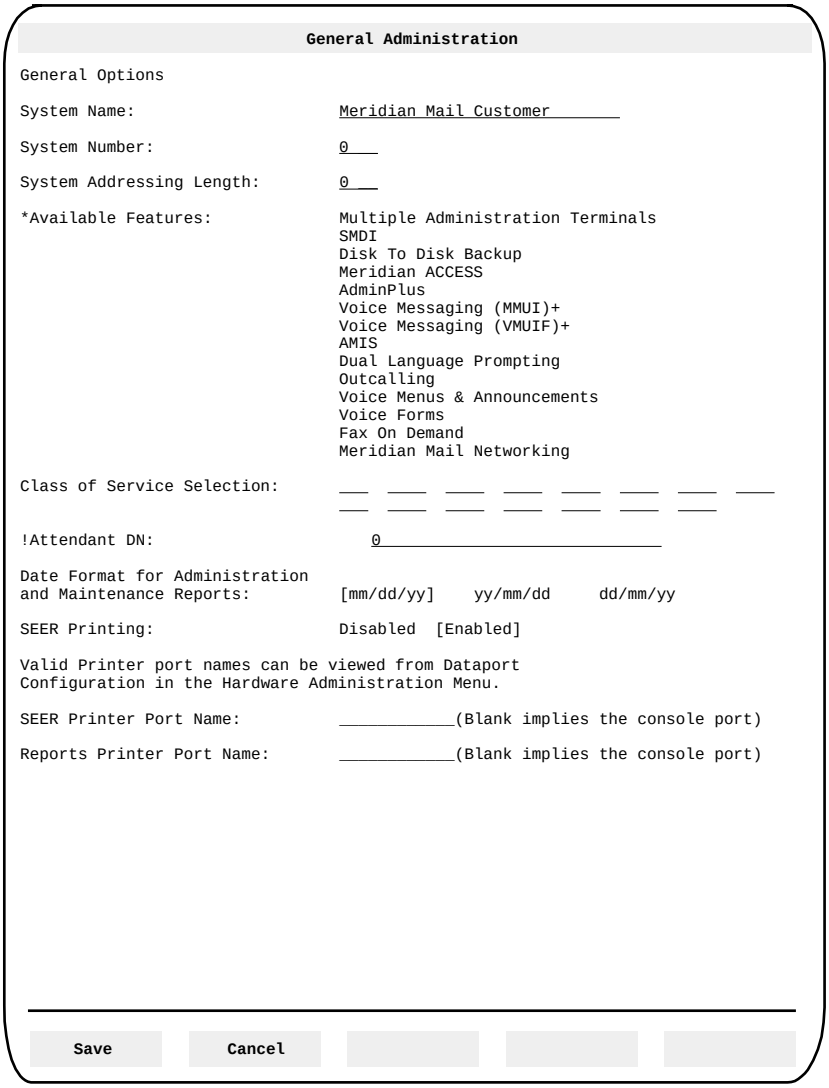
8 Use [Exit] to return to the Main Menu.

General options

The General Options screen (Figure 8-2) displays the features that are installed on the system and allows you to configure such things as the attendant DN and the date format for reports. You can also enable or disable SEER printing from this screen and specify the SEER printer port name if it is different from the console port.

Note: The Serial Number used to be displayed on the General Options screen in releases prior to Meridian Mail release 9. This has now moved to the System Record which is accessible from the tools level. The system record confirms that the installed system correctly reflects the keycode. This tool can be used to identify your system when reporting problems to field support, or when placing orders. See the *System Administration Tools Guide* (NTP 555-7001-305).

Figure 8-2
General Options screen



This field is read-only and is displayed only if VMUIF is installed.
* The features listed here are for illustration purposes. The list shows all possible features. Many of these features are optional and will only be displayed if installed on your system.
\+ These features are mutually exclusive. Only one of these features can be enabled for a customer group.
! This field is displayed for MMUI only.

The following fields are displayed:

- ***System Name*** This is the name by which Meridian Mail is identified. This name is printed on all reports and lists in Meridian Mail. You may enter a name up to 30 alphanumeric characters in length. This field defaults to the name supplied during installation.
- ***System Number*** Not applicable.
- ***System Addressing Length*** The standard in North America is 10 (nnn-xxx-yyyy, where nnn is the area code, xxx is the NXX and yyyy is the local extension. This field accepts values in the range 0-18. The default is "0".

  To enable address expansion, set this field to a value other than zero. (Zero indicates that address expansion is disabled.) This value will be the length of full mailbox numbers. Address expansion allows users to enter shorter forms of their mailbox numbers during message composition (voice messaging) or express messaging.

  This field is used in conjunction with two other fields:

  - *Local Addressing Lengths* in the Voice Messaging Options screen

    This is the length of the shorter forms of mailbox numbers. See the "Voice administration" chapter for details.

  - *Expansion Digits* (when adding VSDNs for voice messaging and express messaging in the Add DN Information screen)

    These are the digits used to expand the shorter mailbox numbers to full mailbox numbers. See the "Voice administration" chapter for details.

  For example, if address expansion is enabled, a user who wants to compose a message to local mailbox number "2335" need only enter the 4-digit local address during message addressing. The mailbox number will be expanded to the full 10-digit number (such as 416-599-2335) using the digits entered in the *Expansion Digits* field. If address expansion is not enabled, users would have to enter the full 10-digit mailbox number.

  Note: If you enter a value other than zero in this field, all mailboxes on the system will have to equal the system addressing length.

- ***Available Features*** This list displays all of the features that are installed on the system. Figure 8-2 displays a list of all possible features for illustration purposes.

  The following features are system features. These are optional features (except Voice Messaging [MMUI]) and may not all be installed on your system.

  - Multiple Administration Terminals
  - SMDI (this is the Multi-SMDI feature which provides additional connectivity capability)
  - Disk To Disk Backup
  - Meridian ACCESS (Unix Access)
  - AdminPlus

    Note: Meridian ACCESS and AdminPlus are mutually exclusive and cannot both be installed on the same system.

  - Voice Messaging (MMUI)
  - Voice Messaging (VMUIF)
  - Voice Menus & Announcements

    This feature allows you to create the following voice services: Voice Menus, Announcements, Thru-Dial services, Time-of-Day Controllers, Prompt Maintenance, and Remote Activation.

  - Voice Forms
  - Fax on Demand

    This enables a number of fax-related services: Fax Information Service, Fax Item Maintenance Service, Fax Call Back Delivery, and Fax Same Call Delivery.

  - Meridian Mail Networking (not available for VMUIF customer groups)

  To make the following features available to users, they must be enabled in the user's class of service.

  - AMIS
  - Dual Language Prompting (MMUI only)
  - Outcalling

- ***Class of Service Selection*** Assign up to 15 COSs to the system. When adding users, you will be able to assign them to one of the COSs you specify here.
- ***Attendant DN*** (MMUI only.) This field indicates the extension number to which a caller is transferred when the user's revert DN is unsuccessful or undefined. (The revert DN is defined in the Add or View/Modify Local Voice User screen. This is described in the "User administration" chapter.) The number can be up to 30 digits and may begin with the digit 0. This field may be left blank, however, it is recommended that you define this DN. The default is 0.
- ***Date Format for Administration and Maintenance Reports*** The format selected is used on reports generated by the MMI including lists of users, operational measurement reports, and SEERs. It also specifies the format used for inputting dates. The default is mm/dd/yy. (Other possibilities are yy/mm/dd and dd/mm/yy.)
- ***SEER Printing*** When this field is "Enabled", System Error and Event Reports (SEERs) are printed as events or errors occur. If you do not have a printer, disable this feature. When this field is "Enabled" and no printer is connected, SEERs are shown on the screen as they occur. More detail is given when SEERs are printed than when they are displayed on screen. The default is "Enabled".

  Even when the system is working well and few error reports are generated, many event reports are produced. This means that the SEER buffer will fill up relatively quickly. Once full, contents are automatically deleted. It is therefore recommended that you print your SEERs on a regular basis. This will also help you troubleshoot problems as you will be able to look back through system events to monitor the beginning and history of a problem. If you are going to view SEERs on screen only, do so on a daily basis as critical information can be lost within a few days.

  Note: You can also generate customized SEER reports by filling in the System Event and Error Reports screen in System Status and Maintenance. From this screen, you can view or print SEERs according to SEER class, SEER type (error, admin, system, or all), or severity level (critical, major, minor, and info). (If SEER printing is disabled, SEERs are still collected on disk and can be viewed.) See

page 12-32 in the "System status and maintenance" chapter for more information about SEERs.

- ***SEER Printer Port Name*** The printer port to which the dedicated SEER printer is connected (if installed). This requires additional data ports on an RSM card which must be defined as printer ports in the hardware database. This field holds up to 12 alphanumeric characters. If this field is left blank, reports will print to the console printer port.
- ***Reports Printer Port Name*** This field indicates the printer port to which the dedicated printer for Operational Measurement reports and general printing from the administration menus is connected (if installed). (This requires additional data ports on an RSM card which must be defined as printer ports in the hardware database.) This field holds up to 12 alphanumeric characters. If this field is blank, reports print on the console printer port.

Procedure 8-2
Modifying general options

Starting point: The Main Menu

1 Select General Administration.

2 Select General Options.

The General Options screen is displayed (see Figure 8-2 on page 8-3).

3 Use the cursor keys to move the cursor to the field you wish to modify; make the required changes.

4 Choose step 4a to save the changes, or 4b to cancel.

a. Use [Save].

The changes are saved and you are returned to the General Administration menu.

b. Use [Cancel].

Changes are not saved and you are returned to the General Administration menu.

Volume administration (tape and disk backups)

Volumes are subdivisions of the overall storage capacity of a hard disk. Volume Administration involves making backup copies of some or all of the data stored on a hard disk. If a disk fails, data can be restored from the backup so that the system can be brought back into service quickly with minimum loss of information.

You need not wait for a backup to complete before returning to other administrative menus. The backup will proceed while you perform other tasks, and notify you if the backup process requires your attention.

A Field Support representative can restore a system to the state it was in at the time of the last backup. To ensure that this recovery process is complete, you should make certain that you have on hand a complete set of backup tapes. If no backups have been kept, a complete reentry of all user and site-specific information will be required. How often you backup your data is influenced by how often changes are made to user and system information. If you make important changes to the system daily, then daily backups may be in order.

ATTENTION

Backing up

Perform backups regularly. Recovery from a system where no backups have been kept implies a complete reentry of all user and site-specific information.

Avoid backing up the system between the hours of 1:00 a.m. and 5:00 a.m. since important system audits take place during these hours.

Do not back up the system when it is operating above 50% of the rated capacity for call answering, voice messaging, and port usage. Try to choose the slowest traffic time outside of the audit hours.

For the Viper tape drive, only use 6250 tapes to perform backups.

For the Tandberg tape drive, you may use tapes of up to 2.5 Gbytes to perform backups.

Store tapes in a secure area free of electromagnetic fields; store important backup tapes off-site for added security.

Do not use Nortel software distribution tapes for backing up your system; these tapes are important in recovering from disk failures.

Do not reuse the same tapes for consecutive backups. It is recommended that you maintain at least two sets of backup tapes and that you use these sets in rotation.

Store tapes in their cases, label them clearly, and set the write protection tab (turn the rotating knob until the arrow points to safe).

Full and partial backups

There are two types of backups that can be performed: partial and full.

Partial backups

When you perform a partial backup you save the administrative configuration of the system, including the following:

- the user database
- spoken names (personal verifications)
- voice services (voice menus, voice forms, fax items)

Partial backups do not back up the following information:

- users' voice data (including voice messages and greetings)
- voice services (voice menus, voice forms, fax items) if stored on a volume other than VS1

ATTENTION

Backing up voice services

If voice services are stored on a volume other than VS1, be sure to do a full backup of that volume. (To do a full backup, choose the Voice&Data option.) To check the volume on which voice services are stored, select Voice Services Profile from the Voice Administration menu. The *Voice Services Volume* field indicates where voice services are stored.

On one and two node systems, it is recommended that you keep voice services on VS1 if possible so that they will be backed up during a partial backup. On systems with more than 2 nodes, it is recommended that you keep voice services on node 2 and then perform regular full backups of that volume. To move voice services from one volume to another, contact your Nortel technical support representative.

Restoring from a partial backup avoids the need to reenter all users. However, the voice messages and user greetings will be lost. A partial backup saves the following volumes: VS1T, VS1V, VS1B, and VS901T. See the section "Volume numbers and distribution" for a description of the various volumes.

Full backups

A full backup backs up all system data:

- the user database
- spoken names (personal verifications)
- voice services (voice menus, voice forms, fax items)
- users' voice data (including voice messages and greetings)

Normally, full backups are not done because user messages and greetings are transitory and do not warrant the extra time required to back them up. However, if the loss of messages carries financial or legal implications, weekly or even daily backups of voice data may be warranted. A full backup saves the following volumes: VS1T, VS1V, VS1B, and all the VSxT, VSxV, and VSxB volumes, where x is 2 or 202 through 205, depending on the number of nodes.

Note 1: VS1B is a temporary volume that is created during backup and is copied to tape. It is automatically deleted from disk once the backup is complete.

Note 2: If voice services are stored on a volume other than VS1, a full backup of the voice services volume is required.

Volume numbers and distribution

Meridian Mail systems can have from one to five nodes, each of which contains a hard disk drive for data storage. The hard disk drives are partitioned into volumes. Volumes are storage areas for system and user related information. The volumes are already set up when your system is installed. Table 8-1 shows the maximum amount of storage available on each volume for the various Meridian Mail configurations.

When initially setting up Meridian Mail, you must distribute Meridian Mail users over the volumes by assigning a volume number to each user - see "Distributing users over volumes" and "Adding local voice users" in the chapter "User administration.

By convention, the system volume on the first node is named VS1, and the user volume on the first node is named VS2. In three-node, four-node and five-node configurations, the disk drive on the first node contains no user volume. Volumes on nodes other than the first node are given numbers of the type "VStnnX". The first digit in the volume number, t, indicates the type of information stored on the volume:

1 system information
2 user information
9 disk-to-disk backup (if installed)

The last two digits in the volume number, nn, indicate the node number.

Each volume contains two "regions". X will either be T (for text data) or V (for voice data).

For example, VS205T refers to the text region of a user volume on node 5.

The system volume, VS1, contains the following user information:

- each user's personal verification
- organization profile
- corporate directory
- operation measurement traffic and billing data
- program software
- network database (if networking is installed)
- voice menus and announcements (if installed and stored on VS1)
- voice forms (if installed and stored on VS1)
- fax items (if Fax on Demand is installed and voice services are stored on VS1)

  Note: Voice services (voice menus, voice forms, fax items) are stored on VS1 by default. However, they can be moved to another volume if there is not enough space on VS1.

- network message queues
- voice prompts for third and fourth languages, if installed

The user volumes (VS2, VS202, VS203, VS204, VS205) can contain the following information:

- messages
- greetings
- voice services (voice menus, voice forms, fax items), which may be moved from VS1 to VS2 or VS202 if voice services require more space than is available on VS1
- user information
- voice prompts for first and second languages (on VS2 only)
- voice form responses

In single-node systems, the hard disk holds the system volume, VS1, and the user volume, VS2.

In a two-node system, the hard disk on the first node holds VS1, VS2, and backup volume VS901. The hard disk on the second node holds a user volume VS202 and a backup volume VS902. VS901 is used as a partial backup of VS202 to provide data security in the event of a disk failure on the second node; VS902 is used as a partial backup of VS2 to provide data security in the event of a disk failure on the first node.

In a three-node, four-node or five-node system, the hard disk on the first node holds VS1, VS2 for system prompts, and backup volume VS901. The hard disks on the second, third, fourth, and fifth nodes hold user volumes VS202, VS203, VS204, and VS205 respectively. VS901 is used as a partial backup of VS202, VS203, VS204, and VS205 to provide data security in the event of a disk failure on their respective nodes.

Information on disk usage can be obtained through the Disk Usage report (see the chapter "Operational measurements"). A listing of the volumes is obtained by displaying the Volume Administration screen (see Figure 8-3 on page 8-20).

Table 8-1
User disk capacities for Meridian Mail systems

System Size	Hours	Maximum hours available for voice storage (per disk volume)						
		VS1	VS2	VS202		VS203	VS204	VS205
1-node	**5**	2	5					
	11	2	11					
	24	3.5	24					
	36	3.5	36					
	54	3.5	54					
1.2 G disk (EC & ModOp)	**100**	5.5	100					
2-node	**26**	2	11	15	11			
	54	3.5	24	30	24			
	84	3.5	24	60	54			
	114	3.5	54	60	54			
1.2 G disk (EC & Mod Op)	**200**	5.5	100	100	93			
3-node	**30**	18.3		15	--	15		
	60	18.3		30	9	30		
	90	18.3		60	39	30		
	120	18.3		60	39	60		
1.2 G disk (EC & ModOp)	**200**	18.3		100	77	100		
4-node	**45**	18.3		15	--	15	15	
	90	18.3		30	8	30	30	
	120	18.3		60	38	30	30	
	180	18.3		60	38	60	60	
1.2 G disk (EC & ModOP)	**300**	18.3		100	76	100	100	
5-node	**60**	19.5		15	--	15	15	15
	120	19.5		30	6	30	30	30
	180	19.5		60	36	30	30	60
	240	19.5		60	36	60	60	60
1.2 G disk (EC & ModOp)	**400**	19.5		100	74	100	100	100

Without disk-to-disk backup

With disk-to-disk backup

1. If a second language is installed, subtract 3 hours from VS2.
2. If a third language is installed, subtract 3 hours from VS1 (6 hours if four languages).

Volumes recommended for regular backup

The following are volumes that should be backed up on a regular basis (usually weekly).

On a single-node system

- VS1 contains Voice & Data
- VS2 contains Data (unless voice services-voice menus, voice forms, fax items-are stored here, then select "V oice & Data")

On a two-node system

- VS1 contains Voice & Data
- VS2 contains Data (unless voice services-voice menus, voice forms, fax items-are stored here, then select "V oice & Data")
- VS202 contains Data (unless voice services-voice menus, voice forms, fax items-are stored here, then select "V oice & Data")

On a three-node, four-node or five-node system

- VS1 contains Voice & Data
- VS2 contains Data (unless voice services-voice menus, voice forms, fax items-are stored here, then select "V oice & Data")
- VS202 contains Data (unless voice services-voice menus, voice forms, fax items-are stored here, then select "V oice & Data")
- VS203 contains Data (unless voice services-voice menus, voice forms, fax items-are stored here, then select "V oice & Data")
- VS204 contains Data (unless voice services-voice menus, voice forms, fax items-are stored here, then select "V oice & Data")
- VS205 contains Data (unless voice services-voice menus, voice forms, fax items-are stored here, then select "V oice & Data")

Scheduling a backup

Backups should be carried out at a time when the system is relatively quiet or outside regular business hours. Do not back up the system if it is operating above 50% of the rated capacity or between the hours of 1:00 a.m. and 5:00 a.m. since important system audits take place during these hours. These audits are activated automatically at the same time every day and ensure continued operation of your system. Do not schedule a backup if more than one tape is required.

Backup media (tape and disk)

All Meridian Mail systems have a tape drive capable of reading and writing industry standard 1/4-inch data cartridges. Backups to tape can be either full or partial.

Multi-node systems have two or more disk drives, so data can be copied from one disk to another in order to allow recovery after a single disk fails. However, only partial backups can be done this way and the Disk-to-Disk Backup feature *must* be installed. Disk-to-disk backup reduces the voice message storage somewhat and sets aside some of the disk space for backup copies.

Backups to disk can be done frequently, with relatively little effort, and reduce the need for frequent and time-consuming backups to tape. However, disk-to-disk backups do not completely eliminate the need for tape backups.

CAUTION
Risk of copy failure
If a disk failure occurs in the middle of a disk to disk backup, the copy will not be consistent and recovery from the backup copy will not be possible. For this reason, disk to tape backups should also be performed periodically.

Backup tapes

MM10 introduces a new tape drive, the Tandberg TDC4220 drive. The Tandberg serves as a direct substitution for the Archive 2150 (viper) drive. For Card Option, there is an available external Tandberg tape drive.

The Tandberg reads and writes tapes with a capacity up to 2.5 Gbytes and is backwards compatible with all existing MM tapes. The new storage capacity represents a ten-fold increase of maximum storage capacity on one tape.

The Archive Viper drive supports a maximum storage capacity of 250 Mbytes. It should only be used with DC6250 tapes. The approximate number of tapes required for one full and one partial backup is listed in Table 8-3.

CAUTION
Risk of load failure
Use of 6150 tapes may cause tape load failures. 6150 tapes are no longer supported.

The following table shows the amount of time necessary to complete a variety of tape backups.

Table 8-2
Types of tape backup and time requirements

Type of backup	Archive Viper	Tandberg TDC4220
5 node (partial)	1 tape : 42 min	1 tape : 20 min
240 h (full)	10 tapes : 10.9 h	1 tape : 5.7 h
400 h (full)	16 tapes : 18.0 h	2 tapes : 9.5 h
MSM (partial)	5 tapes : 3.3 h	1 tape : 1.3 h
1200 h (full)	47 tapes : 52.9 h	5 tapes : 27.7 h

Table 8-3
Backup tape requirements and time estimates (approximate)

Configuration	1 full backup		1 partial backup	
	# Tapes	Time (hh:mm)	# Tapes	Time (hh:mm)
1 node				
5 h	1	00:45	1	00:45
11 h	1	00:45	1	00:45
24 h	2	01:30	1	00:45
36 h	2	01:30	1	00:45
54 h	3	02:15	1	00:45
100 h	5	03:45	1	00:45
2 node				
26 h	2	01:30	1	00:45
54 h	3	02:15	1	00:45
84 h	4	03:00	1	00:45
114 h	5	03:45	1	00:45
200 h	8	06:00	1	00:45
3 node				
30 h	2	01:30	1	00:45
60 h	4	03:00	1	00:45
90 h	5	03:45	1	00:45
120 h	6	04:30	1	00:45
200 h	9	06:45	1	00:45
4 node				
45 h	3	02:15	1	00:45
90 h	5	03:45	1	00:45
120 h	6	04:30	1	00:45
180 h	8	06:00	1	00:45
300 h	12	09:00	1	00:45
5 node				
60 h	3	02:15	1	00:45
120 h	5	03:45	1	00:45
180 h	8	06:00	1	00:45
240 h	10	07:30	1	00:45
400 h	16	12:00	2	01:30

Using the tape drive

Meridian Mail uses streaming tape drives which record data on multiple tracks on the tape. Each track runs from one end of the tape to the other. At the end of the tape, the tape head is positioned to the next track and the tape direction is reversed. After each block of data is written, it is read back and checked. If it cannot be correctly read, the data will be rewritten in the next block. After 16 unsuccessful attempts to write the data, a parity error is signaled and the backup fails. Such failures can be caused either by flaws in the tape or dirty tape heads. For information on cleaning the tape drive, see *Installation and Maintenance Guide* (NTP 555-70x1-250).

When using a viper tape drive, insert the tape with the metal side facing the left side of the drive and the opening on the tape facing up. Once the tape is inserted, secure it by pressing down on the lever on top of the opening until the latch catches.

Tape cartridges can be write-protected by turning the rotating knob until the arrow points to the Safe indicator. Any attempt to write on a write-protected cartridge will generate an error.

Performing backups: the Volume Administration screen

Data storage on the hard disk is distributed between volumes. Volumes are subdivisions of the hard disk. The Volume Administration screen (Figure 8-3) is used to back up the volumes. It displays all the volumes on your system, their designated use, their capacity in kilobytes and equivalent hours and minutes, and the percentage of voice and data storage currently used. To back up a volume, select it using the cursor keys and use the applicable softkey as shown in Figure 8-3.

Figure 8-3
Volume Administration screen

```
                              General Administration

Volume Administration

Volume        Use                 Volume Size                    Usage (% Full)
 Name                     Data              Voice                Data   Voice
                          (KBytes)     (KBytes)     (hh:mm)

VS1           System      129992       14976        1:51         22     3
VS202         Users       6992         576000       7:04         7      45
VS203         Users       30           200          2:00         13     23
VS204         Users       20           150          1:59         17     40

Move the cursor to the desired volumes and press the space bar to select.
    Exit        Backup to      *Backup to    Backup Status    View/Delete
                  Tape            Disk                          Schedule
```

*Softkey appears only when the Disk to Disk Backup option is installed.

Note: On one- and two-node systems, there will also be an entry for VS2.

The following fields are displayed:

- ***Volume Name*** This field indicates the name of the volume, indicating the type of data contained on the volume volume and the node on which it resides.
- ***Use*** This field indicates the type of volume. Volumes are storage areas for system-related and user-related information.
- ***Volume Size Data (KBytes)*** This field indicates the amount of storage, expressed in thousands of bytes (Kbytes), allocated for blocks of data on the volume.
- ***Volume Size Voice (KBytes)*** This field indicates the amount of storage, in Kbytes, allocated for blocks of voice data on the volume.
- ***Volume Size Voice (hh:mm)*** This field indicates the amount of storage, in hours and minutes, allocated for blocks of voice data on the volume.
- ***Usage (%Full) Data*** This field indicates the percentage of allocated data storage currently in use.

- ***Usage (%Full) Voice*** This field indicates the percentage of allocated voice storage currently in use.

Starting from the Volume Administration screen, you can perform the following backup-related functions:

- ***Backup to tape*** See the section "Disk to tape backup" in the pages that follow for details.
- ***Backup to disk*** See the section "Disk to disk backup" in the pages that follow for details.
- ***Schedule a backup*** See the section "Schedule backup" in the pages that follow for details.
- ***Check the backup status*** See the section "Backup status" in the pages that follow for details.
- ***View or delete backup schedule*** See the section "View/delete backup schedule" in the pages that follow for details.

Note: If a Parity Error (Code 114) occurs while backing up to tape, the tape may be defective or the tape drive heads may need to be cleaned.

Disk to tape backup

When a volume is selected and the [Backup to Tape] softkey on the Volume Administration screen is pressed, the Disk to Tape Backup screen (Figure 8-4) is displayed. The screen displays the volumes selected in the Volume Administration screen, and provides a set of backup options for each volume. For a partial backup, use the Data option on all of the user volumes and the Voice and Data option on VS1. For a full back up, use the Voice and Data option on all of the user volumes. The only backup option for VS1 (the system volume) is Voice and Data.

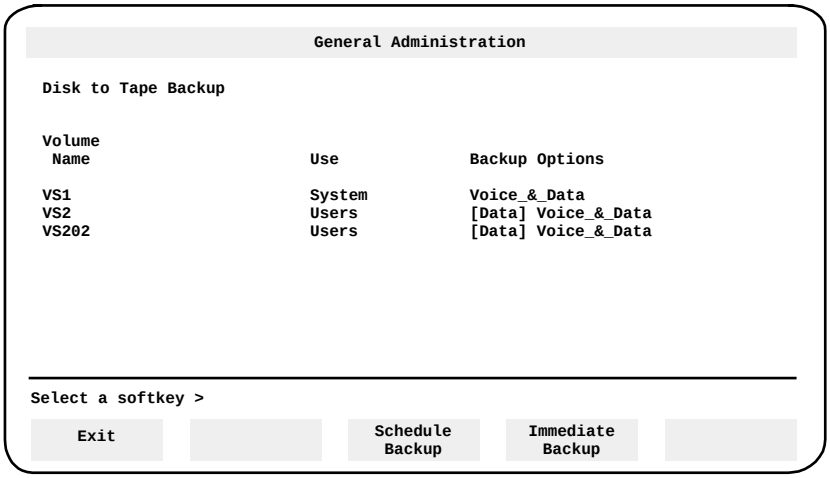
The Disk to Tape Backup screen also allows you to automate backups through the [Schedule Backup] softkey. To use this function, insert a tape in the tape drive before the scheduled backup time; the backup will proceed automatically at the specified time. You will be informed of how much data is to be copied when you schedule the backup.

> ***Note:*** Do not perform a scheduled backup to tape if more than one tape is required.

If a tape error occurs during backup, you do not have to restart the backup process from tape 1. Follow the instructions as they appear on the screen. In some instances you are required to keep the tape, as the data that was recorded is not corrupt; in other instances you will be required to discard the tape. At this stage you should clean the tape heads (as described in Appendix A, "Restore and Voice Volume Recovery") before inserting another tape cartridge.

> ***Note:*** Ensure that the tape you are using is either blank or can be overwritten.

Figure 8-4
Disk to Tape Backup screen



Procedure 8-3
Performing a disk to tape backup

Starting point: The Main Menu

1 Select General Administration.

2 Select Volume Administration.

The Volume Administration screen is displayed.

3 Position the cursor on the volume you want to back up and press the <Space Bar> to select it.

It is recommended that you back up only one volume at a time.

4 Press [Backup to Tape].

The Disk to Tape Backup screen appears (Figure 8-4).

5 Use the cursor keys to move to the Backup Options column. Select "Data" to do a partial backup. Select "Voice&Data" to do a full backup or "Data" to do a partial backup. (You can only do a full backup on VS1.)

6 Follow steps 7 and 8 to carry out a backup, or step 9 to schedule a backup for a later time, or press [Exit] to return to the Volume Administration screen.

7 To start the backup, press [Immediate Backup].

The softkey display changes to [OK to Start Backup] and [Cancel].

You are prompted to insert a tape in the tape drive. Insert the tape with the metal side to the left and the window that opens on top.

You are also told approximately how much data (in megabytes) will be backed up.

8 Press [OK to Start Backup] to initiate the backup or [Cancel] to return to the Disk to Tape Backup screen.

Before the backup proceeds, the tape is automatically retentioned.

Once a backup is started, the Backup Status screen appears; see "Backup Status" later in this chapter for details.

If a tape is filled, the following message appears:

"Tape x (x is the tape number) completed. Insert new tape and press Continue Backup softkey."

***Note 1**:* A tape may still be rewinding even if the message on the screen indicates that the tape is completed. Do not remove the tape from the tape drive until it has finished rewinding.

Note 2: If there is a tape error during backup, one of the following messages appears:

"Keep tape and insert tape number n"

where "n" is the number of the tape, or

"Discard tape and insert tape number n"

To continue the backup, remove the tape from the drive and insert a new tape. Press the [Continue Backup] softkey. Keep the tape that contains the error.

Note 3: If you are working in another screen while a tape backup is in progress, the following message appears:

"In progress backup requires new tape." Go to the Backup Status screen and use the softkeys as indicated in the next paragraph.

To continue the backup, press [Continue Backup]. To cancel the backup, use [Abort Backup]. You are returned to the Volume Administration screen.

Note 4: When a backup is completed, remove the tape and label it clearly; include the current date and time, tape number, and the volumes which were backed up.

Press [Abort Backup] to stop a backup from proceeding; you are returned to the Volume Administration screen.

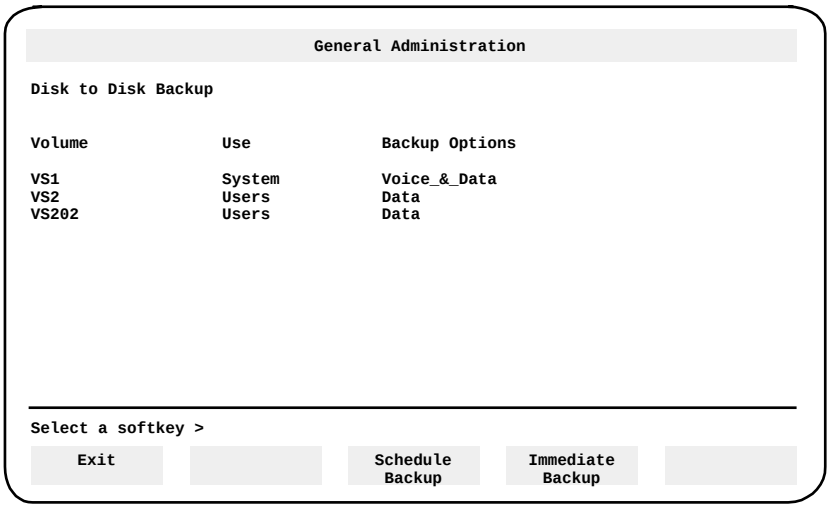
9 Press [Schedule Backup].

See the section "Schedule backup" for details.

Disk to disk backup

Using the [Backup to Disk] softkey in the Volume Administration screen displays the Disk to Disk Backup screen (Figure 8-5). The Disk to Disk Backup screen is similar to the Disk to Tape Backup screen, but the disk to disk backup options are read-only, and the "Voice & Data" backup option is not allowed for user volumes. This screen also allows you to automate the backup procedure through the [Schedule Backup] softkey.

Figure 8-5
Disk to Disk Backup



Procedure 8-4
Performing a disk to disk backup

Starting point: The Main Menu

1. Select General Administration.
2. Select Volume Administration.

   The Volume Administration screen is displayed.
3. Position the cursor on the volume you want to back up and press the <Space Bar> to select it.

   It is recommended that you do not back up more than one volume at a time.
4. Press [Backup to Disk].

   The Disk to Disk Backup screen appears (Figure 8-5).

5 Choose step 5a to carry out a backup at this time or 5b to schedule a backup for a later time.

a. Use [Immediate Backup].

The softkey display changes to [OK to Start Backup] and [Cancel].

Use [OK to Start Backup] to initiate the backup or [Cancel] to return to the Disk to Disk Backup screen. Once a backup is started, the Backup Status screen appears; see the section "Backup Status" for details.

b. Use [Schedule Backup].

See the following section, "Schedule backup", for details.

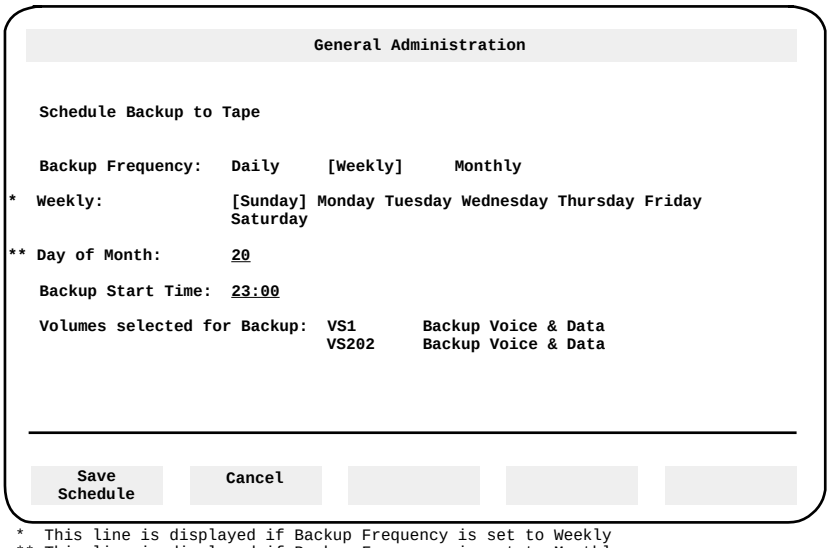
6 Use [Exit] at any time to return to the Volume Administration screen.

Schedule backup

The [Schedule Backup] softkey in the Disk to Disk Backup or Disk to Tape Backup screen displays the Schedule Backup screen (Figure 8-6). This screen allows you to set the backup frequency (daily, weekly, or monthly) and start time. Once you have saved the backup schedule, backups proceed at the specified day and time. Return to this screen to make any necessary modifications to the existing backup schedule.

Note: Do not schedule backups between 1:00 a.m. and 5:00 a.m. when important system audits occur. Do not schedule a backup if more than one tape is required.

Figure 8-6
Schedule Backup screen



* This line is displayed if Backup Frequency is set to Weekly
** This line is displayed if Backup Frequency is set to Monthly.

Procedure 8-5
Creating a backup schedule

Starting point: The Main Menu

1 Select General Administration.

2 Select Volume Administration.

The Volume Administration screen is displayed.

3 Position the cursor on the volume you want to back up and press the <Space Bar> to select it.

4 Press [Backup to Tape] or [Backup to Disk].

5 Press [Schedule Backup].

6 Move the cursor to the required backup frequency (daily, weekly or monthly) and press <Return>.

For weekly backups, the screen displays the days of the week; choose the day on which backups are to occur .

For monthly backups, the screen displays a prompt for the date on which backups are to occur; enter the required date.

7 Enter the backup start time.

8 Choose step 8a to save the schedule or 8b to cancel.

a. Use [Save Schedule].

The schedule is saved and you are returned to the V olume Administration screen; automatic backups are now in effect.

b. Use [Cancel].

You are returned to the V olume Administration screen.

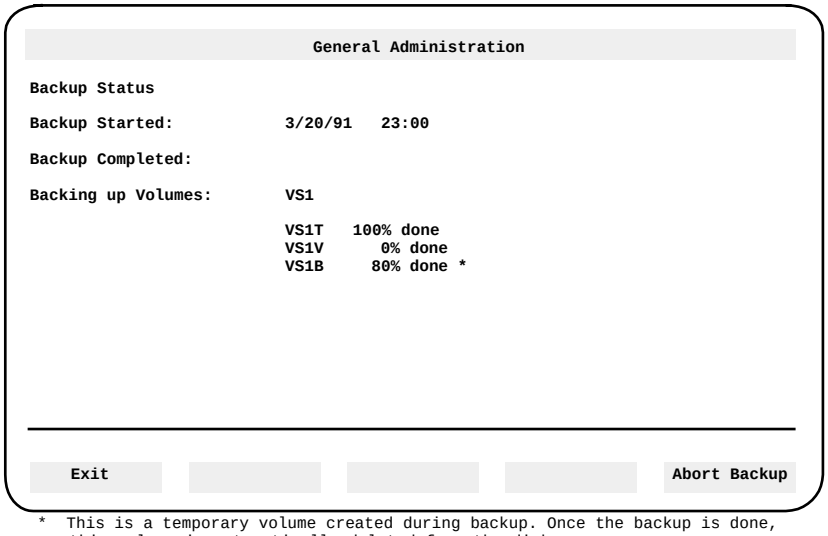
Backup status

The Backup Status screen (Figure 8-7) displays the current status of a backup, if one is in progress. The screen displays the time at which the backup started, the volumes to be backed up, and the current progress on each volume.

If you want to check the status of a backup that is in progress, you can access this screen from the Volume Administration screen using the [Backup Status] softkey. This screen is also displayed when you press the [OK to Start Backup] softkey.

If you are performing a partial backup (Data) of a volume, there is an intermediary step in the process which will be reported in the status screen. VS901T is used as a partial backup of VS202T, VS203T, VS204T, and VS205T. Text files are first copied to VS901T and then they are copied from VS901T to tape. While files are being copied to VS901T, the tape drive will be inactive. For example, if you are doing a partial backup of VS202T, the status of VS202T will be reported as the files are copied to VS901T. The tape will only start to move once VS901T begins copying to tape. As VS901T is being copied, its status (percentage complete) will be reported.

Figure 8-7
Backup Status screen



* This is a temporary volume created during backup. Once the backup is done, this volume is automatically deleted from the disk.

Procedure 8-6
Displaying the status of the current backup from the Volume Administration screen

Starting point: The Main Menu

1 Select General Administration.

2 Select Volume Administration.

The Volume Administration screen is displayed.

3 Press [Backup Status].

4 Choose step 4a to stop a backup in progress or 4b to return.

a. Use [Abort Backup].

The backup is stopped and for backup to tape, the tape is rewound.

The Volume Administration screen is redisplayed.

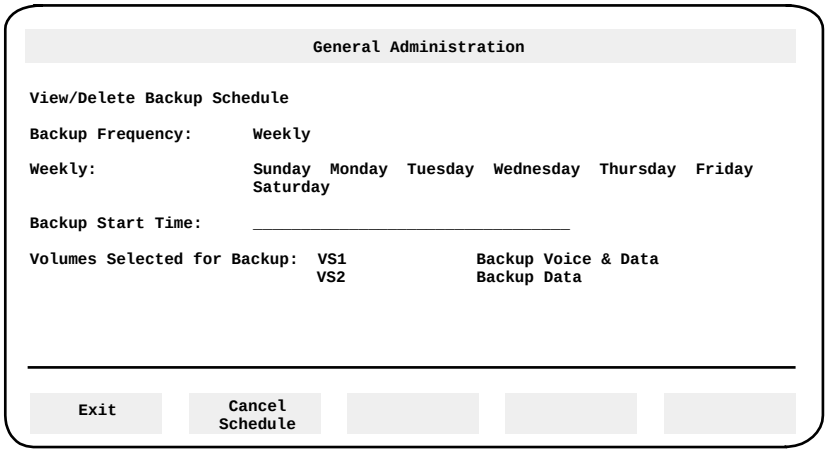
b. Use [Exit].

The Volume Administration screen is redisplayed and the backup continues.

View/delete backup schedule

The View/Delete Backup Schedule screen (Figure 8-8) displays the current schedule for backups, if one exists. The screen is read-only and displays the current settings of the backup schedule, including the type of backup (to disk or to tape), how frequently backups are performed, the start time, the volumes to be backed up, and the backup options for each volume.

Figure 8-8
View/Delete Backup Schedule



Procedure 8-7
Viewing/deleting backup schedules

Starting point: The Main Menu

1. Select General Administration.
2. Select Volume Administration.

   The Volume Administration screen is displayed.
3. Press [View/Delete Schedule].
4. Choose step 4a to return to the Volume Administration screen or 4b to delete a schedule.
   a. Use [Exit].

      The Volume Administration screen is redisplayed.
   b. Use [Cancel Schedule].

      The present schedule is deleted. The V olume Administration screen is displayed.

Tape drive maintenance

Preventive maintenance of the tape drive involves periodic cleaning (after every four to six hours of use). To ensure reliable tape drive performance, you should establish a regular cleaning schedule and observe the following precautions:

- Maintain a clean, dust-free environment within the temperature and humidity limits listed in the specifications of the Meridian Mail system.
- Keep all liquids away from the drive and tapes to prevent spills into the equipment.
- Exercise reasonable care when using and storing tape cartridges. Do not place cartridges on the Meridian Mail or Meridian 1 cabinets, or on the monitor of the system administrator's terminal.
- When a stored tape is moved to an environment with a greatly different temperature, allow the tape to slowly reach room temperature before using it.
- Do not open the cartridge access door to touch the tape.

Cleaning the tape drive

The tape drive should be replaced when you receive repeated errors when attempting to write to tape. You should also consider replacing the tape drive if the light on the front of the tape drive is out or you cannot hear or see the tape spinning.

The tape cartridge cavity should be cleaned after an initial pass with a new tape cartridge, after eight hours of normal use, or whenever dust or debris is visible inside the cartridge cavity.

To clean the tape drive, you need the following supplies:

- low pressure aerosol air
- tapehead cleaning fluid or reagent grade chemically-pure isopropyl alcohol
- tape drive cleaning kit (A0378220) including a tape drive cleaning cartridge, OR
- tapehead cleaning pads, lint-free cotton swabs, or any industry-acceptable head-cleaning swabs, six inches or longer

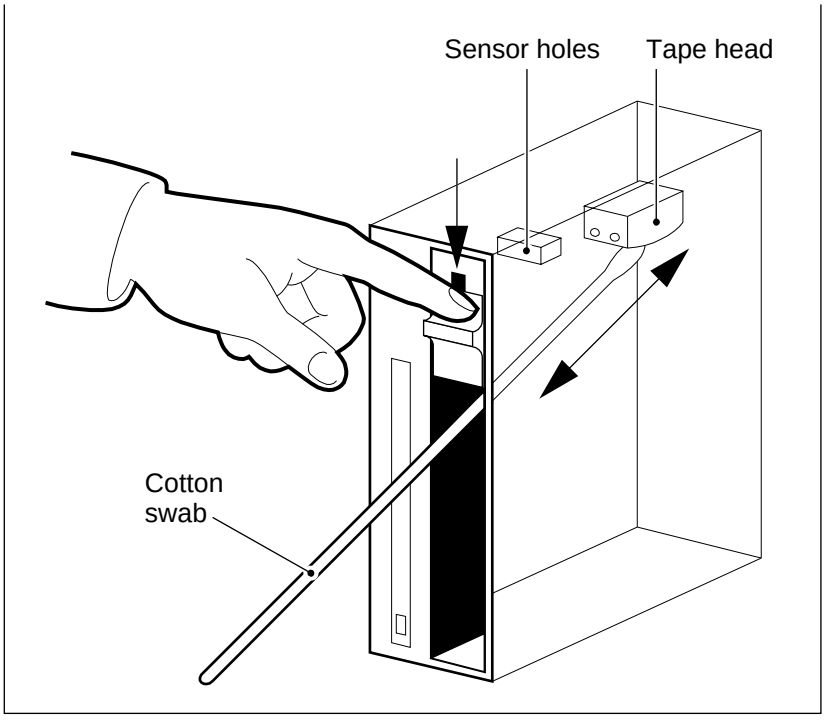
Procedure 8-8
Cleaning the tape drive with a tape drive cleaning kit (Tandberg or Viper)

1. If there is a tape cartridge in the tape drive, remove the cartridge.
2. Push the head loading lever down into the load position.
3. Carefully blow out dust from the sensor hole and tape cartridge cavity with aerosol air. Release the head loading lever.
4. Moisten the flexible pad of the cleaning cartridge with 4 drops of the Streaming Tape Head Cleaning Fluid.
5. Insert the cleaning cartridge into the tape drive in the same way as a normal tape cartridge and lock into position.
6. Move the moistened pad using 4 strokes of the guide rod, moving the rod as far as it will go each time.
7. Remove the cleaning cartridge from the tape drive.
8. Remove the flexible pad by sliding it out of the holder. Discard the pad.
9. Insert a new, dry pad into the holder by sliding it into place.
10. Insert the cleaning cartridge into the tape drive and lock into place.
11. Move the dry pad using 4 strokes of the guide rod, moving the rod as far as it will go each time.
12. Remove the cleaning cartridge. Store it with the dry pad in its original carton until next use.

Procedure 8-9
Cleaning the tape drive with swabs and fluid (Viper only)

1. If there is a tape cartridge in the tape drive, remove the cartridge.
2. Push the head loading lever down into the load position.
3. Carefully blow out dust from the sensor hole and tape cartridge cavity with aerosol air. (Refer to Figure 8-9 for the Viper tape drive.)
4. Moisten a pad or swab with the head-cleaning fluid until it is saturated but not dripping.

Figure 8-9
Cleaning the Viper tape drive



5 Carefully wipe the head in the direction that the tape travels. (Refer to Figure 8-9). *Do not* wipe perpendicularly or use a circular scrubbing motion. This could seriously damage the tape heads.

6 DIscard the used swab and repeat steps 4 and 5 with new swabs until the swab shows no signs of dirt.

7 Use a new dry swab to remove any remaining cleaning fluid from the head.

8 Allow 2 minutes for the tape head to dry before inserting a tape.

9 Release the head loading lever away from the load position. If there was a tape cartridge in the tape drive, reinsert it.

Changing the system administrator password

When the system is first installed, you are given a default system administrator password (adminpwd). When you log on for the first time using this default password, you are prompted for a new password. You should continue to change the password on a regular basis. Passwords are not case-sensitive; any capitalization used in defining the password need not be used when entering the password. The minimum password length is one (character). The maximum length is 16 characters. It is recommended that your administration password be at least 7 characters for added security. The longer the password, the better.

Procedure 8-10
Changing the administrator password

Starting point: The Main Menu

1. Select General Administration.
2. Select Change System Administrator Password.

   You are prompted to enter the existing administrator password.
3. Enter the existing password.

   ***Note:** The passwords are not displayed on the screen as you enter them.*
4. You are prompted to enter the new password.
5. Enter the new password.

   The system administrator password is alphanumeric (it can contain both letters and numbers).
6. You are prompted to enter the new password again for verification purposes.

   The new password is recorded and you are returned to the General Administration menu.

Changing the AdminPlus download password

This option allows the administrator to set and change the AdminPlus download password. Every file transfer request is permitted only if it contains the password which has been set using this option.

This menu item is only displayed on systems with the AdminPlus feature installed.

> ***Note:*** This menu item is not displayed in the General Administration menu at the customer level on multi-customer systems.

Procedure 8-11
Changing the AdminPlus download password

Starting point: The Main Menu

1. Select General Administration.
2. Select Change AdminPlus Password.

   You are prompted to enter the existing system administrator password.
3. Enter the existing system administrator password.

   Note: *The passwords are not displayed on the screen as you enter them.*
4. You are prompted to enter the new password.
5. Enter the new password.

   The AdminPlus download password is alphanumeric (it can contain both letters and numbers).
6. You are prompted to enter the new password again for verification purposes.

   The new password is recorded and you are returned to the General Administration menu.

Changing the system time

The setting of the system clock in your Meridian Mail system should be accurate to keep correct records of events in your system (such as message creation and reception times or system event and error times). Because the DMS-10, DMS-100 and SL-100 do not inform Meridian Mail of their own times, you will have to change the system time once Meridian Mail is installed and up and running.

Procedure 8-12
Changing the system time

Starting point: The Main Menu

1. Select General Administration.
2. Select Change System Time.

   You are prompted to enter the date and time.
3. Enter the date and time, followed by <Return>.

   The clock is synchronized to the clocking signals from the network, the time is recorded, and the General Administration screen is redisplayed.

Chapter 9: Setting up dialing translations

Who needs to read this chapter

The configuration procedures described in this chapter are applicable only if one (or both) of the following features is installed:

- AMIS networking
- Fax on Demand (using callback delivery)

Overview

This chapter describes how the information entered in the following screens is used by Meridian Mail to generate dialable DNs for fax callback delivery and AMIS networking.

The two screens are

- Network Dialing Prefixes
- View/Modify Translation Table

The first screen must be configured for all systems using AMIS networking and/or Fax on Demand with callback delivery. Translation tables, however, may not be necessary for all systems, since they are intended to deal with exceptions to normal dialing procedures. These exceptions are described in detail later in this chapter.

Note: Network dialing translations are not required for outcalling (remote notification and delivery to non-user). The numbers entered are already in a dialable format and do not require translation.

The datafill of these screens will vary from one system to the next since they reflect the particular system's exchange codes, surrounding area codes, and network dialing access codes.

Translations for Fax on Demand

In the case of Fax on Demand, these prefixes and translation tables are used to convert callback numbers that are entered by callers requesting faxes into DNs that are dialable from your system.

For example, if a caller requests that a fax be sent to 212-555-1345 (a long distance number), this number must be translated into a DN that can be dialed from your system. In this case, the dialable DN must include the long distance dialing prefix. If your system dials "91" to place long distance calls, then the resulting DN will be 91-212-555-1345.

Translations for AMIS networking

In the case of AMIS networking, these prefixes and translation tables are used when a local user uses the Reply feature to respond to an AMIS message that he or she has received. The phone number of the originator of the AMIS message is contained in the header. However, to be able to send a message (the reply) to this number, Meridian Mail must translate it into a number that is dialable from the local system.

Network dialing prefixes

The Network Dialing Prefixes screen must be filled in if one or both of AMIS networking and Fax on Demand are installed. The Network Dialing Prefixes screen is divided into two areas:

- Default Prefixes for Network Dialing

  This is where you specify the network access codes that are used by your system for placing local calls, long distance calls and international calls. These prefixes are needed to generate dialable DNs from

  - fax callback numbers
  - numbers contained in the headers of AMIS messages (so that local users can reply to AMIS messages)

- Codes to Access Local Site

  This is where you enter the country code and area/city code of your Meridian Mail site. These codes are used to determine if the country and/or area/city code entered by a caller needs to be stripped out.

In a Fax on Demand application, for example, a caller includes the country code and area/city code in the callback number he or she has entered. Meridian Mail checks this screen to see if the country and area/city codes specified in the callback number match the codes of the Meridian Mail system. If there is a match, the country and area/city codes are not required for dialing purposes and are stripped out.

For example, a caller enters 214-555-1212 as a callback number. The area/city code (214) is the same as the Meridian Mail system's. This code is, therefore, not needed to dial the number. Meridian Mail strips out the 214, gets the network dialing prefix for local dialing (9) and generates the following dialable DN: 9-555-1212.

Translation tables

Translation tables will not be required by all systems. These tables are intended to handle certain dialing exceptions. For example, in a normal local dialing scenario, the NPA (area/city code) of the calling site is the same as the called site. An exception to this rule is that the NPAs are different but the call is still considered local.

If any of the following four exceptions apply to your system, you will have to define a translation table for every type of exception:

- local dialing to a different NPA (NPA required in DN)
- local dialing to a different NPA (NPA *not* required in DN)
- long distance dialing to the same NPA (NPA required in DN)
- long distance dialing to the same NPA (NPA *not* required in DN)

In all other dialing scenarios (such as long distance dialing to a different NPA and local dialing to the same NPA), the network dialing prefixes are used instead.

Meridian Mail applies these translation tables before checking restriction/permission lists. For example, a call to another NPA is considered local, and the restriction/permission list applied to a Fax on Demand application only allows local calls. If a translation table is not set up for this exceptional dialing scenario, the system will assume that the callback number is long distance (because the NPA is different from the local site) and Meridian Mail will not deliver the fax (since the restriction/permission list does not allow delivery to long distance numbers).

Detailed descriptions and sample translation tables are provided for each of these exceptions beginning on page 9-36.

Restrictions

To prevent AMIS networking messages and fax items from being sent to unauthorized numbers, you will have to be sure to set up restrictions in the DMS/SL-100 and in Meridian Mail.

> **ATTENTION**
>
> **Placing restrictions on calls**
>
> Network prefixes, access codes, and translation tables are not used for restricting calls to certain area/city codes or numbers. Restrictions must be set up in the switch and/or in the Voice Security Options screen in Meridian Mail.

Restriction/permission codes are defined in the Voice Security Options screen. Up to four restriction/permission sets or tables can be created in this screen and then applied to different features, including AMIS networking and Fax on Demand. This means that you can apply one restriction/permission set to AMIS networking and another set to Fax on Demand. You can apply the same set to both features.

Procedure 9-1 outlines the steps involved in assigning restriction/permission codes to AMIS networking and Fax on Demand. This procedure is by no means complete. You should refer to the appropriate sections for detailed instructions and additional information. For AMIS networking, see the section "Selecting restriction/permission codes" in the chapter "Class of service administration" for details. For Fax on Demand, see the section "The session profile" in the "Voice administration" chapter for more information (or see the *Fax on Demand Application Guide* [NTP 555-7001-327] for more information about the Fax on Demand service).

> ***Note:*** If certain prefixes are allowed in Meridian Mail, but not allowed by the switch (DMS/SL-100), the switch setting will override the Meridian Mail setting and the call will be blocked.

Procedure 9-1
Setting up restrictions in Meridian Mail

Starting point: The Main Menu

1 Select Voice Administration.

2 Select Voice Security Options.

3 Check the defined restriction/permission sets and determine which set is applicable to AMIS and Fax on Demand.

4 Return to the Main Menu.

5 To apply a restriction/permission set to AMIS networking

a. Select Class of Service Administration.

b. Select [Add] to add a new class of service, or [View/Modify] to modify an existing class of service.

c. Move the cursor to the *AMIS Restriction/Permission Codes* field.

d. Select one of the four available restriction/permission sets.

6 To apply a restriction/permission set to the Fax Information Service

a. Return to the Main Menu.

b. Select Voice Administration.

c. Select Voice Services Administration.

d. Select Voice Services-DN Table.

e. Press [Add] to add a DN or [View/Modify] to modify an existing DN.

If you are adding a DN, specify the Access DN. Enter FI (fax information service) in the Service field.

f. Move the cursor to the Session Profile field and select a session profile.

If you select the Custom profile, you will be able to change the restriction/permission set if necessary . If you selected any other profile, a default restriction/permission set will be applied and you will not be able to change it. Only custom session profiles can be modified.

How network dialing prefixes and translation tables work

This section describes

- how Fax on Demand and AMIS collect DN digits (input to translation process)
- how the collected DN is translated (translation process)

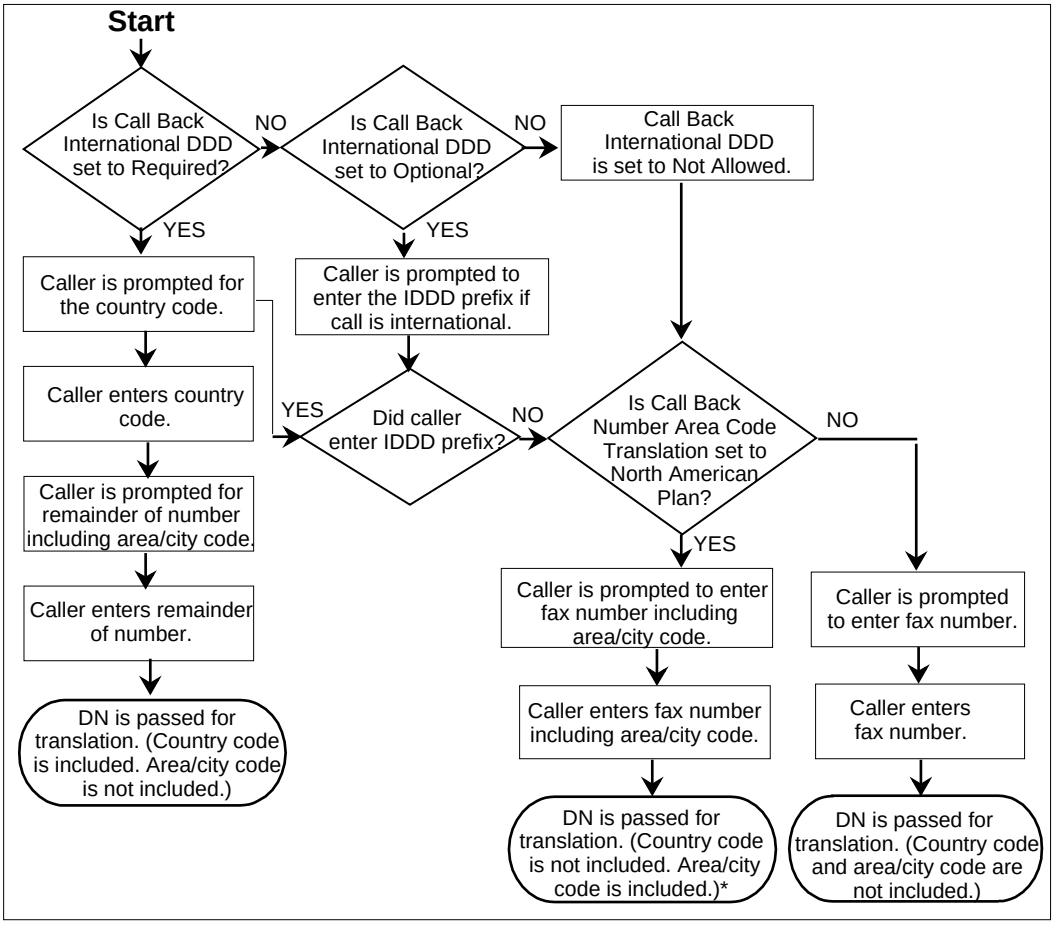
- what happens to the translated DN (output from translation process)

This information will help you to troubleshoot the translation process if Fax on Demand and/or AMIS are not working as expected.

How Fax on Demand collects digits

The way in which a callback number is collected depends on how the *Call Back International DDD* and *Call Back Area Code Translation* fields in the session profile of the Fax on Demand VSDN are set. Figure 1 shows how digits are collected from a caller based on these settings.

Figure 9-1
Digit collection by Fax on Demand



* In this scenario, the first 3 digits of the number are broken out as the area/city code.

As this flowchart shows, a country code will be entered by the caller if *Call Back International DDD* is set to Required (in which case a country code must be entered) or Optional and the caller entered the IDDD prefix.

The way in which the entered callback DN is treated by Fax on Demand depends on whether or not a country code is included as part of the DN. If there is no country code in the DN and the North American dialing plan is being used, then Fax on Demand breaks out the first three digits entered by the caller and interprets them as the area/city code. However, if a country

code is included in the entered DN, then Fax on Demand will not break out the area code. Instead, the area/city code plus the local number are treated as a whole.

> ***Note:*** This means that if a caller enters a country code, it is not possible to have the area/city code broken out, even if the *Call Back Number Area Code Translation* field is set to "North American Plan". The implications of this are made clear by the following example.

Example:

A system is located in Toronto, North America. The session profile is configured so that *Call Back International DDD* is set to Required and *Call Back Number Area Code Translation* is set to North American Plan. A caller in North America dials into the fax application and enters the country code (1 for North America, which is the same as the system's country code). The caller then enters the rest of the number (214-555-1234, for example). The entered number is passed for translation with a country code only. No area/city code is included in the DN that is passed. Therefore, no translation tables are consulted (since they are set up for specific area codes). In this example, the default network dialing prefix (9 for example) is prepended to the entered DN. This results in the translated DN 9-214-555-1234. If the area code 214 is long distance and is only dialable by 91-214-555-1234, the fax cannot be sent. See Figure 2 for a flowchart of the translation process that shows why the default network dialing prefix is prepended to the number.

As the previous example illustrates, the Required option is intended for fax applications that will be used by international callers only. You should not publish a number to callers with the same country code as the system's if the session profile for that DN has *Call Back International DDD* set to Required. Note that the translated DN will also be nondialable if *Call Back International DDD* is set to Optional and a caller enters the IDDD prefix and a country code that matches the system's country code.

Table 1 summarizes whether or not the country code is part of the DN and whether or not the area/city code is broken out from the entered DN depending on how the *Call Back International DDD* and *Call Back Number Area Code Translation* fields are set in the session profile.

Table 9-1
Fax on Demand: fields present in a DN passed for dialing translation

Session Profile Field Values		Fields Specified in DN	
Call Back International DDD	**Call Back Number Area Code Translation**	**Country Code**	**Area/City Code**
Required or Optional and country code entered with IDDD prefix	"None" or "North American Plan"	Yes	No
Not Allowed or	None	No	No
Optional, but country code not entered	North American Plan	No	Yes

Special considerations for Fax Item Maintenance

The Fax Item Maintenance service always collects digits for the number to be dialed without any country code or area/city code. This applies to the verification fax number, either as entered by the caller or datafilled in the *Verification Fax Number* field in the Fax Item Definition screen.

Since DNs collected by Fax Item Maintenance are considered to have no country code or area /city code, the translation will prepend the default network dialing prefix to the entered number (as shown in Figure 2).

This means that the following numbers generally cannot be used as the verification fax number (unless the default network dialing prefix does generate a dialable DN):

- local switch extensions

  For example, if a caller enters 1234 and the network dialing prefix is 9, the translated DN would be 9-1234, a nondialable number. Local switch extensions can only be used if the default network dialing prefix is null.

- private network numbers

  For example, if a caller enters 6-343-1234 and the network dialing prefix is 9, the translated DN would be 9-6-343-1234, a nondialable number. Private network numbers can only be used if the default network dialing prefix is null.

- long distance numbers if the network dialing prefix is not a subset of the long distance dialing prefix (for example, the network dialing prefix is 9 and the long distance dialing prefix is 8)

  For example, a caller enters a long distance number on the public network, such as 214-343-1234. The network dialing prefix is 9 and the long distance dialing prefix is 8. The translated DN would be 9-214-343-1234, a nondialable DN. (The dialable DN would be 8-214-343-1234.)

  However, if the network dialing prefix is a subset of the long distance dialing prefix, then this scenario will work. For example, in some parts of North America, the network dialing prefix is 9 and the long distance dialing prefix is 91. If the caller enters the DN 1-214-343-1234, the translated DN would be 9-1-214-343-1234, a dialable DN.

It is, therefore, recommended that local DID numbers be used as fax verification numbers. For example, if 555-3433 is an internal DID number, when the system prepends the network dialing prefix of 9, the translated DN will be dialable (9-555-3433).

How AMIS handles digits

The way in which AMIS handles digits is much simpler than the way it is done in Fax on Demand since digits are not entered by a caller, but instead are determined by reading the header of an AMIS message which has been sent to a local user from a remote AMIS site.

Note that Table 9-2 indicates that even though a country code is part of the DN, the area/city code is broken out (unlike Fax on Demand where the area/city code is not broken out if a country code has been entered as part of the callback DN).

Table 9-2
AMIS: fields present in a DN passed for dialing translation

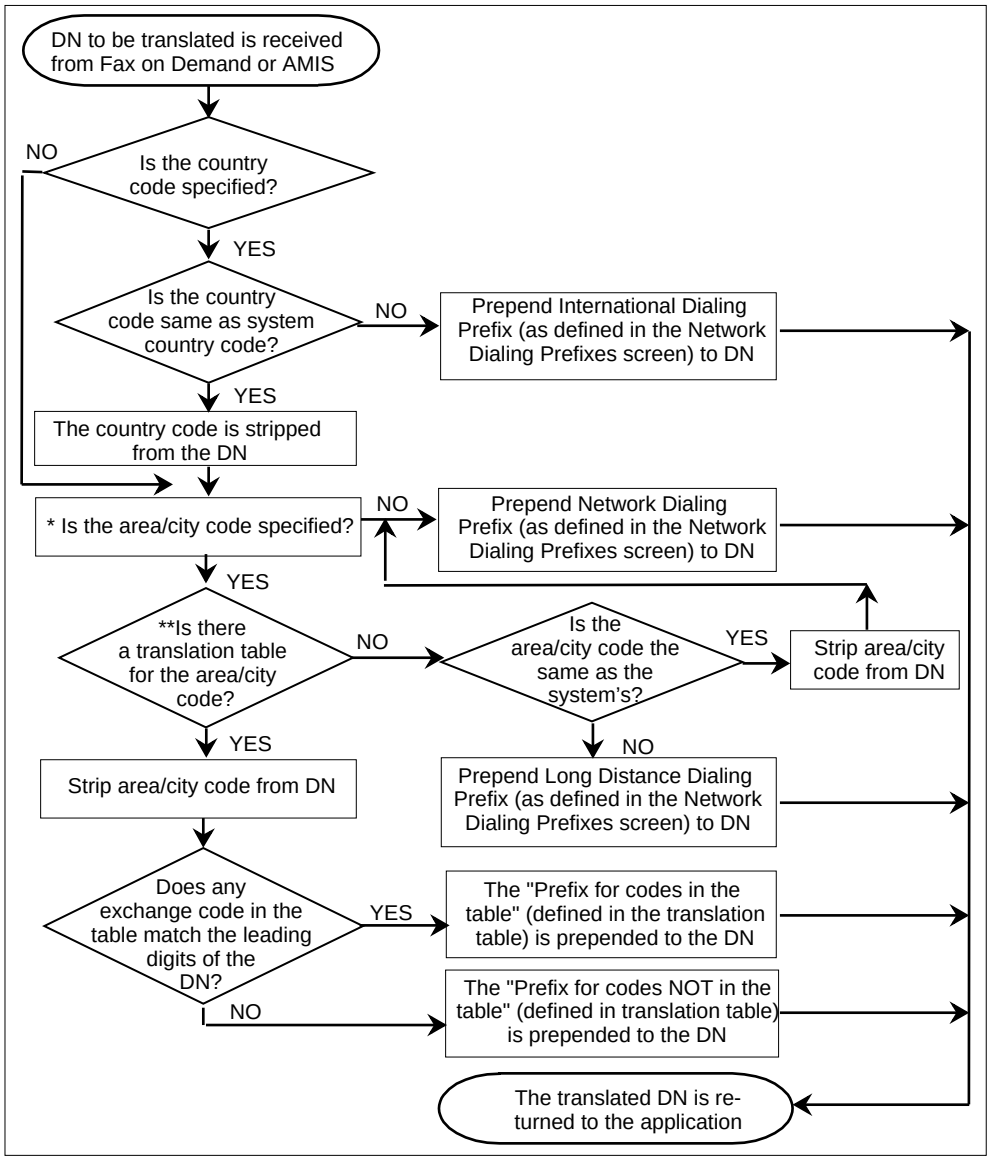
AMIS	Fields Specified in DN	
AMIS passes in the System Access number of the sending system in IDDD format as specified by the AMIS standard. This format always has the country and area code included in the DN.	**Country Code**	**Area/City Code**
	Yes	Yes

Note: Session profile settings do not affect AMIS. The System Access number of the sending system is translated in order to allow reply to the sender of the message using AMIS networking.

The translation process

Figure 9-2 is a flowchart showing how Meridian Mail takes an entered DN and translates it into a dialable DN using translation tables and the Network Dialing Prefixes screen.

Figure 9-2
Translation process flowchart



* In the case of Fax on Demand, the answer to this question will be "No" if a country code was specified.
** There may be more than one translation table for a given area/city code. All tables are checked for matches.

Checking Meridian Mail restrictions

Once the translated DN is returned to the application (AMIS or Fax on Demand), it is checked against the appropriate restriction/permission codes to see if calling to that DN is permitted.

For Fax on Demand, restrictions on callback numbers are set in the session profile of each Fax on Demand VSDN in the *Call Back Dialing Restrictions* field.

For AMIS networking, restrictions are set in the class of service to which the user who is trying to reply to an AMIS message belongs. The field is called *AMIS Open Network Restriction/Permission codes* .

Checking Meridian 1 restrictions

If the DN is not restricted in Meridian Mail, Meridian Mail requests the switch to place the call. There are, however, restrictions in the switch which may prevent the call from being placed by the switch. These switch restrictions are independent of Meridian Mail applications.

In the Meridian 1, restrictions can be placed on agents in overlay LD87 (using NCOS and FCAS). Furthermore, specific NPAs and special numbers can be restricted in LD90. For more information about restrictions in the Meridian 1, see the *X11 input/out guide* (NTP 553-3001-400).

Figure 9-3 shows what happens to the translated DN in the case of Fax on Demand and Figure 9-4 applies to AMIS.

Figure 9-3
Checking restrictions on a translated DN from the Fax on Demand application

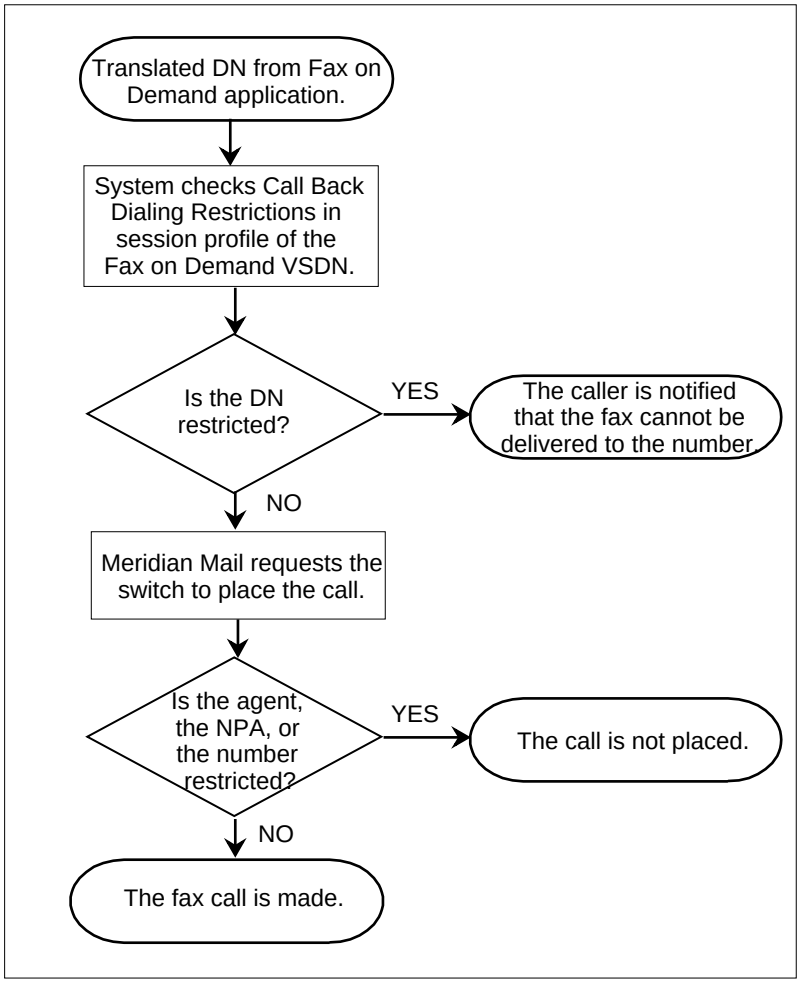
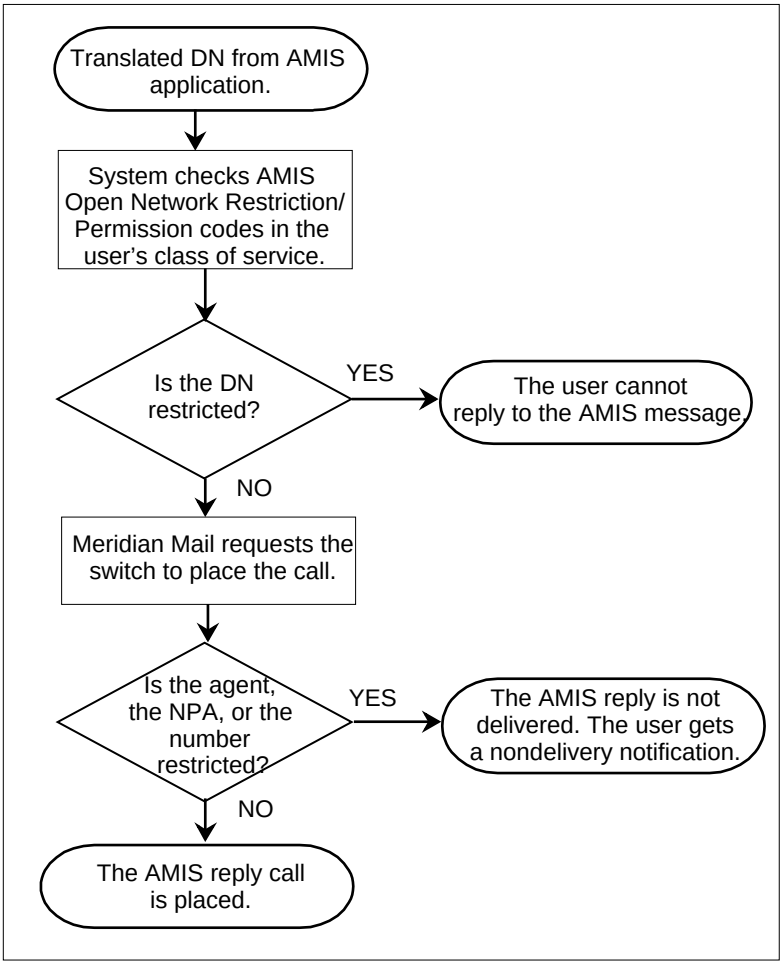


Figure 9-4
Checking restrictions on a translated DN from the AMIS application



Troubleshooting guidelines for dialing translations

Dialing translation problems show up as an inability to reach a number specified in the AMIS or Fax on Demand services. Diagnosis of such problems is best accomplished by collecting all setup information and then following the translation process flowchart (Figure 9-2) to determine the translated number.

Steps in troubleshooting dialing translations:

1 Collect all relevant information. This includes session profile settings for the Fax on Demand service, network dialing prefix settings, and dialing translation table settings.

2 Pick a particular scenario that is causing problems and walk through the translation process flowchart (Figure 9-2) to determine the translated number.

If the application is Fax on Demand, then the Fax Audit Trail will contain the translated DN that the system is attempting to dial. For more information about the Fax Audit Trail, see the section "Collecting fax audit trail data" in the "Operational Measurements" chapter. If the application is AMIS, SEER 4211 is generated. (The SEER text is "The number xxxxxxxx" cannot be reached", where "xxxxxxx" is the translated number.)

3 If the translated number is dialable on the system, then the problem may not be related to dialing translations. In this case, the problem is likely to be one of the following:

- The fax callback number or AMIS number is restricted in Meridian Mail by restriction/permission lists.
- For Fax on Demand, check the session profile. For AMIS, check the class of service to which the user belongs.
- The NPA of the callback number or AMIS number is restricted on the switch.

  Check LD 90 in the Meridian 1. Alternatively, the entire number may be restricted because it is considered a "special number" (also check LD 90 in the Meridian 1).
- The agent is restricted in the switch. Check the NCOS and FCAS in LD 87.

Troubleshooting example

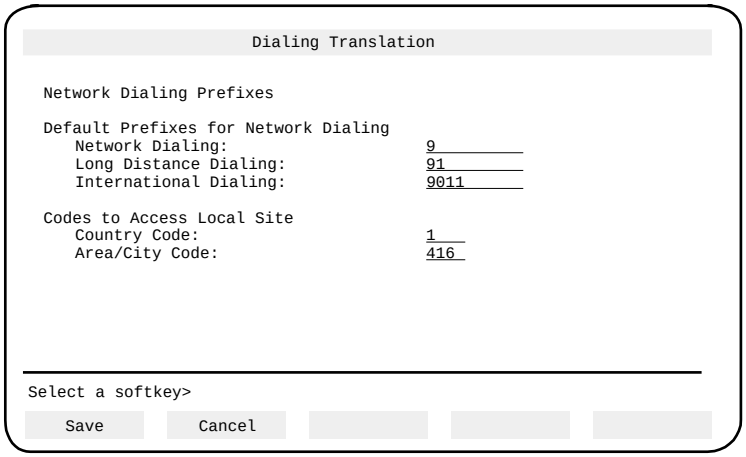
- Step 1: collect relevant information

  The relevant fields in the session profile and their settings are:

  - *Call Back International DDD* is set to Optional
  - *Call Back Number Area Code T ranslation* is set to North American Plan

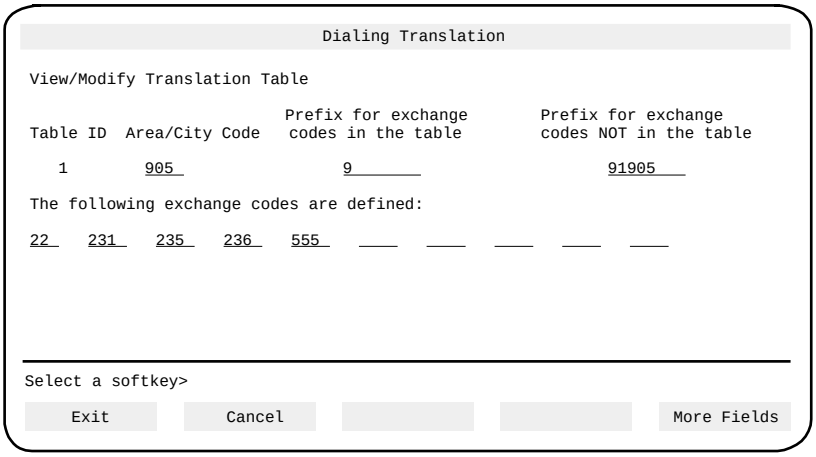
In this example, the system is located in Toronto (area code "416"). The Network Dialing Prefixes screen is configured as shown in Figure 9-5.

Figure 9-5
Network Dialing Prefixes screen



A translation table has been set up for area code 905 and the Prefix for codes in the table is set to 9, and 555 is an exchange code in the table. (See Figure 9-6.)

Figure 9-6
Translation table for local calling to different NPA (no NPA required)



- Step 2: identify problem scenario and step through translation process flowchart

  A caller wants a fax delivered (using callback delivery) to 905-555-1234, which is dialable from the system as 9-905555-1234. The fax is not being delivered.

  Going through the flowchart (Figure 9-2), you would construct the translated DN step by step as shown in Table 9-3.

Table 9-3
Constructing the translated DN

Action	Prepend	Country code	Area code	Rest of number
User prompted by Fax on Demand for a number which includes the area code. The user enters 9055551234.			905	5551234
Follow the translation process flowchart. For the entered area code, see if there is a translation table defined for it. In this example, there is a translation table for area code 905. Fax on Demand strips off the area code.				5551234
Determine if the 555 exchange code is defined in the table. Since it is, prepend the "Prefix for codes in the table".	9			5551234

The translated number is 9-555-1234, not the desired 9-905-555-1234. The problem can be traced back to the last step in the table, where the translation table prefix is appended. The prefix 9, not 9-905, is being prepended to the DN.

The solution could be to change the "Prefix for codes in the table" to 9-905. However, if some exchange codes require dialing without the 905 area code, a new translation table could be created for the same area code (905), with the "Prefix for codes in the table" set to 9-905. The exchange code 555, and any other exchanges requiring access by 9-905 would moved to the second table.

This example shows how to use the flowchart to determine how the translation tables ar used to construct the translated number. By following this process, it is possible to locate the source of the problem and devise a solution.

Identify network dialing prefixes

You will need to identify the following prefixes and access codes for your Meridian Mail site. This must be done for all Meridian Mail systems supporting Fax on Demand with callback delivery and/or AMIS networking.

As you identify these prefixes and access codes, enter them in the worksheet shown on page 9-25.

There are a number of sample datafills provided beginning on page 9-23 to show a number of possibilities. If your system uses ESN dialing, be sure to look at these examples.

Default prefixes for network dialing

There are three network dialing prefixes that must be defined. These are the dialing digits that are used to dial out of the switch to place local, long distance and international calls using either the public network, the ESN network, or a combination of both. These prefixes are used by Meridian Mail to generate a DN that is understandable to the switch.

For example, a caller enters 1-214-555-2131 as a callback number. The country code is the same as that of the Meridian Mail site but the area/city code is different (as defined in *Codes to Access Local Site*). This indicates a long distance call. To deliver the fax, Meridian Mail looks up the long distance dialing prefix (91 in this example) and generates the DN 91-214-555-2131.

> ***Note:*** If you have defined translation tables for exceptions (such as local dialing to a different NPA), the translation tables will be consulted for dialing prefixes, not the dialing prefixes identified here. The prefixes you define in the Network Dialing Prefixes screen are defaults which are used only under normal dialing conditions.

Network dialing prefix

This is the prefix that is used by the system to dial out of the switch and access the public network or a private network in order to place a local call.

The prefix you enter will depend on whether you use a private network or a public network to place local calls. Typical examples of network dialing prefixes are 9 or 8 to access the public network, or 6 to access a private ESN network.

If your switch is part of a CDP (coordinated dialing plan) network, users who want to dial another user on the private network enter a CDP number which already includes a steering code. This means that you do not have to enter a network dialing prefix for dialing on the CDP network. You will, however, have to enter a prefix for off-net local dialing. Enter whatever prefix is used to get NARS service for local numbers (often 9 or 8).

Long distance dialing prefix

This is the prefix that is used by the system to dial out of the switch and access the public network or a private network in order to place a long distance call.

The prefix you enter will depend on whether you use a private network or a public network to place long distance calls. Typical examples of long distance dialing prefixes are 91 or 81 to access the public network, or 6 to access a private ESN network.

If your switch is part of a CDP network, users who want to dial another user on the private network enter a CDP number which already includes a steering code. This means that you do not have to enter a network dialing prefix for dialing on the CDP network. You will, however, have to enter a prefix for off-net long distance dialing. Enter whatever prefix is used to get NARS service for long distance numbers (often 91 or 81).

International dialing prefix

This is the prefix that is used by the system to dial out of the switch and access the public network or a private network in order to place an international call.

The prefix you enter will depend on whether you use a private network or a public network to place international calls. Typical examples of international dialing prefixes are 9011 or 8011 to access the public network, or 6011 to access a private ESN network.

If your switch is part of a CDP network, users who want to dial another user on the private network enter a CDP number which already includes a steering code. This means that you do not have to enter a network dialing prefix for dialing on the CDP network. You will, however, have to enter a prefix for off-net international dialing. Enter whatever prefix is used to get NARS service for international numbers (often 9011 or 8011).

Codes to access local site

There are two access codes that you must define: the country code and the area/city code of the local Meridian Mail system. These fields are used to determine whether or not area/city codes and country codes need to be stripped out when a caller enters an AMIS number or a fax callback number.

Country code

Identify the country code for your system. (It is 1 for the U.S.A. and Canada.)

When a number that includes a country code is provided by a caller for fax callback delivery or by a user when addressing an AMIS message, the country code will be stripped out if it matches the code entered in this field. When the called system and the calling system share the same country code, it is not included in the dialable DN.

For example, a user that is located in the U.S.A. wishes to send an AMIS message to a user in Canada. He includes the country code "1" in the address. Since the country code for Canada and the U.S.A. is the same, the system will strip out the country code before dialing the number.

Area/city code

Identify the area/city code (NPA) for the local system.

When a number that includes an NPA is provided by a caller for fax call back delivery or by a user when replying to an AMIS message, it will be stripped out if it matches the code entered in this field.

For example, a caller requests that a fax item be sent (using call back delivery) to the DN 416-555-9911. The local system’s area/city code is also 416. Therefore, the area code will be stripped out and the dialable DN will be 9-555-9911, where 9 is the network dialing prefix (for local calls).

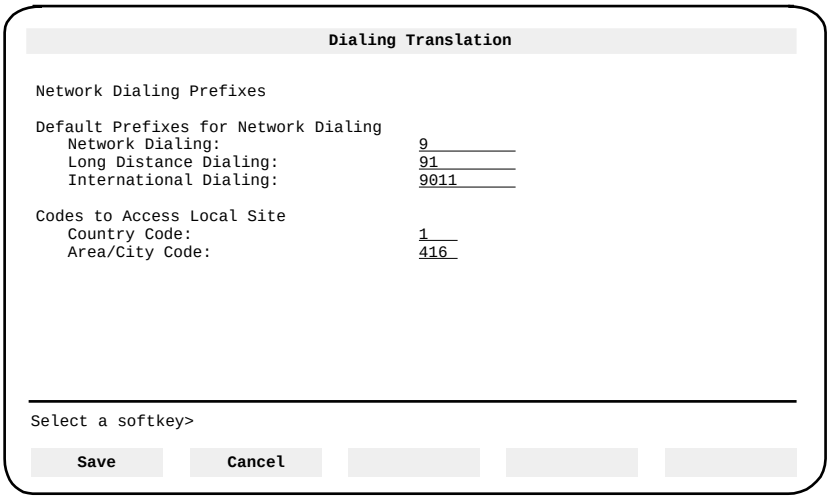
Sample datafills

The following screens are examples of how the Network Dialing Prefixes screen might be filled out based on different methods of dialing (public versus private network).

Dialing on the public network

Figure 9-7 shows a datafill for a system in Toronto (with a country code of 1 and an area/city code of 416) in which all dialing takes place on the public network. Note that these are just examples. Other common dialing prefixes for public networks are 8, 81 and 8011.

Figure 9-7
The Network Dialing Prefixes screen for public network dialing

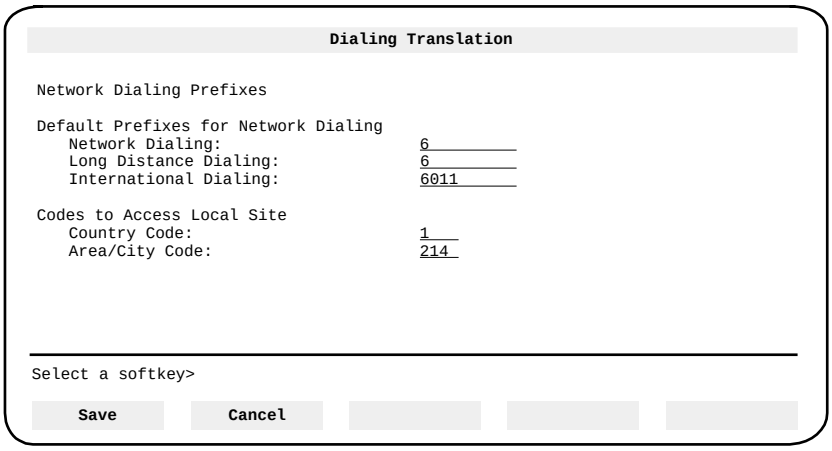


All dialing is on the ESN network

Figure 9-8 illustrates a datafill for a system in Dallas (with a country code of 1 and an area/city code of 214) in which all dialing (local, long distance and international) takes place on the ESN network.

> ***Note:*** Also see the section "Setting up dialing translations for ESN dialing" on page 9-49 for special configuration information.

Figure 9-8
The Network Dialing Prefixes screen (all dialing is on ESN)



ESN dialing for long distance calls only

Figure 9-9 illustrates a datafill for a system in London (the country code is 44 and the area/city code is 71) in which local calls are dialed on the public network, but long distance and international calls are dialed on the ESN network.

Figure 9-9
The Network Dialing Prefixes screen (ESN for long distance only)

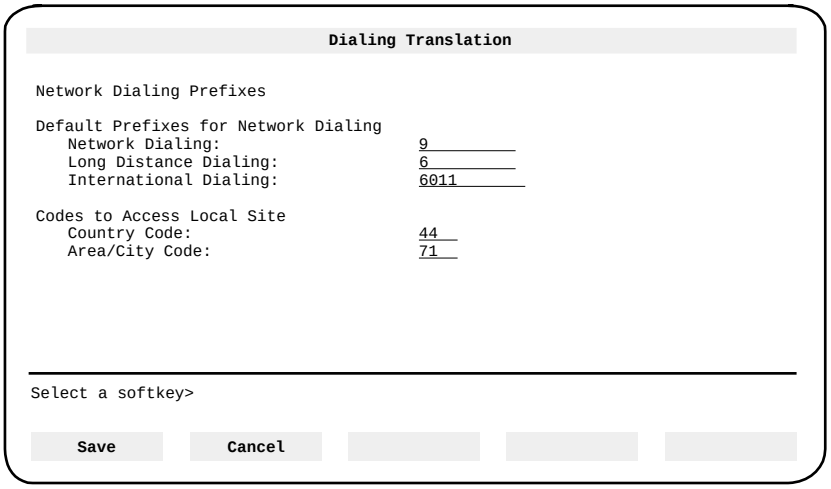


Figure 9-10 is a worksheet that you can use with the preceding sections to plan your network dialing prefixes and country codes.

Figure 9-10
Network dialing prefixes worksheet

Network dialing prefixes worksheet

Default prefixes for network dialing

Network dialing (local calls): _____

Long distance dialing: _____

International dialing: _____

Codes to access local site

Country code: _____

Area/city code: _____

Configuring network dialing prefixes

Make sure you have identified your dialing prefixes and access codes as outlined in the preceding pages before beginning Procedure 9-2.

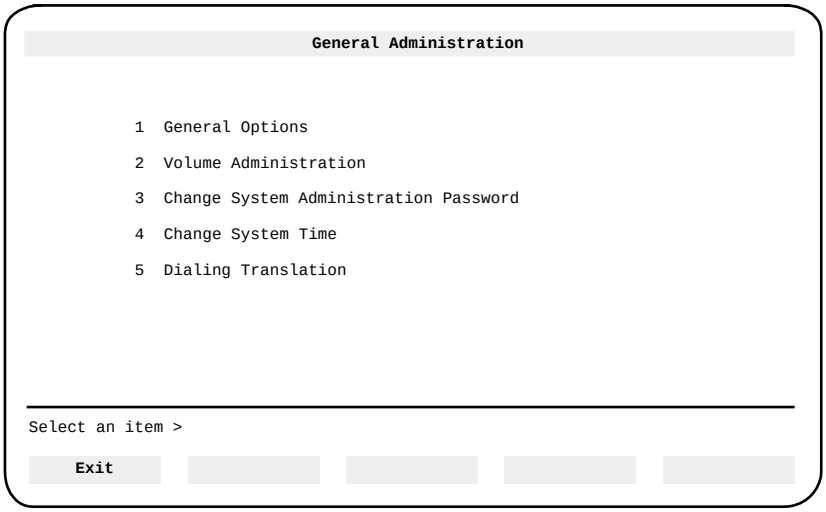
Procedure 9-2
Configuring network dialing prefixes

Starting point: The Main Menu

1 Select General Administration.

The General Administration menu is displayed. See Figure 9-1 1.

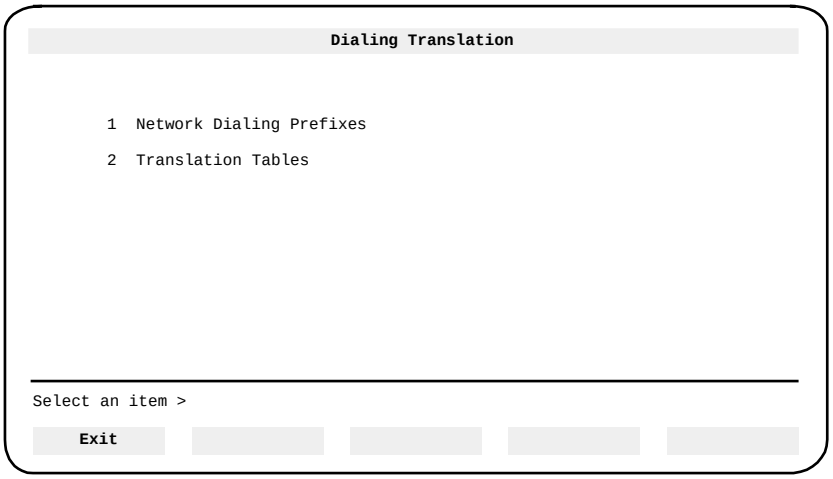
Figure 9-11
The General Administration menu



2 Select Dialing Translation.

The Dialing Translation menu is displayed. See Figure 9-12.

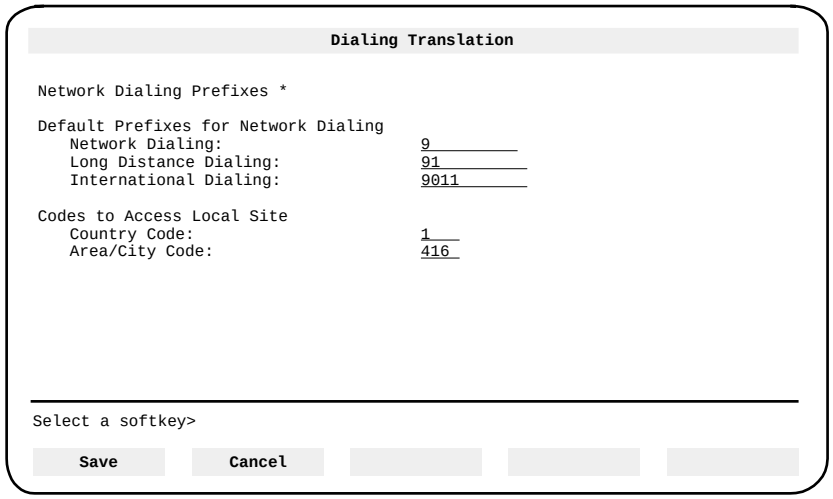
Figure 9-12
The Dialing Translation menu



3 Select Network Dialing Prefixes.

The Network Dialing Prefixes screen (Figure 9-13) is displayed.

Figure 9-13
The Network Dialing Prefixes screen



* Note that the prefixes shown in this screen are for illustration purposes only.

Note: Field descriptions are provided beginning on page 9-20.

4 Enter the default prefixes for network dialing.

a. Enter the network dialing prefix. This prefix is for placing local calls.

b. Enter the long distance dialing prefix.

c. Enter the international dialing prefix.

5 Enter the codes used to access the local site.

a. Enter the country code.

b. Enter the area/city code (also known as the NPA).

6 To save the configuration, go to step 6a. To discard your changes, go to step 6b.

a. Press the [Save] softkey.

The prefixes and access codes are saved. Y ou are returned to the Dialing Translation menu.

b. Press the [Cancel] softkey.

The prefixes and access codes are not saved. Y ou are returned to the Dialing Translation menu.

Identifying the need for translation tables

Not all systems will require translation tables. Table 9-4 shows normal dialing scenarios which do not require translation tables.

Table 9-4
Typical dialing scenarios that do not require translation tables

Case	Called Area is	Is NPA in called DN same as or different than the local site's NPA?	Translated DN Length will be *	DN Format needs to be
1	Long Distance	Different	11	Y-P-NPA-NXX-XXXX
2	Local	Same	7	Y-NXX-XXXX

Where:
Y is the network dialing prefix (such as "9", "8" or "6") that is used for local calls
P is the long distance dialing prefix ("1")
NPA is the Numbering Plan Area (area/city code)
NXX is the exchange code
* length does not include the network dialing prefix ("Y")

If these are the only local and long distance dialing scenarios that take place, you will not have to create any translation tables. Meridian Mail will use the prefixes that are defined in the Network Dialing Prefixes screen.

If all dialing (local, long distance, and international) is done on the ESN network, you will only have to create one translation table. See page 9-50 for more information.

If local dialing is carried out on the public network, but long distance dialing is carried out on the ESN network, see the section "Mixture of public network dialing and ESN network dialing" on page 9-53.

The scenarios outlined in Table 9-5 are exceptions. If any of these scenarios occur in your system, you will need to create translation tables. Up to 15 translation tables can be defined. A translation table is created for a particular area/city code. If a caller enters an area/city code for callback delivery of faxes or an AMIS networking address, and no translation table has been created for that area/city code, Meridian Mail uses the prefixes defined in the Network Dialing Prefixes screen.

Table 9-5
Exceptional dialing scenarios that require translation tables

Case	Called Area is	Is NPA in called DN same as or different than the local site's NPA?	Translated DN Length will be *	DN Format needs to be
1	Local	Different	10	Y-NPA-NXX-XXXX
2	Local	Different	7	Y-NXX-XXXX
3	Long Distance	Same	11	Y-P-NPA-NXX-XXXX
4	Long Distance	Same	8	Y-P-NXX-XXXX

Where:
Y is the network dialing prefix (such as 9, 8 or 6) that is used for local calls
P is the long distance dialing prefix (1)
NPA is the Numbering Plan Area (area code)
NXX is the exchange code
* length does not include the network dialing prefix (Y)

Cases 1 and 2 in Table 9-5 require a translation table for each NPA (other than the local site's NPA) to which local dialing occurs. For example, the Meridian Mail system is in area/city code 416. Certain exchanges in area/city code 905 are considered local when dialed from the 416 area. You will, therefore, have to define a translation table for area/city code 905. Depending on whether or not the NPA is required as part of the dialable number the DN format will be Y-NPA-NXX-XXXX (9-905-555-2121 for example) or Y-NXX-XXXX (9-655-3131 for example).

Cases 3 and 4 in Table 9-5 require a translation table for the local site's NPA. For example, the Meridian Mail system is in area code 214. Some exchanges in this area code are considered local and others are considered long distance.

In the translation table, you will either specify the exchanges that are considered local or those that are considered long distance (whichever case has the smaller number of exchanges).

For example, if 9 exchanges in the area code 214 are considered local to the Meridian Mail system and 100 are considered long distance, you would enter the 9 local exchanges in the table, since this makes it easier to define.

Identifying prefixes and exchange codes

Translation tables are created in the View/Modify Translation Table screen. The following are general descriptions of the fields in this screen. As you identify these parameters, fill out the worksheet that is shown on page 9-35. Beginning on page 9-36 are examples of the four types of exceptions and sample translation tables to help you fill out your worksheet.

> ***Note:*** Also see the section "Setting up dialing translations for ESN dialing" on page 9-49 for special configuration information.

Area/city code

Identify the area/city code to which the translation table applies. Use Table 9-5 to determine where there are dialing exceptions in your system. An area code can be up to 4 digits in length. Only numeric characters (0-9) are accepted by this field.

> ***Note:*** More than one table can be created for the same area/city code. This may be necessary if more exchanges are required than can fit in one table. (Up to 120 exchanges can be entered in a single table.)

Exchange codes

Identify the exchange codes which you need to enter in the translation table. This step should be done before you identify the prefix for exchange codes in the table and the prefix for exchange codes not in the table. This is because depending on which exchange codes you define in the table (they may be considered local or long distance), these prefixes will change.

An exchange code can be up to 4 digits in length. Only numeric characters (0-9) are accepted by this field. This field accepts codes that are less than three digits in length. This means that if you have a number of exchanges that begin with the same digit(s), you do not have to enter every code. For example, if you enter 52 as an exchange code, all exchanges beginning with 52 are implicitly included (520, 521, 522, and so on to 529).

> ***Note:*** Exchange codes entered in tables must be unique for a particular area code.

Local dialing to another area/city code (NPA)

For cases 1 and 2 (from Table 9-5), you are defining those instances in which a call to certain exchanges in *another* NPA are considered local. In the translation table, you can either enter the exchange codes to which a call is considered local or you can enter the exchange codes to which a call is considered long distance. It is recommended that you use the method that results in entering the smaller number of exchange codes. For example, if 200 exchange codes in the NPA are considered local and 12 are long distance, enter the the exchange codes to which dialing is considered long distance.

Long distance dialing to the same area/city code (NPA)

For cases 3 and 4 (from Table 9-5), you are defining those instances in which a call to certain exchanges in the *same* NPA are considered long distance. In the translation table, you can either enter the exchange codes to which calls are considered long distance or local (depending on which method results in entering the lesser number of exchange codes).

Creating multiple tables for one area/city code

If more than 120 exchange codes are required, another table will have to be created for this area/city code. A number of tables that are created for the same area/city code can be considered as a "joint" table. If this is the case, the *Prefix for exchange codes NOT in this table* field must be identical for all tables that are created for the same area/city code.

Prefix for exchange codes in the table

For those exchange codes that are defined in the table, this prefix will be used by the system to dial out of the switch and place the call. Therefore, depending on the scenario, this prefix will either be for local dialing or long distance dialing. This prefix is needed to generate a dialable DN that is understood by the switch.

The prefix can be up to 10 digits in length. This field accepts numeric characters (0-9) and the asterisk (*). (The asterisk indicates a pause for systems that have to wait for dial tone.)

> ***Note:*** More than one table might be necessary if different prefixes are required for different exchanges.

Prefix for exchange codes NOT in the table

For those exchange codes that are NOT defined in the table (or any other table for this area/city code) and that belong to the area code to which the table applies, this prefix will be used by the system to dial out of the switch and place the call. Therefore, depending on the scenario, this prefix will either be for local dialing or long distance dialing. This prefix is needed to generate a dialable DN that is understood by the switch.

> ***Note:*** If more than one translation table needs to be defined for a particular area/city code, the value in the *Prefix for exchange codes NOT in the table* field must be identical in all tables that apply to that area/city code.

Table 9-6 indicates how to define prefixes for exchange codes that are defined in the translation table and those that are not in the table based on the type of dialing exception. The dialing digits that are in brackets are just examples and will vary from system to system. Here it is assumed that the network dialing prefix for local calls is 9. The section "Setting up translation tables for dialing exceptions" beginning on page 9-36 provides more concrete examples of each of the four exceptions.

Table 9-6
Prefixes for exchange codes

Dialing scenario	Prefix for exchange codes in table	Prefix for exchange codes NOT in table
1: Local dialing to a different NPA (NPA required in DN)		
Exchange codes defined in table are considered local	Y-NPA (9-905)	Y-P-NPA (9-1-905)
Exchange codes defined in table are considered long distance	Y-P-NPA (9-1-905)	Y-NPA (9-905)
2: Local dialing to a different NPA (*no* NPA in DN)		
Exchange codes defined in table are considered local	Y (9)	Y-P (9-1)
Exchange codes defined in table are considered long distance	Y-P (9-1)	Y (9)
3: Long distance dialing to same NPA (NPA required in DN)		
Exchange codes defined in table are considered long distance	Y-P-NPA (9-1-214)	Y (9)
Exchange codes defined in table are considered local	Y (9)	Y-P-NPA (9-1-214)
4: Long distance dialing to same NPA (*no* NPA in DN)		
Exchange codes defined in table are considered long distance	Y-P (9-1)	Y (9)
Exchange codes defined in table are considered local	Y (9)	Y-P (9-1)

Where: Y is the network dialing prefix (such as 9, 8 or 6) that is used for local calls
P is the long distance dialing prefix (1)
NPA is the Numbering Plan Area (area code)

Figure 9-10 is a worksheet that you can use with the preceding sections to plan your network dialing prefixes and country codes.

Figure 9-14
Translation table worksheet

Translation table worksheet

Table ID: ___________ **Area/City Code:** _______________

Prefix for exchange codes in the table: _____________

Prefix for exchange codes NOT in the table: _____________

Exchange codes

Setting up translation tables for dialing exceptions

The following sections provide examples of when certain exceptions may occur and the resulting translation tables that need to be created.

> ***Note:*** Also see the section "Setting up dialing translations for ESN dialing" on page 9-49 for special configuration information.

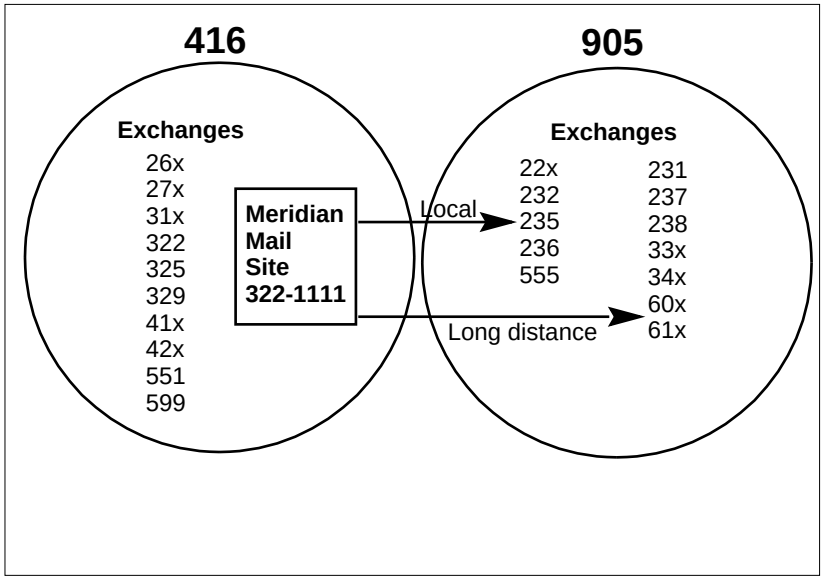
Local dialing to a different NPA (NPA required)

In this case, the NPA of the dialed DN is different from the calling site's NPA, but no long distance charges apply and no long distance prefix is required. The NPA is required as part of the dialable DN.

This scenario may occur in larger metropolitan areas that are serviced by a number of area codes. For example, a large city may have two or three area codes (for example, 416 and 905) to cover the entire metropolitan area.

When a call is placed from the 416 area code to the 905 area code, the NPAs are different, however, the call is local for certain exchanges. However, for other exchanges, the call may be considered long distance. For those exchanges that are considered local, the long distance dialing prefix must *not* be inserted in the dialed DN.

Figure 9-15
Local dialing to a different NPA



In this scenario a translation table is required for each NPA (other than the local site's NPA) that has exchange codes, which when dialed from the local site, are considered local calls. The scenario shown in Figure 9-15 requires a translation table for area code 905.

Example

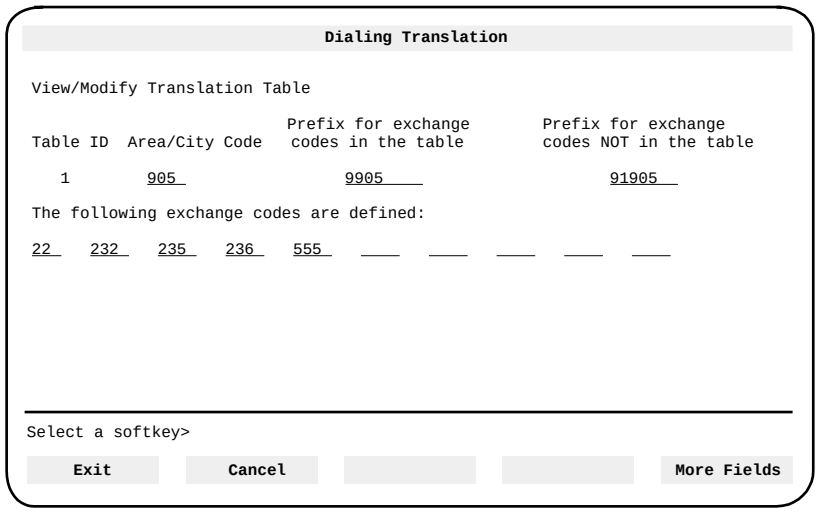
Your Meridian Mail system is serviced by the 416 NPA. The network dialing prefix is 9 and the long distance dialing prefix is 91. A caller phones your system and requests a fax item. Your Fax on Demand service is configured for callback delivery so the caller is prompted for a callback number. The caller enters 1-905-555-2121 (the 1 is the country code).

If you look at Figure 9-15 you will notice that calls to the 555 exchange are considered local. The dialable DN is therefore 9-905-555-2121, not 91-905-555-2121.

Translation table

Figure 9-16 shows the translation table that you would have to create to handle the scenario shown in Figure 9-15. This example assumes that the network dialing prefix (for local calls) is 9 and the long distance dialing prefix is 91.

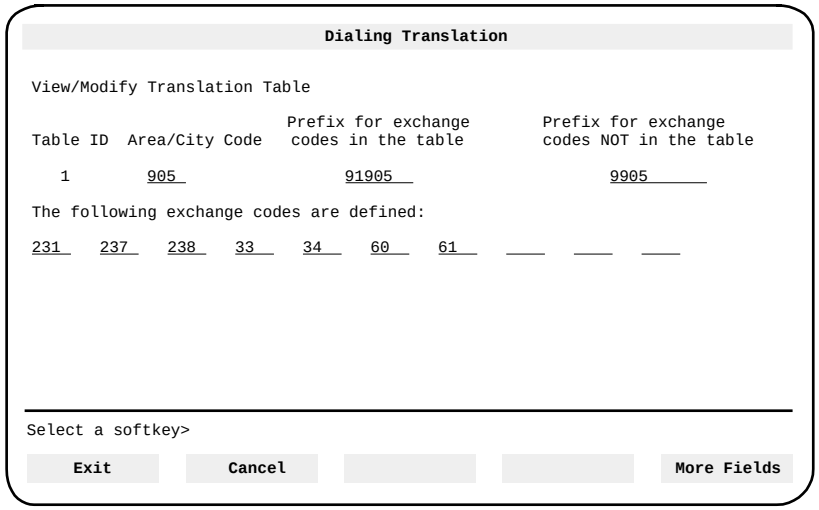
Figure 9-16
Translation table for local calling to different NPA (NPA required): method 1



Because 555 is defined in the translation table for area/city code 905, the *Prefix for exchange codes in this table* is used to generate the dialable DN. Because 9905 and not 91905 is entered, the call will be local. However, any exchange in the 905 area/city code that is not entered in this table will be considered long distance and the prefix 91 will be used to generate dialable DNs.

You could also define the translation table in the following manner.

Figure 9-17
Translation table for local calling to different NPA (NPA required): method 2



In Figure 9-17, the exchange codes which are long distance within the 905 area/city code are explicitly defined in the table instead of the local codes. Note that the two prefixes (prefix for exchange codes in the table and prefix for exchange codes not in this table are reversed compared to Figure 9-16).

The way in which you define the table will depend on how many exchange codes within the area/city code are considered local and how many are considered long distance. If, for example, 100 exchange codes in the 905 NPA are long distance and 10 are local, the translation table in Figure 9-16 would be easier to create since you would only have to define 10 codes. However, if there were more local exchange codes than long distance codes, you would create a table similar to the one shown in Figure 9-17.

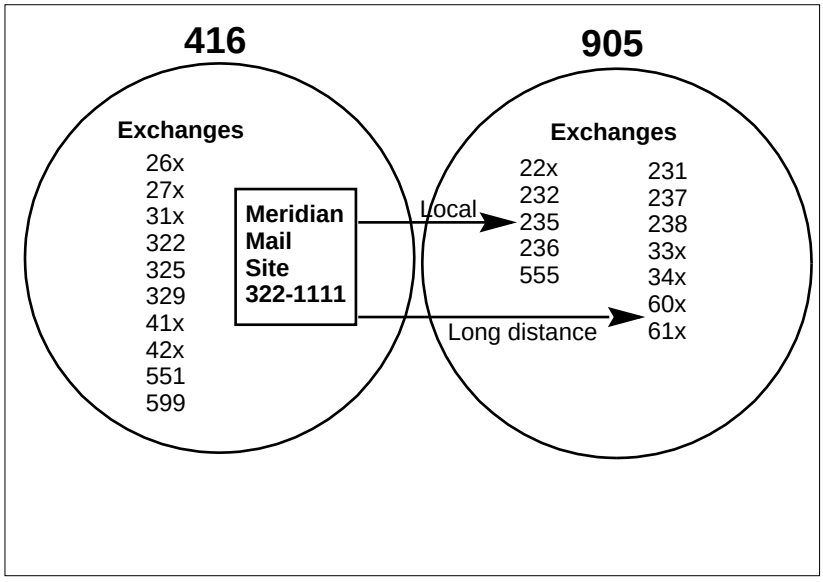
Local dialing to a different NPA (no NPA required)

This scenario is almost identical to the first scenario because there is local dialing from one NPA to a different NPA. However, the difference is that no NPA is required in the dialable DN. Using the example on page 9-37, the dialable DN in this case would be 9-555-2121 instead of 9-905-555-2121.

Example

This situation may occur if, for example, a metropolitan area is in the process of adopting a new area code in which certain exchanges will be considered local (as described for Scenario 1). Therefore, in Figure 9-18 the first column of exchanges for the 905 area code are local if dialed from the 416 area code. In order to make the transition easier for people in the area, the service provider will allow calls to the local exchanges in the 905 area code to be placed without the NPA since this is what people are accustomed to dialing. However, after a certain specified date (when the phone company ends the transition period), the new area code will have to be entered and the translation table prefixes must be updated (Scenario 1).

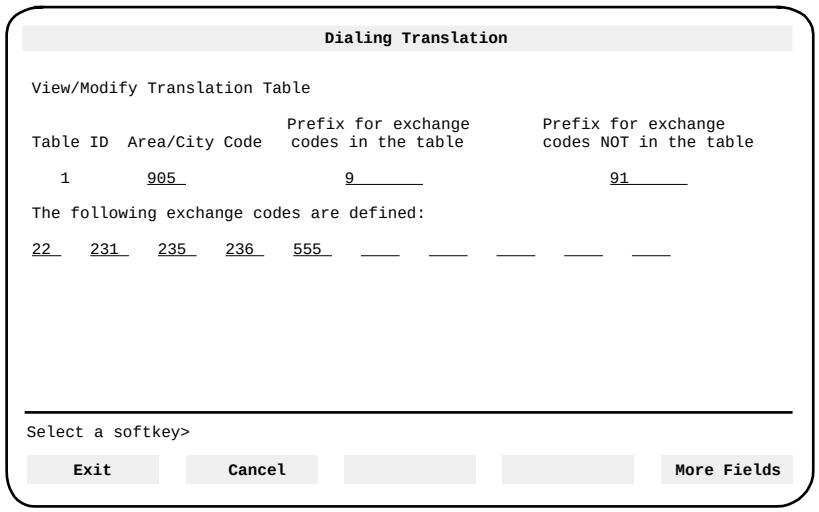
Figure 9-18
Local dialing to a different NPA (no NPA required)



Translation table

Figure 9-19 shows the translation table that you would have to create to handle the scenario shown in Figure 9-18 when no NPA is required in the dialable DN. This example assumes that the network dialing prefix (for local calls) is 9 and the long distance dialing prefix is 91.

Figure 9-19
Translation table for local calling to different NPA (no NPA required)

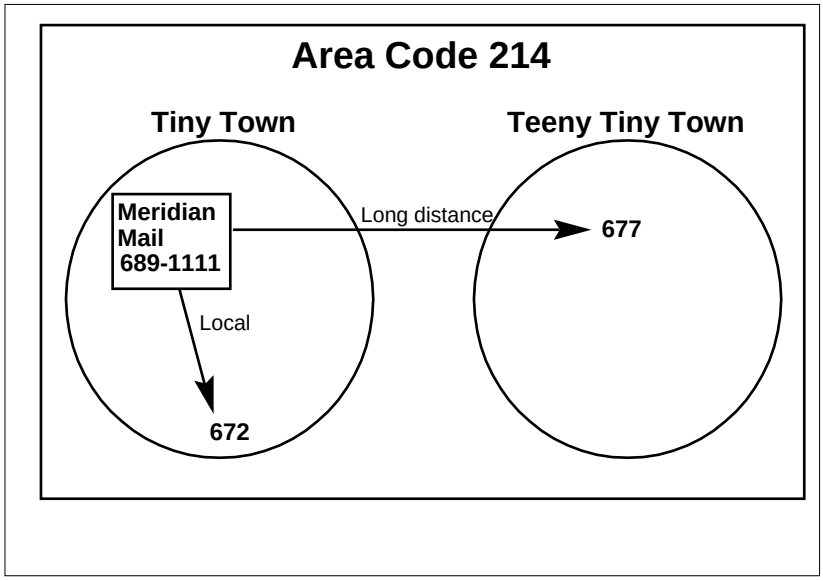


Long distance dialing to the same NPA (NPA required)

This scenario describes toll call (long distance) dialing within the same area/city code. Calls involve the long distance dialing prefix even though both the calling party and the called party are under the same area code. In this scenario, the NPA is also required as part of the dialable DN.

This sort of dialing scenario may occur when a number of smaller rural areas or towns share an NPA, yet calls from one town to another are considered long distance.

Figure 9-20
Long distance dialing to the same NPA



Example

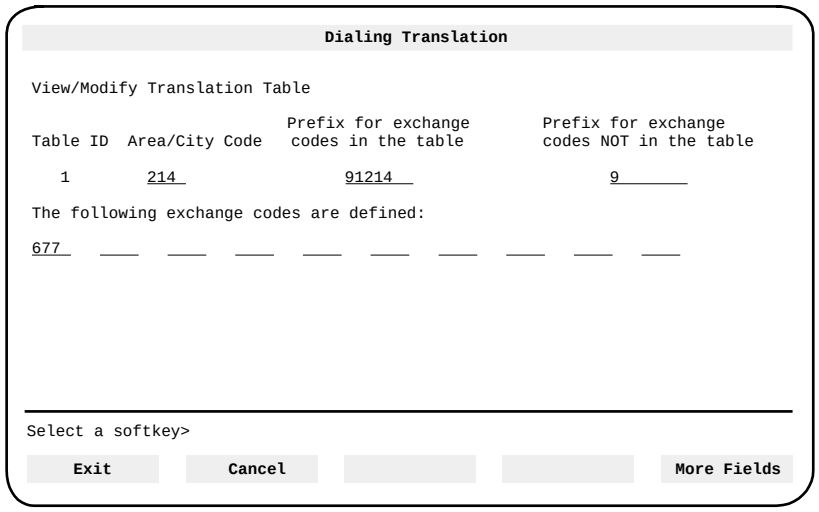
A caller from Teeny Tiny Town calls into the Meridian Mail system located in Tiny Town and requests that a fax be delivered to DN 214-677-1133. Exchange 677 is in the 214 area code, however, is considered long distance because it is in a different town.

Meridian Mail must convert this DN to the dialable DN 91-214-677-1133 (91 is the long distance dialing prefix).

Translation table

Figure 9-21 shows the translation table that you would have to create to handle the scenario shown in Figure 9-20. This example assumes that the network dialing prefix (for local calls) is 9 and the long distance dialing prefix is 91.

Figure 9-21
Translation table for long distance calling to the same NPA (NPA required)



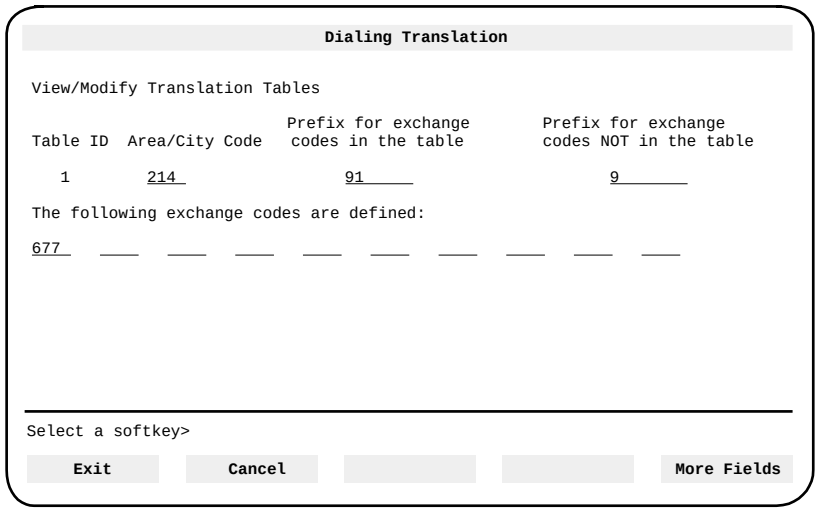
Long distance dialing to the same NPA (NPA not required)

This scenario (Figure 9-21) is almost identical to the preceding scenario (Figure 9-20) because there is long distance dialing from one NPA to the same NPA. The only difference is that no NPA is required in the dialable DN. Using the previous example, the dialable DN in this case would be 91-677-1133 instead of 91-214-677-1133.

Translation table

Figure 9-22 shows the translation table that you would have to create to handle the scenario shown in Figure 9-20 in which the NPA is not required as part of the dialable DN. This example assumes that the network dialing prefix (for local calls) is 9 and the long distance dialing prefix is 91.

Figure 9-22
Translation table for long distance calling to the same NPA (no NPA required)



Creating translation tables in Meridian Mail

Once you have determined which area codes require translation tables, the exchange codes that need to be defined in the table, and the two prefixes (one for exchange codes in the table and the other for exchange codes not in the table), follow Procedure 9-3 to configure a translation table in Meridian Mail.

Procedure 9-3
Creating a translation table

Starting point: The Main Menu

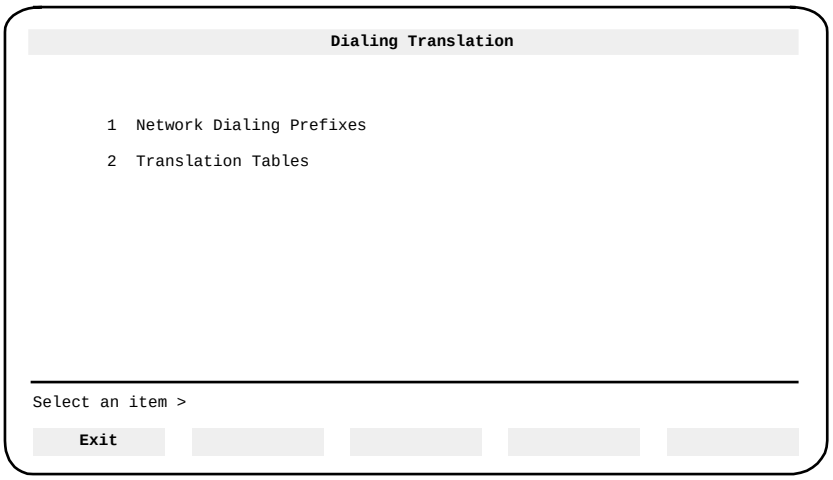
1 Select General Administration.

The General Administration menu is displayed.

2 Select Dialing Translation.

The Dialing Translation menu is displayed (Figure 9-23).

Figure 9-23
The Dialing Translation menu



3 Select Translation Tables.

The Translation Tables screen is displayed (Figure 9-24).

Figure 9-24
The Translation Tables screen

Dialing Translation

Translation Tables

Table ID	Area/City Code	Prefix for exchange codes in the table	Prefix for exchange codes NOT in the table
1	416	91416	9
2	416	91	9
3	905	9905	91905
4	906	9	91906
5	Empty		
6	Empty		
7	Empty		
8	Empty		
9	Empty		
10	Empty		
11	Empty		
12	Empty		
13	Empty		
14	Empty		
15	Empty		

Move the cursor to the item and press the spacebar to select.

Exit | | **View/Modify** | **Delete** |

Note: The prefixes shown in this screen are for illustration purposes only.

This is a summary screen which lists all of the defined and empty translation tables that currently exist on the system. All of the fields in this screen are read-only.

4 Move the cursor to an empty table.

5 Press the <Space bar> to select it.

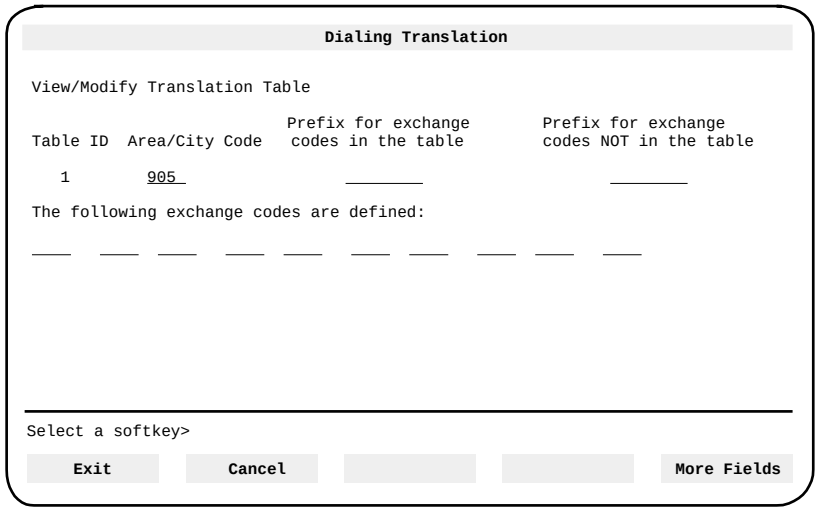
6 Press the [View/Modify] softkey.

You are prompted for an area/city code.

7 Enter the area/city code to which the table you are creating applies and press <Return>.

The View/Modify Translation Table screen is displayed (Figure 9-25).

Figure 9-25
The View/Modify Translation Table screen



Note 1: For field descriptions, go to page 9-31.

Note 2: The Table ID field cannot be modified. These numbers are automatically assigned by the system.

8 Specify the prefix for exchange codes that are defined in the table. This prefix is applied to DNs entered by callers/users in order to generate the appropriate dialable DN.

9 Specify the prefix for exchange codes that are not defined in the table. This prefix is applied to DNs entered by callers/users in order to generate the appropriate dialable DN.

10 Enter the appropriate exchange codes.

To display more fields, press the [More Fields] softkey. Up to 120 exchange codes can be defined for a table.

Note: All entries will be validated to avoid duplication.

11 To save the table, press the [Save] softkey.

The updated Translation Tables screen is displayed.

If you run out of fields for exchange codes, create another table. Return to step 4. The values entered for the *Area/City Code* and the *Prefix for exchange codes NOT in the table* fields in the second table must match the first table.

Viewing/modifying a defined translation table

Follow Procedure 9-4 to modify an already defined translation table. If you are modifying a table, it is assumed that it is to add exchange codes to or delete exchange codes from the existing list. Once exchange codes are defined in a table, you *cannot* modify the *Area/City Code* field or the *Prefix for exchange codes in the table* field. To modify these fields, you would have to delete all of the exchange codes first. For instructions on deleting the contents of a translation table, see Procedure 9-5 on the next page.

Procedure 9-4
Viewing/modifying a translation table

Starting point: The Main Menu

1 Select General Administration.

The General Administration menu is displayed.

2 Select Dialing Translation.

The Dialing Translation menu is displayed.

3 Select Translation Tables.

The Dialing Translations screen is displayed.

4 Move the cursor to the table you want to view or modify.

5 Press the <Space bar> to select it.

6 Press the [View/Modify] softkey.

The View/Modify Translation Table screen is displayed (Figure 9-25).

Note: The Area/City Code field cannot be modified if any exchange codes are currently defined in the table.

7 Change the prefix for exchange codes that are not explicitly defined in the table if necessary. (You cannot change the prefix for exchange codes in the table.)

8 Add or delete exchange codes if necessary.

9 To save your changes, press the [Save] softkey. If you are only viewing the table, use the [Cancel] softkey.

The updated Translation Tables screen is displayed.

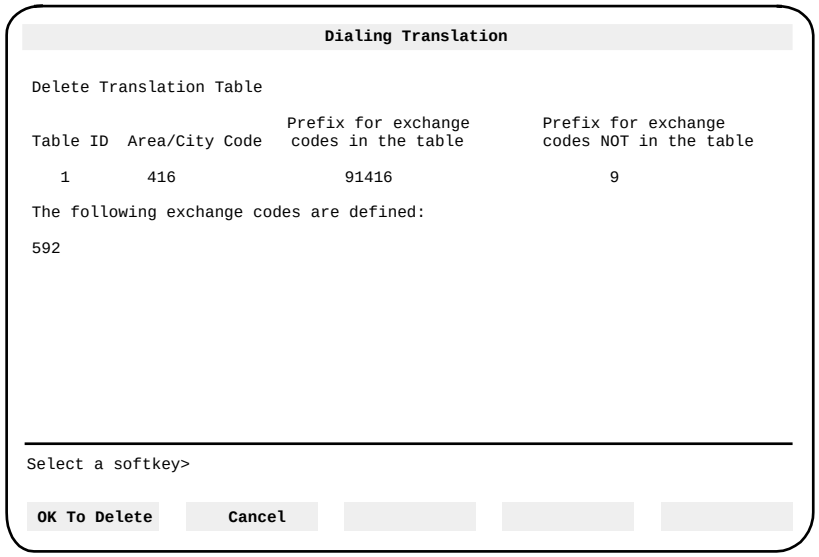
If you were adding exchange codes and you ran out of fields, create another table. Return to step 4. The values entered for the Area/City Code and the *Prefix for exchange codes NOT in the table* fields in the second table must match the first table.

Deleting a translation table

To delete the data in a defined translation table, follow Procedure 9-5.

Note: If you press the [Delete] softkey when an empty table is selected, an error message will be generated indicating that an empty table cannot be deleted. If the cursor is on a defined table when you press [Delete], the datafill will be deleted and the table will be reset to Empty.

Figure 9-26
The Delete Translation Tables screen



Procedure 9-5
Deleting a translation table

Starting point: The Main Menu

1 Select General Administration.

The General Administration menu is displayed.

2 Select Dialing Translation.

The Dialing Translation menu is displayed.

3 Select Translation Tables.

The Dialing Translations screen is displayed.

4 Move the cursor to the (defined) table that you want to delete.

5 Press the <Space bar> to select it.

6 Press the [Delete] softkey.

The Delete Translation Table screen is displayed. The fields in this screen are read-only.

7 To delete the information in the table, go to step 7a. To cancel the deletion, go to step 7b.

a. Press the [OK to Delete] softkey.

The contents of the translation table are deleted and the table is reset to empty.

b. Press the [Cancel] softkey.

The contents of the translation table are not deleted.

Setting up dialing translations for ESN dialing

This section describes how network dialing prefixes and translation tables should be datafilled for ESN network dialing. It also describes configurations for systems in which all dialing is done on the ESN network, as well as those systems in which certain types of dialing are done on the ESN network and other types are done on the public network (for example, local calling and international calling are done on the public network, but long distance calling is done on the ESN network).

All dialing is on the ESN network

If all dialing is on the ESN network, you will have to configure the Network Dialing Prefixes screen so that the ESN prefix is entered as the network dialing prefix, long distance dialing prefix and international dialing prefix.

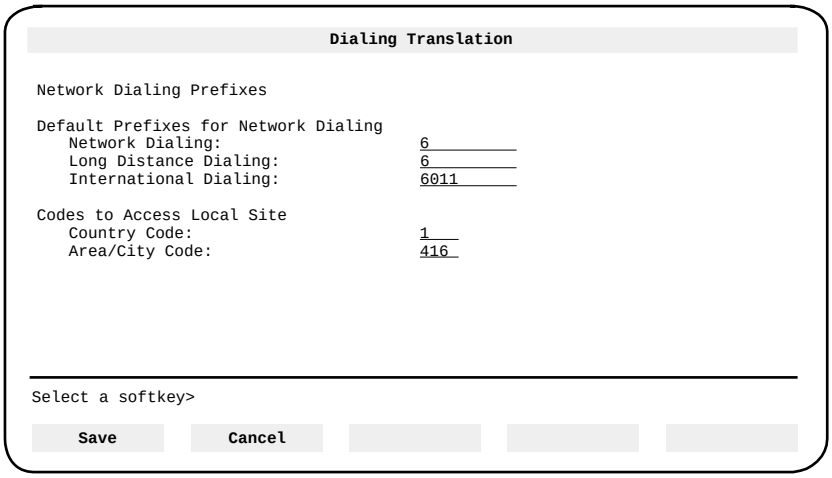
You will have to configure only one translation table.

This configuration applies to North American sites as well as sites outside of North America.

Network dialing prefixes

Figure 9-27 illustrates the Network Dialing Prefixes screen for a system in which all dialing is done on the ESN network. In this example, the ESN access code is 6 and the local site's area/city code is 416.

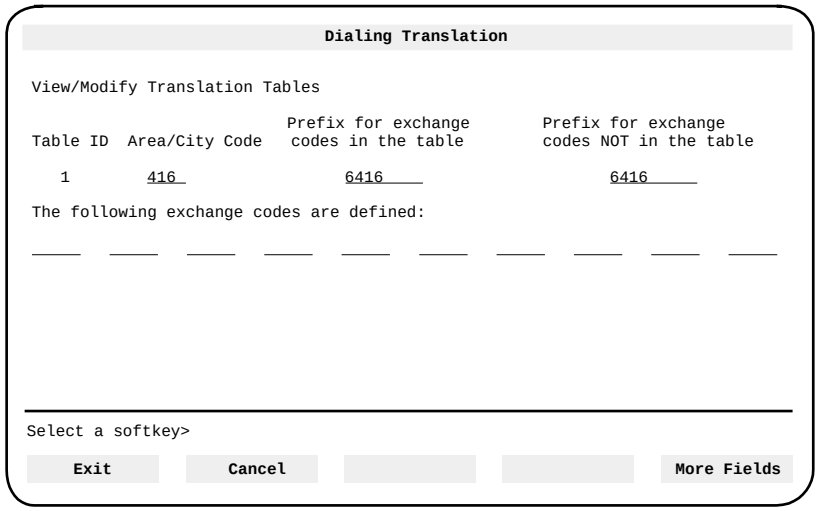
Figure 9-27
The Network Dialing Prefixes screen (all dialing is on ESN)



Translation table

If all dialing (local, long distance and international) is carried out on the ESN network, only one translation table needs to be created. The ESN network is assumed to handle all the dialing exceptions including local inter-NPA dialing and long distance dialing within the same area/city code. Figure 9-28 illustrates the datafill for this table. (Note that the area/city code used in this figure is for illustration purposes only.)

Figure 9-28
The View/Modify Translation Tables screen (ESN configuration)



It is not necessary to define any exchange codes in the table. The area/city code in the table must be the same as the local site's area/city code that is configured in the Network Dialing Prefixes screen.

Choosing the dialing plan for fax on demand services

For Fax on Demand services, or voice menus or time-of-day controllers that activate fax items, you must specify the *Call Back Number Area Code Translation* in the session profile (accessed when you add the service DN to the VSDN table). In Meridian Mail Release 9, there are two choices: "North American Plan" and "None".

North American Plan

The North American Plan is intended for sites in North America where DNs are 10 digits in length (in the format NPA-NXX-XXXX). If "North American Plan" is selected in the session profile, callers who enter fax callback numbers will have to enter them in the 10-digit format. Therefore, callers cannot enter a DN in the format "ESN-XXXX" since it is only 7 digits long. Callers will have to enter DNs in the format NPA-NXX-XXXX. This DN will be translated into the format 6-NPA-NXX-XXXX (where 6 is the ESN access code).

For example, a caller enters 416-555-0988 as a fax callback number. The NPA of the Meridian Mail is also 416. The translation table (shown in Figure 9-28) will be consulted and the resulting translated DN will be 6-416-555-0988.

For long distance dialing (calling to an area with a different NPA), the *Default Long Distance Dialing Prefix* is used (since there will be no table defined for a different NPA). If, for example, a caller enters 919-543-5000 it would be converted to the dialable DN 6-919-543-5000.

For international dialing (calling to a different country code), the *Default International Dialing Prefix* is used. For station-to-station dialing to ESN locations, the dialing format will be 6011-C-NPA-NXX-XXXX (where C is the country code).

None

The option "None" is intended for sites outside of North America to support countries that have variable length dialing plans. However, North American sites can choose this option if desired. When "None" is selected in the session profile, fax callback numbers can be entered in one of two formats: ESN-XXXX or NPA-NXX-XXXX.

When this option is selected, only the *Default Network Dialing Prefix* ("6") will be inserted at the beginning of the entered numbered to generate a dialable DN.

If the caller entered the callback fax number in the format ESN-XXXX, the translated dialable DN will be 6-ESN-XXXX.

If the caller entered the call back fax number in the format NPA-NXX-XXXX, the translated dialable DN will be 6-NPA-NXX-XXXX.

Mixture of public network dialing and ESN network dialing

Certain systems may use a mixture of public network dialing and ESN network dialing. For example, long distance and international calls are dialed on the ESN network and local calls are dialed on the public network.

In this scenario, both the Network Dialing Prefixes screen and the Translation Tables screen need to be configured properly.

> ***Note:*** If only Fax on Demand (not AMIS networking) is implemented, and the *Call Back Number Area Code Translation* field in the session profiles of all fax services is set to "None", it is not necessary to define translation tables. Translation tables are created for certain area codes. However, if callers do not enter callback numbers in a format that includes the area code (for example, callers enter callback numbers in the format ESN-XXXX), then translation tables cannot be implemented.

Figure 9-29 shows the Network Dialing Prefixes screen and Figure 9-30 illustrates a translation table to handle this scenario.

> ***Note:*** If both public network dialing and ESN network dialing can be used for certain types of calls (such as local or long distance), you must choose one type of dialing. You cannot use both. If, for example, 9 is the public network dialing prefix and 6 is the ESN network dialing prefix and both can be used to place local calls, you will have to enter either 9 or 6 in the Network Dialing Prefixes screen.

Figure 9-29
The Network Dialing Prefixes screen (ESN for long distance only)

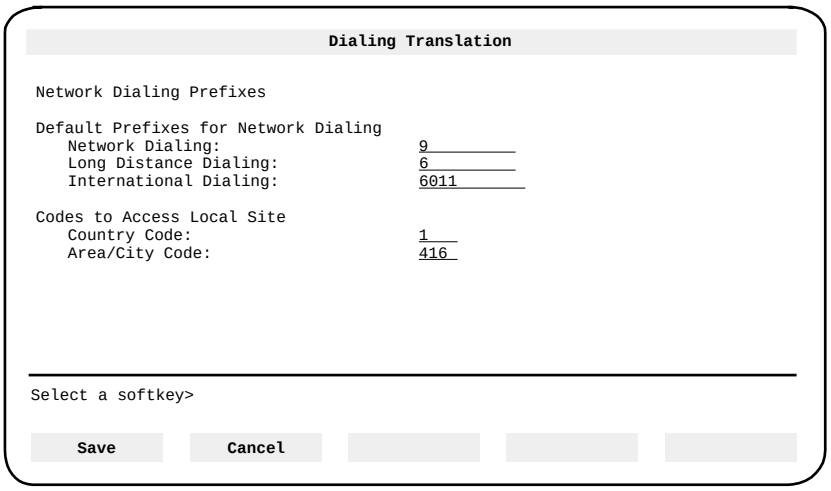
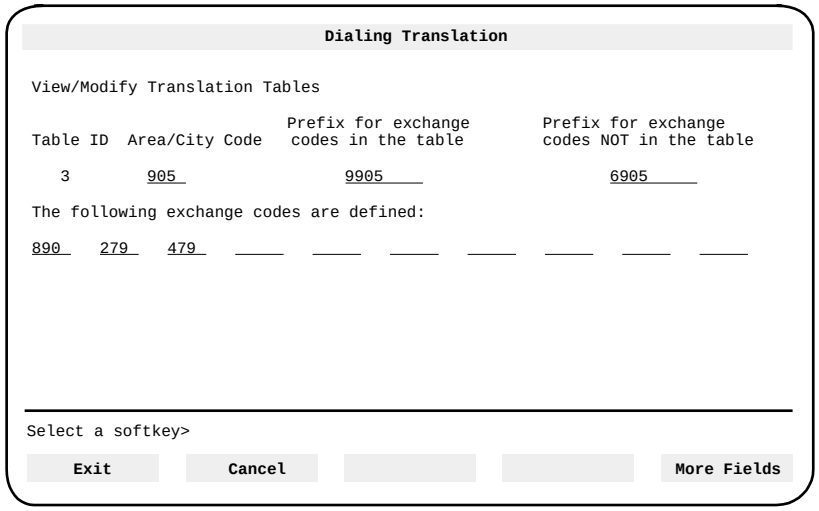


Figure 9-30
The View/Modify Translation Tables screen (ESN for long distance dialing only)



In the translation table shown in Figure 9-30, for area code 905, any callback numbers or AMIS numbers with exchange codes 890, 279 or 479 are considered local and are prefixed with 9905. All other exchanges in this area code are considered long distance and are prefixed with 6905 and the call is made on the ESN network. This same methodology can also be applied to long distance dialing within the same NPA.

Allowing fax delivery to internal extensions

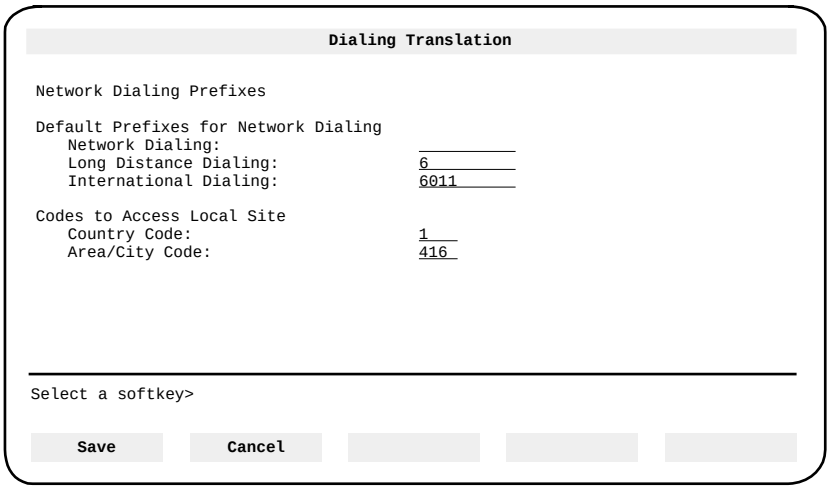
The configuration described in this section can be used for one of two reasons:

- to allow fax callback delivery to internal extensions
- to allow callers to enter standard ESN callback numbers in North America

  Note: For sites in North America, you may want to create two VSDNs for Fax on Demand applications. You can publish one number to internal users and/or to external callers who dial your site using ESN (the one served by the VSDN with *Call Back Number Area Code Translation* set to "None") and the other one to external callers (the one served by the VSDN with *Call Back Number Area Code Translation* set to "North American Plan"). See the "Voice administration" chapter for more information about the session profile and VSDNs.

If you want internal users to be able to dial up a fax application and have a fax delivered to an internal fax machine, the Network Dialing Prefixes screen must be configured as shown in Figure 9-31. In this example, the Meridian Mail site is in area code 416. Local dialing is on the public network, as shown in Figure 9-32, and long distance dialing is on the ESN network as shown in Figure 9-31.

Figure 9-31
The Network Dialing Prefixes screen (fax delivery to internal extensions)

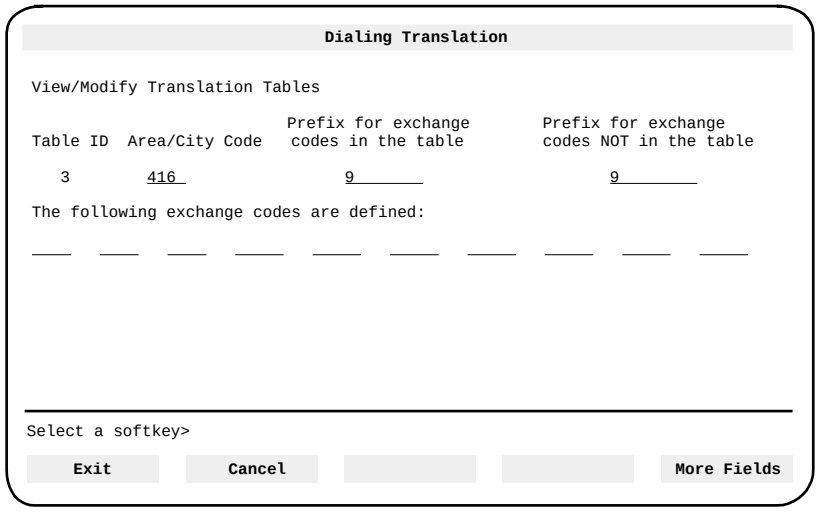


In this configuration, the Network Dialing prefix *must* be blank. This allows callers to enter callback numbers that will not be translated (by having a network dialing prefix added to it). For example, if a caller wants a fax sent to a fax machine at extension 2431, the callers enter 2431 as the fax callback number. If a network dialing prefix is configured (9 for example), the system would append it to the extension number, and generate an invalid DN (92431 for example).

By setting the *Call Back Number Area Code Translation* to "None" and filling the Network Dialing Prefixes screen as shown in Figure 9-31, sites in North America can allow remote callers from other sites to enter ESN numbers in the format they are used to entering (6-ESN-XXXX). Whereas if *Call Back Number Area Code Translation* is set to "North American Plan", callers cannot enter their ESN number, but instead must enter a 10-digit callback number in the format NPA-NXX-XXXX.

At least one translation table (for the local site's area code) needs to be configured for this application (as shown in Figure 9-32) to handle local calls since the *Network Dialing Prefix* field is blank. Local calls are, therefore, handled in the following way. If a callback number in the 416 area is entered by an external caller, it will be prefixed with 9 to generate a dialable DN. No exchange codes need to be defined in this translation table unless there are exceptional dialing scenarios within that area code.

Figure 9-32
The View/Modify Translation Tables screen (public network dialing)



AMIS networking is not impacted by this configuration. For example, a user at a remote AMIS site that is in the 416 area code sends a message to a local user. The local user uses the reply feature to respond. The number in the original message header (267-5555 for example) is translated to 9-267-5555 according to the translation table.

Chapter 10: Voice administration

Voice administration comprises all facilities related to processing voice information. These facilities offer a range of functions from the simple playback of a recorded announcement to the more sophisticated automated attendant service. This chapter discusses voice services administration by the following topics:

- voice messaging options
- voice security options
- voice services administration
- outcalling administration
- voice form definitions

This section introduces you to each of these topics.

Introduction to voice messaging options

Voice messaging options determine the general characteristics of the voice messaging service.

If MMUI is installed, these parameters include the broadcast mailbox number, the maximum delay for timed delivery, the name dialing prefix, and the maximum read message retention. The custom call answering greeting is also recorded in this screen (once for each language that is installed on the system).

If VMUIF is installed, these parameters include the lockout revert DN and the maximum read message retention. From this screen, you will also record any introductory tutorials which describe the call answering service to new subscribers, and the login greeting.

Introduction to voice security options

Voice security options allow you to control the level of security provided to users of Meridian Mail. For example, you can set the maximum number of invalid logon attempts that are allowed before a user's mailbox is disabled as well as several parameters related to user passwords. This is also where restriction/permission codes are defined. These codes are applied to various features and are intended to protect your system by preventing users and callers from placing unauthorized calls (such as long distance calls) while connected to Meridian Mail.

Introduction to voice services administration

Voice services administration allows you to add service DNs to the system (and maintain existing DN information), create a Voice Services Profile, and create and maintain services such as Announcements, Thru-Dial services, Voice Menus, Time-of-Day Controllers and Fax Item definitions (if Fax on Demand is installed). These services offer a range of functions from the simple playback of a recorded announcement to the more sophisticated voice menus which allow callers to make choices by pressing keys on their telephone keypads, and automated attendants which take calls during off-hours or holidays.

Note 1: Voice Menus and related services are documented in the *Voice Menus Application Guide* (NTP 555-7001-325).

Note 2: Fax on Demand is documented in the *Fax on Demand Application Guide* (NTP 555-7001-327).

Introduction to outcalling administration

Outcalling administration allows you to specify outcalling parameters which affect the Remote Notification and Delivery to Non-User features.

Note: Outcalling is documented in the *Outcalling Application Guide* (NTP 555-7001-322).

Introduction to voice form definitions

Voice form definitions allow you to develop custom applications that ask specific questions of callers and collect their responses. These applications can be thought of as the electronic equivalent of the traditional paper form or questionnaire.

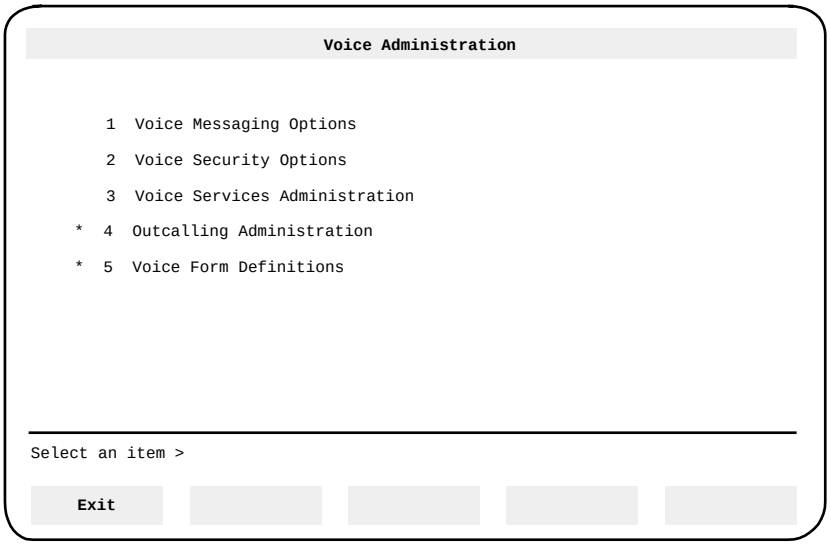
Note: Voice forms are documented in the *Voice Forms Application Guide* (NTP 555-7001-326).

The Voice Administration menu

The Voice Administration menu (Figure 10-1) is displayed when you select item <3> from the Main Menu.

CAUTION
Risk of memory failure during overnight system audits
You should not leave the administrative console in any Voice Administration menu overnight or important system audits may fail due to a lack of available memory.

Figure 10-1
The Voice Administration Menu



*Indicates an option that may not be part of the base software package in your country. If optional and not purchased, these items will not be displayed.

Note: Outcalling is documented in the *Outcalling Application Guide*. Voice Forms are documented in the *Voice Forms Application Guide*.

Procedure 10-1
Selecting items from the Voice Administration Menu

Starting point: The Main Menu

1 Select Voice Administration.

The Voice Administration menu appears (Figure 10-1).

2 Select an item by entering its number and pressing <Return>.

The menu corresponding to your selection appears. See the following sections for details:

1 "Voice messaging options"

2 "Voice security options"

3 "Voice services administration"

4 Outcalling Application Guide (NTP 555-7001-322)

5 Voice Forms Application Guide (NTP 555-7001-326)

3 Use [Exit] to return to the Main Menu.

Voice messaging options

The Voice Messaging Options screen allows you to set voice messaging parameters. If the MMUI interface is installed, this includes setting the broadcast mailbox number, the maximum allowed delay for time delivery, and the name dialing prefix. The custom call answering greeting is also recorded in this screen. For multilingual systems, you can record a custom call answering greeting in all of the languages that are installed on your system. If VMUIF is installed, this means recording various greetings (tutorials and the login greeting), and setting the personal distribution list prefix, the lockout revert DN, and the maximum read message retention.

Setting up address expansion

Address expansion has been provided to make it more convenient for users to enter mailbox numbers when logging in, composing messages or using express messaging. When address expansion is enabled, users will be allowed to enter the shorter local addressing length of the mailbox number rather than the full system addressing length.

For example, the system addressing length is often 10 digits, whereas the local addressing length is 4 digits. If address expansion is not enabled, users have to enter the full 10-digit mailbox number when addressing voice messages or using express messaging. However, when address expansion is enabled, they need only enter the shorter local address length of the mailbox number.

To enable address expansion

1 Make sure the *System Addressing Length* field is set to a value other than zero.

   This field is located in the General Options screen.

2 Specify up to two Local Addressing Lengths.

   The local addressing lengths indicate the short form of users' mailbox numbers. If the MMUI interface is installed, a typical local addressing length is 4 (extension XXXX). If the VMUIF interface is installed, a typical local addressing length is 7 (NXX-XXXX). Local addressing lengths are defined in the Voice Messaging Options screen.

3 Specify the expansion digits.

These are the digits that are used to convert the short form of a mailbox number to the full mailbox number (with a length equal to the system addressing length). These digits must be specified for both Voice Messaging and Express Messaging. They are defined when adding the Voice Messaging DN and Express Messaging DN to the VSDN table. (See the section "Adding DN information" in the "Voice administration chapter.)

Example:

The system addressing length is 10. Therefore, all users' mailbox numbers must also be 10 digits in length. The local addressing length is 7 digits. Numbers are in the format NPA-NXX-XXXX. The NPA is "416" and the NXX is "267".

1 The system addressing length is 10.

2 The local addressing length is 7.

3 The expansion digits (for Voice Messaging and Express Messaging) are specified when adding a DN to the VSDN Table in Voice Services Administration.

The expansion digits are "416".

When a user composes a message to another user, he or she will only have to enter the 7-digit mailbox number, not the full 10-digit mailbox number.

Address reduction is the complement of address expansion. Reduction is used when addresses are played back to the mailbox owner. The address is reduced to a local addressing length based on the user's mailbox number.

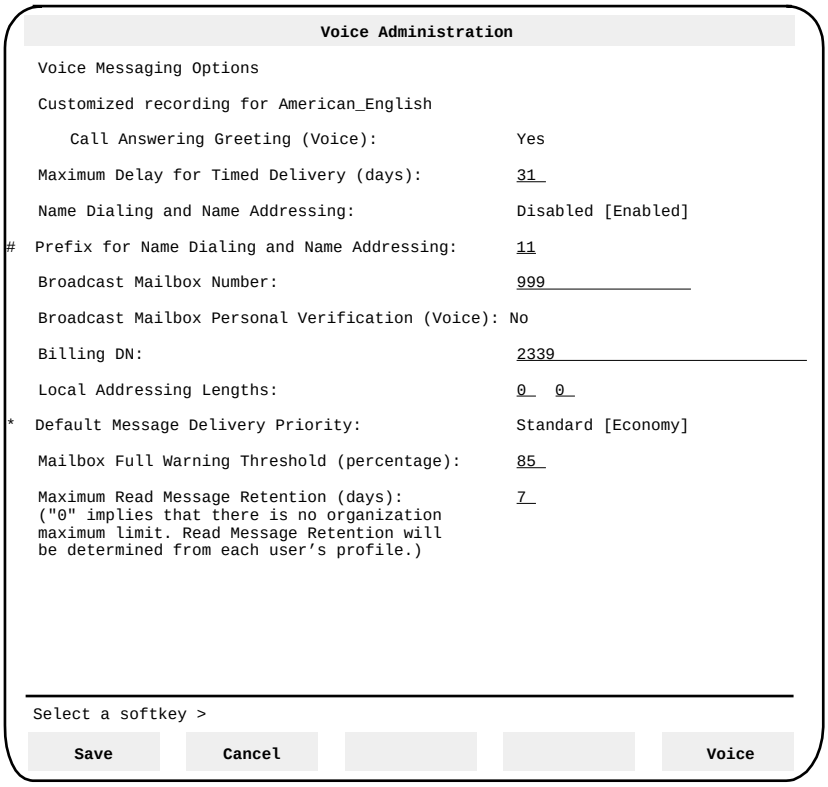
For example, the system addressing length is 10 and the local addressing length is 7. The owner of mailbox number 416-555-1009 plays a message that was received from address 416-556-2090. In the header, the address is played as *"... from phone number 556-2090"*. If the area code of the calling party was different from the user's area code, it would be included in the header.

The Voice Messaging Options screen

This screen will display different fields depending on a) which interface is installed (MMUI or VMUIF) and b) whether or not multiple languages are installed. Figure 10-2 displays the screen for a single language system with the MMUI interface. Figure 10-3 displays the screen for a multilingual

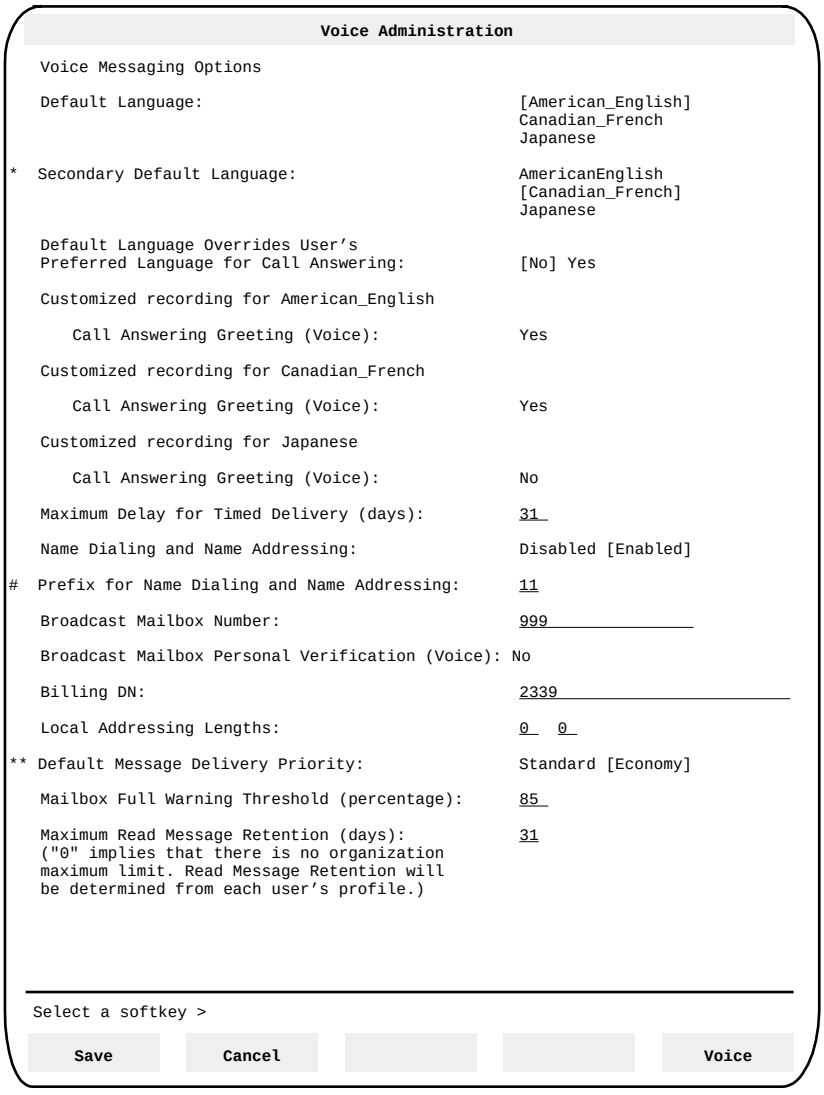
system with the MMUI interface. Figure 10-4 displays the screen for a single language system with the VMUIF interface, and Figure 10-5 displays the screen for a multilingual system with the VMUIF interface.

Figure 10-2
The Voice Messaging Options screen for single language systems (MMUI interface)



\# This field is displayed only if the Name Dialing and Name Addressing field is set to "Enabled".
* This field is displayed only if Meridian Networking is installed.

Figure 10-3
The Voice Messaging Options screen for multilingual systems (MMUI interface)



* This field is displayed only if Dual Language Prompting is installed.
**This field is displayed only if Meridian Networking is installed.
\# This field is displayed only if the Name Dialing and Name Addressing field is set to "Enabled".

The following fields are displayed when the MMUI interface is installed. The first three fields appear only on multilingual systems. (For VMUIF field descriptions, see page 10-16.)

- ***Default Language*** This field displays all of the languages that are installed on your system. (Additional languages can only be installed by a Nortel representative.) The primary default language (the first language installed) is highlighted. The selection made here determines the language in which prompts are played to callers during call answering and express messaging sessions.
- ***Secondary Default Language*** This field is available only if the Dual Language Prompting feature is installed. When this feature is installed, introductory Meridian Mail prompts are played in two languages. A prompt is first played in the primary default language (as specified in the previous field) followed by the secondary default language as specified in this field. Dual language prompting is designed for bilingual environments and is only used for initial prompting when the caller's language preference is not known.

  Dual language prompting only applies to call answering and express messaging sessions.
- ***Default Language Overrides User's Preferred Language for Call Answering*** When two or more languages are installed, Meridian Mail users can specify a "preferred" language which is different from the default language. (The preferred language is defined in the Add or View/Modify Local Voice User screen.) When this field is set to "No", callers will hear Meridian Mail prompts in the preferred language of the user they have called. However, if this field is set to "Yes", the language specified in the *Default Language* field overrides the user's preference. This may be desirable if you wish to present a common language to all callers regardless of the preferred language of the called party.

  When set to "Yes", only those prompts that are played to callers during call answering and express messaging sessions are affected. Users will still hear prompts in their preferred language while they are logged on to Meridian Mail. For example, if the default language is AmericanEnglish, and a user's preferred language is Japanese, the user will still hear Meridian Mail prompts in Japanese. However, callers will hear prompts in English.

- ***Customized recording for <language>*** On multilingual systems, this field is displayed once for each language that is installed.

  - ***Call Answering Greeting (Voice)*** This field indicates whether or not a custom call answering greeting has been recorded. The call answering greeting is played to external callers when they are connected to a user's mailbox through call answering. This greeting is played before any personal greetings and typically contains the spoken name of the organization. This greeting is also played when a Remote Notification call is answered. To make a custom greeting, use the [Voice] softkey at the bottom of this screen. If you do not record your own greeting, no call answering greeting is played (there is no default greeting).

- ***Maximum Delay for Timed Delivery (days)*** This field displays the maximum number of days that a message can be delayed before being delivered. For example, a user may compose a message that he or she does not want delivered until one week from now. The user can tag the message for timed delivery and specify when the message is to be delivered as long as it falls within the limit set by this field.

  The valid range is from 0 to 365 days. The default is 31. To disallow users from tagging their messages for later delivery, set this field to 0.

- ***Name Dialing and Name Addressing*** This field allows you to disable the name dialing and name addressing features. These features should be disabled in those countries where the telephone keypads do not map to an alphabetical sequence recognizable to Meridian Mail. This field defaults to "Enabled".

  Note: If you disable name dialing and name addressing and then reenable them, the prefix for name dialing and name addressing is changed from the current value to null. Be sure to enter the correct prefix if you reenable these features.

- ***Prefix for Name Dialing and Name Addressing*** This field is displayed only if the previous field, *Name Dialing and Name Addressing*, is enabled. This field defines the prefix that users must dial in order to use name dialing (during thru-dial) or name addressing (during message composition) . When the system encounters this number, the data that is entered via the telephone keypad is processed as a name instead of a number. The valid range is from 1 to 99. The default is 11.

Note: Ensure that this number does not conflict with any of the following:

- mailbox numbers (including the broadcast mailbox number)
- telephone extensions
- distribution list numbers
- the DNU prefix
- network location prefixes
- the AMIS compose prefix

These numbers conflict if they start with the name dialing prefix.

Note: If name dialing and name addressing were disabled and then reenabled, this field is reset to null.

- ***Broadcast Mailbox Number*** A broadcast message is a voice message that is delivered to all users in the system. In order to send a broadcast message, you (or a user) must specify a special mailbox number (the broadcast mailbox number) when composing the broadcast message from a mailbox with broadcast capability. (Broadcast capability is enabled in the user's class of service.)

  The default mailbox number is 999.

  If this default number conflicts with the ESN access code and causes a conflict (for example, if 9 is used as the ESN access code), change the broadcast mailbox number. If you change the broadcast mailbox number for this reason (or any other reason), ensure that the new number does not conflict with other numbers in the system.

- ***Broadcast Mailbox Personal Verification (Voice)*** This field indicates whether or not a spoken name has been recorded for the broadcast mailbox. If recorded, this verification is announced when composing a message to the broadcast mailbox. It confirms that the correct number has been entered. The verification is recorded using the [Voice] softkey at the bottom of the Voice Messaging Options screen.

- ***Billing DN*** Whenever an outgoing call is made, it is charged against a DN. Typically, the mailbox number of the user that initiates the outcall is stored and used for billing purposes. However, if for some reason the mailbox number is not known (if for example, the call is dropped), the Billing DN will be used instead. It is essentially a standby DN for those cases in which the mailbox number is unattainable. This DN can be up to 30 digits in length. This field is optional and can be left blank. The default is "null".

- ***Local Addressing Lengths*** These fields specify the length of the mailbox numbers that must be entered by users. You can enter up to two addressing lengths. However, in most cases, you will only need to define one addressing length.

  This field is applicable only if the *System Addressing Length* field (in the General Options screen) is set to a value greater than "0". If the *System Addressing Length* is greater than "0", this field and the *Expansion Digits* field (in the Add DN Information screen in Voice Services Administration) will have to be configured.

  By defining the local addressing length and expansion digits, users will not have to enter the full system addressing length of the mailbox number. If a user enters a mailbox number that is the same length as one of the local addressing lengths, then the number will be expanded to the system addressing length, allowing users to enter the shorter local addressing length of the mailbox number that they are used to using.

  These values must be less than the system addressing length or 0. Both fields default to "0".

- ***Default Message Delivery Priority*** This field is displayed only if Meridian Networking is installed. The setting determines when messages are delivered across a network. When "Standard" is selected, messages are retained for a certain period of time before they are sent to remote sites. If "Economy" is specified, messages are sent at a specific time each day (usually off hours). The Standard holding time and Economy initiation time are set in the Network Scheduling Parameters screen, accessible through the Network Administration Menu. (See the *Networking Services Administration Guide*, NTP 555-7001-335.) The default is "Standard".

- ***Mailbox Full Warning Threshold (percentage)*** This field allows you to determine how full a user's mailbox must become before the system plays the mailbox full prompt when the user logs on. A value of 0 means that the user will never hear the mailbox full warning prompt. The valid range is 0 to 100 (percent), and the default is 85.

  Note: A user may inform you that he or she has received the mailbox full warning, but that the mailbox is definitely not full. For example, the user is certain that there are only two short messages in the mailbox. (Also, time-stamped messages may be taking up additional space.) A prematurely full mailbox is caused by an unexpected system reboot that leaves inconsistencies between the volume server and what is actually in the mailbox. This problem will be fixed automatically during the scheduled nightly audit. However, if an unexpected reboot happens at a busy traffic time, you can log on at the Tools level and select the menu item "Audit all volumes". This will update the real mailbox storage information that is stored on disk and prevent prematurely full mailboxes. See the *System Administration Tools Guide* (NTP 555-7001-305) for more information about this tool.

- ***Maximum Read Message Retention (days)*** This field determines the maximum number of days that messages will be kept in the user's mailbox after being read. When the maximum is reached, read messages are deleted. The valid range is from 0 to 31 days. If this field is set to 0, messages are not deleted by the system and are retained until deleted by the user. The default is 7 days. For Dial Pulse subscribers, the default is 3.

  Note: The read message retention limit can also be configured in the Add or View/Modify Class of Service screen (see the "Class of service administration" chapter). The user's limit is overridden by the limit defined here (for a value other than zero).

Figure 10-4
The Voice Messaging Options screen for single-language systems (VMUIF Interface)

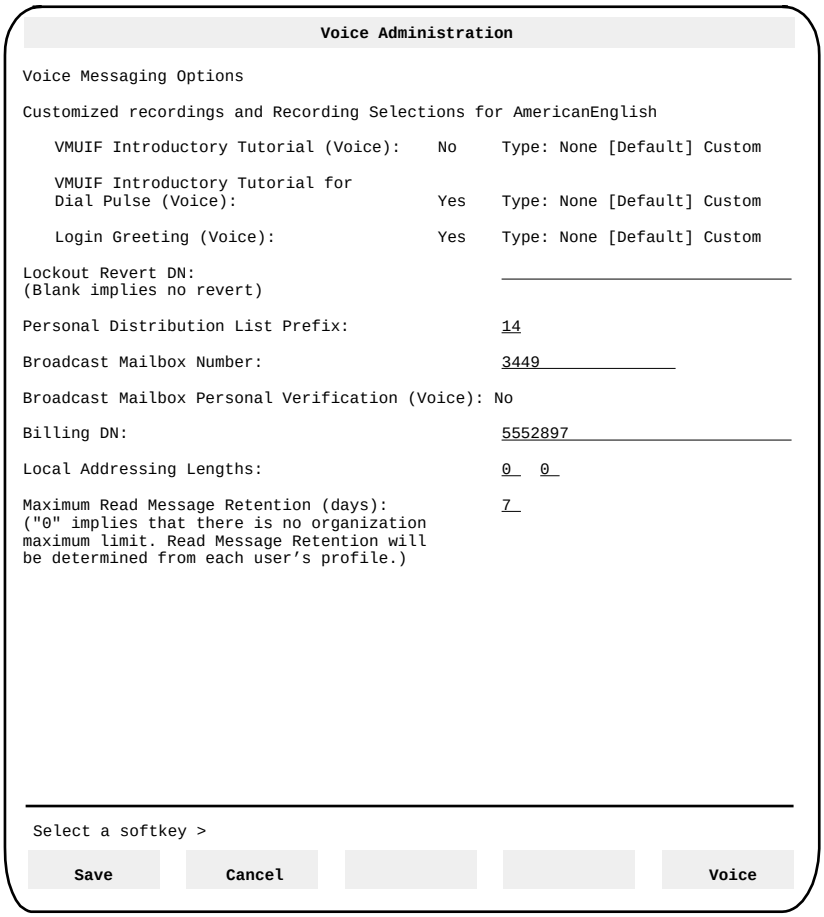
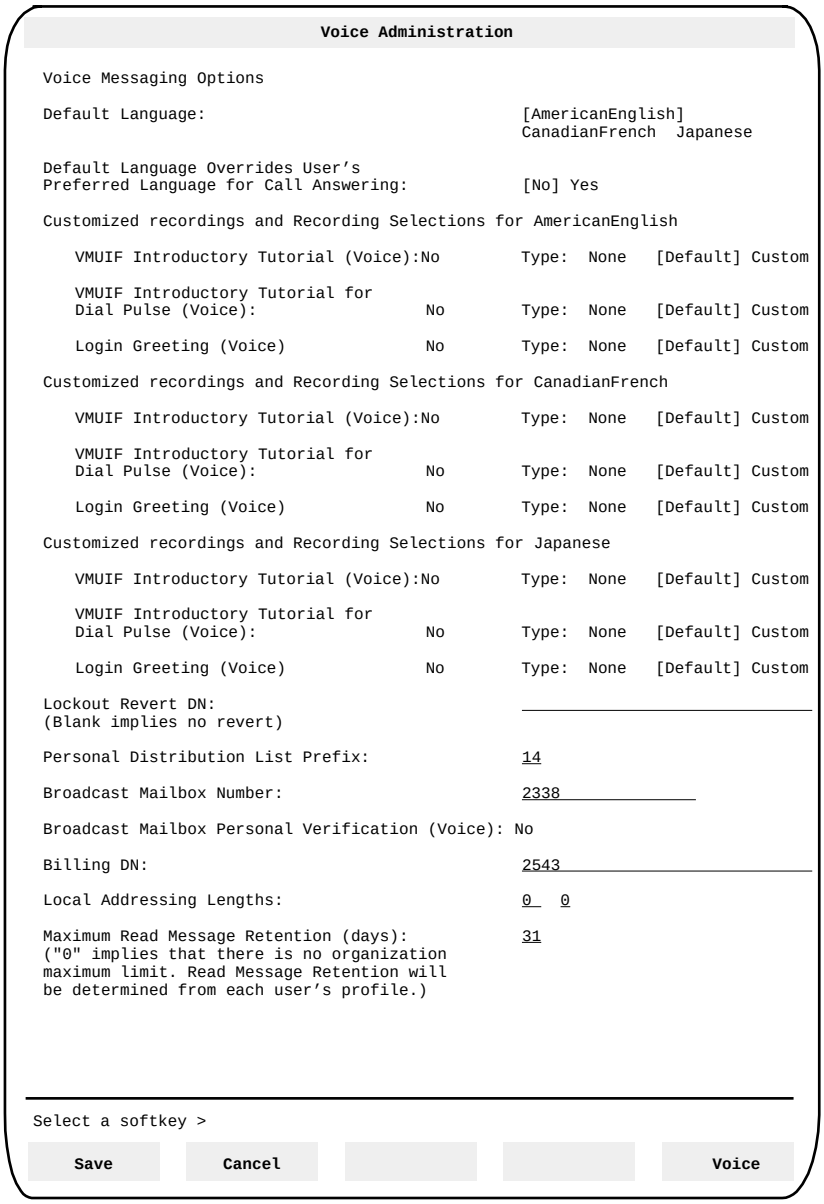


Figure 10-5
The Voice Messaging Options screen for multilingual systems (VMUIF Interface)



The following fields are displayed if VMUIF is installed. The first three fields are displayed on multilingual systems only.

Note: VMUIF is not available on Meridian Mail systems connected to a third-party switch (NEC, AT&T, or ROLM).

- ***Default Language*** This field displays all of the languages that are installed on your system. (Additional languages can only be installed by a Nortel representative.) The primary default language (the first language installed) is highlighted. The selection made here determines the language in which prompts are played to callers during call answering and express messaging sessions.
- ***Default Language Overrides User's Preferred Language for Call Answering*** When two or more languages are installed, Meridian Mail users can specify a preferred language which is different from the default language. (The preferred language is defined in the Add or View/Modify Local Voice User screen.) When this field is set to "No", a caller will hear Meridian Mail prompts in the preferred language of the called party during a call answering session. However, if this field is set to "Yes", the language specified in the *Default Language* field overrides the user's preference.

  When this field is set to "Yes", only those prompts that are played to callers during call answering sessions are affected. Users will still hear prompts in their preferred language while they are logged on to Meridian Mail. For example, if the default language is "AmericanEnglish", and a user's preferred language is Japanese, the user will still hear Meridian Mail prompts in Japanese. However, callers leaving messages will hear prompts in English.
- ***Customized recordings and Recording Selections for <language>*** The following fields are displayed once for each language:
  - ***VMUIF Introductory Tutorial (Voice)*** This field indicates whether or not a voice recording has been made for the introductory tutorial. The introductory tutorial is played to subscribers when they log on for the first time in order to familiarize them with the service. If a custom recording has been made, the following field, *VMUIF Introductory Tutorial Type*, will allow you to select "Custom".

- ***VMUIF Introductory Tutorial Type*** This field identifies the type of introductory tutorial to be played the first time a user logs into a new mailbox. The "Custom" option is available if there is a voice recording of the introductory tutorial. If you do not record a custom tutorial, you can play the default recording. You also have the option of playing no introductory tutorial at all.
- ***VMUIF Introductory Tutorial for Dial Pulse (Voice)*** This field indicates whether or not a custom voice recording has been made for the tutorial for dial pulse users. If a recording is made, the following field, *VMUIF Introductory Tutorial for Dial Pulse Type*, will allow you to select "Custom".
- ***VMUIF Introductory Tutorial for Dial Pulse Type*** This field identifies the type of introductory tutorial to be played the first time a user logs into a new mailbox from a dial pulse (rotary) telephone. The "Custom" option is available if you have recorded your own custom tutorial. If you did not create your own tutorial, you can choose to play the default tutorial or no tutorial at all.
- ***Login Greeting (Voice)*** This field indicates whether or not a voice recording has been made for the Login Greeting. This is the greeting that is played when subscribers log on to Meridian Mail.
- ***Login Greeting Type*** This field determines which greeting is used if there is one. If a login greeting has been recorded (see the previous field), you may select "Custom". If one has not been recorded, you can use the default greeting or select "None".

- ***Lockout Revert DN*** This field specifies the DN to which callers are reverted when the dialed mailbox is disabled (for example, after the subscriber has made too many invalid logon attempts). If you leave this field blank, a prompt is played to callers asking them to try again at a later time.
- ***Personal Distribution List Prefix*** During message composition, users must precede any distribution list numbers with this prefix. The prefix essentially informs Meridian Mail that the number that follows is a distribution list number.

For example, if the prefix is 14 and the user wants to address a message to personal distribution list number 3, mailbox number 2339 and distribution list number 6, the subscriber would enter 14 3# 2339# 14 6## when addressing the message. You may enter a value from 1 to 99. The default is null (that is, this field is blank).

Note: This field cannot conflict with other prefixes defined in the system, such as the AMIS compose prefix and the DNU prefixes.

- ***Broadcast Mailbox Number*** A broadcast message is a voice message that is delivered to all users in the system. In order to send a broadcast message, you (or a user) must specify a special mailbox number (the broadcast mailbox number) when composing the broadcast message. The default mailbox number is 999.

  If this default number conflicts with the ESN access code and causes a conflict (for example, if 9 is used as the ESN access code), change the broadcast mailbox number. If you change the broadcast mailbox number for this reason (or any other reason), ensure that the new number does not conflict with other numbers in the system.

- ***Broadcast Mailbox Personal Verification (Voice)*** This field indicates whether or not a spoken name has been recorded for the broadcast mailbox number. This verification is announced to users before the message is played. It should inform users that the message they are about to hear is a broadcast message (and who it is from, as users may need to get in touch with the sender).

- ***Billing DN*** Whenever an outgoing call is made, it is charged against a DN. Typically, the mailbox number of the user that initiates the outcall is stored and used for billing purposes. However, if for some reason the mailbox number is not known (if, for example, the call is dropped), the Billing DN will be used instead. It is essentially a standby DN for those cases in which the mailbox number is unattainable. This DN can be up to 30 digits in length. This field is optional and can be left blank. The default is "null".

- ***Local Addressing Lengths*** These fields specify the length of the mailbox numbers that users must enter. You can enter up to two addressing lengths. However, in most cases, you will only need to define one addressing length.

This field interacts with the *System Addressing Length* field (in the General Options screen) and the *Expansion Digits* field (in the Add DN Information screen in Voice Services Administration). By defining the local addressing length and expansion digits, users will not have to enter the full system addressing length of the mailbox number. If a user enters a mailbox number that is the same length as one of the local addressing lengths, then the number will be expanded to the system addressing length, allowing users to enter the shorter local addressing length of the mailbox number that they are used to using.

These values must be less than the system addressing length or 0. Both fields default to 0.

- ***Maximum Read Message Retention (days)*** This field determines the maximum number of days that messages will be kept in the user's mailbox after being read. When the maximum is reached, read messages are deleted. The valid range is from 0 to 31 days. If this field is set to 0, messages are not deleted by the system and are retained until deleted by the user. The default is 7 days.

  Note: The read message retention limit can also be configured in the Add or Modify Class of Service screen (see the "Class of service administration" chapter). The limit that is configured in the class of service is overridden by the limit defined here (for a value other than zero).

Procedure 10-2
Modifying voice messaging parameters

Starting point: The Main Menu

1 Select Voice Administration.

2 Select Voice Messaging Options.

The Voice Messaging Options screen appears (Figure 10-2 or 10-3).

3 Move the cursor to the field you wish to modify and make the required changes.

4 Choose step 4a to save the changes or 4b to cancel.

a. Use [Save].

The changes are saved and you are returned to the V oice Administration menu.

b. Use [Cancel].

Changes are discarded and the V oice Administration menu reappears.

Voice security options

The Voice Security Options screen (Figure 10-6) allows you to control various security features and set restriction and permission codes that can be applied to features such as call answering, call sender, Express Messaging, mailbox Thru-Dial, AMIS Networking, Remote Notification, and Delivery to Non-Users.

Restriction/permission codes

Restriction/permission codes are defined in the Voice Security Options screen. Up to four sets of codes can be created. Each restriction/permission set defines which dialing codes are allowed and which are restricted. A dialing code can be up to 5 digits in length and can be one of the following: an access code (for dialing out of the switch, such as 9 for local calls and 91 for long distance calls), an area code, or a country code. Area codes and country codes must be preceded by the appropriate access code, such as 91416, since 91 is needed to dial out of the switch.) An internal extension can also be entered as a dialing code if you wish to restrict certain DNs (such as the President's extension). Each set can contain up to 10 restriction codes and 10 permission codes.

Once the restriction/permission sets are defined, apply them to the features discussed in the following section. This prohibits external callers or internal users from placing certain types of calls (such as local or long distance calls). If local or long distance codes are not restricted and a caller or user places a call using one of the features described in the following sections, you will be charged for the call since the call will have originated from your switch.

Restriction/permission sets can be applied to a number of features in the following screens: the Add (or View/Modify) Class of Service screen, The Voice Security Options screen, and the Add (or View/Modify) a Thru-Dial Definition screen.

The Add (View/Modify) Class of Service screen

For each system, apply a restriction/permission set to the following features in the Add (View/Modify) Class of Service screen.

- ***Custom Revert*** This feature restricts users' custom revert (which users can define on their own through their telephone set).

- ***Extension dialing*** (also known as mailbox Thru-Dial) This feature restricts the (internal) extensions or external numbers to which users are allowed to thru-dial while logged into Meridian Mail.

  Note: This feature is not available if VMUIF is installed.

- ***External call sender*** This feature restricts users from using call sender to dial certain extensions.

- ***AMIS Networking*** This feature restricts outgoing AMIS messages.

- ***Remote Notification*** This feature restricts the target DNs to which remote notifications can be sent (such as long distance).

- ***Delivery to Non-Users*** This feature restricts the numbers to which messages to non-users can be sent (such as long-distance).

The Voice Security Options screen

For MMUI systems, apply a restriction/permission set to the following feature in the Voice Security Options screen:

- ***Call answering/express messaging Thru-Dial*** This feature restricts the numbers to which a user can use Thru-Dial during a call answering or Express Messaging session.

  Note: While someone is involved in a call answering or express messaging session, they can place a call by pressing 0 followed by an internal extension or external number. This is referred to as thru dial and should not be confused with thru-dial services which are one type of voice menu application.

The Add (View/Modify) a Thru-Dial Definition screen

For each Thru-Dial service that you create, select one of the restriction/permission sets that is defined in the Voice Security Options screen, or customize a restriction/permission set specifically for a particular thru-dial service in the Add a Thru-Dial Definition screen.

Creating a restriction/permission set

You can create four separate restriction/permission sets in the Voice Security Options screen. However, for any feature (except thru-dial services) you can only apply one of the four sets that you define here. There are, therefore, different ways to approach restriction/permission codes. For example, you can create one set that only allows dialing/messaging to extension DNs that reside on the switch; a second set that allows only local calls; a third that allows long distance calls but not international calls; and perhaps a fourth that allows local, long distance and international calls (to certain country codes only). It is, however, up to you to decide on the types of restriction/permission sets that you require.

Restriction/permission codes are entered in the field *List Names and Codes* in the Voice Security Options screen (see Figure 10-6).

ATTENTION
All features are initially restricted

When Meridian Mail is installed, all 10 restriction fields are filled in (unless you have upgraded from a prior release). The first restriction code is defined as 0, the second is 1 and so on to the tenth code which is defined as 9. This means that all possible extensions and phone numbers are restricted and, therefore, none of the features to which you can apply restriction/permission codes will work.

If you do not change the restriction/permission sets to permit certain numbers, the following features will not work:

- Users will not be able to dial any extensions.
- Call sender will not work.
- Users will not be able to send AMIS messages (although they will be able to receive them).
- Users will not be remotely notified of their messages.
- Users will not be able to send messages to non-users.
- Callers will not be able to thru dial during call answering or express messaging sessions.

- Thru-Dial services will not work.

  Note: If you have upgraded from a prior Meridian Mail release, the restriction and permission codes remain the same. They are not overridden during the upgrade.

Defining restriction and permission codes

Example

You want to create a restriction/permission set that restricts all long distance calls except calls to the area code 416 and 911 calls. The access code for making long distance calls is 91. Fill out the restriction/permission set as shown as follows.

```
List Name:          LongDistance

Restriction  Codes: 91   ____  ____  ____  ____  ____  ____  ____  ____  ____

Permission   Codes: 91416  911  ____  ____  ____  ____  ____  ____  ____  ____
```

Permission codes are exceptions to the more general rules dictated by the restriction codes. In this example, all calls beginning with 91 are disallowed, *except* for those beginning with 91416 and 911.

Permission codes that are shorter than a restriction code but which match a subset of such a code are not restricted. For example, if 1614 is a restricted code, the DN 161 is not restricted. In this example, calls beginning with 91 (long distance calls) are restricted. However, calls beginning with 9 (followed by a digit other than 1) are permitted. Therefore, local calls would be permitted in this example. (To create a restriction/permission set that restricts local calls, but not long distance calls, you would enter 9 as a restriction code and 91 as a permission code.)

When a number is dialed, the system checks the restriction and permission codes to see if the number is allowed. The following actions are performed in the order described as follows:

1 The DN is compared to the restriction codes. If the dialed DN is preceded by or equal to a restriction code, the DN is compared to the permission codes to see if it is an exception.

  If the DN is not restricted, or if it is an exception, the DN is called.

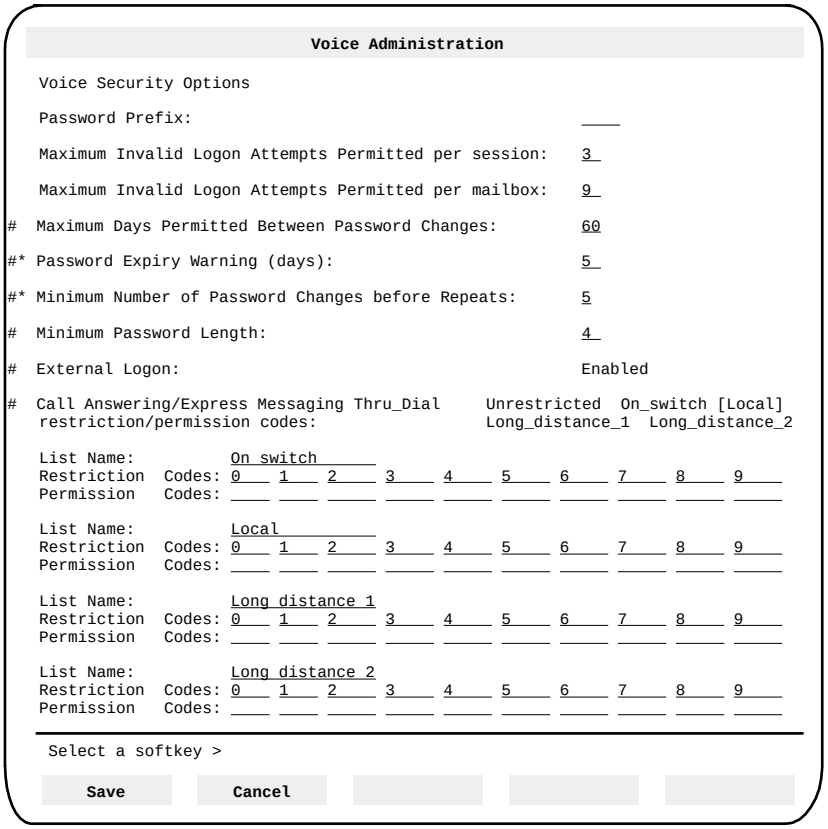
2 The restricted DN is compared to the permission codes. If it is preceded by or equal to a permission code, the DN is dialed. If it is not preceded by or equal to a permission code, the DN is not dialed.

When a call is not permitted, the user/caller hears a system message indicating that the number can’t be reached from the service.

The Voice Security Options screen

The Voice Security Options screen allows you to configure parameters that affect mailbox security. These parameters primarily have to do with invalid logon attempts and passwords. This is also where you define the four restriction/permission sets which are then assigned to a number of features. Once defined, you can apply a restriction/permission set to call answering/express messaging thru-dial in this screen.

Figure 10-6
The Voice Security Options screen



* These fields are displayed only if Maximum Days Permitted Between Password Changes is greater than 0.
\# These fields are not displayed if VMUIF is installed.

The following fields are displayed:

- ***Password Prefix*** This prefix is optional. (The field is blank by default, meaning no prefix will be assigned to mailbox passwords.) If this prefix is defined, it will be inserted at the beginning of the default mailbox password *when a new mailbox is created.* For example, when a new mailbox is created, the default password is the user's extension (such as 2339). If the prefix is 319, the password would be 3192339.

  Note: The password prefix is not used for VMUIF users.

When a user changes his or her password, the password prefix is no longer used. If, for example, the user changes his password from the initial default password of 3192339 to 4518, the password would be 4518, not 3194518.

When you change the password prefix, passwords for existing mailboxes are not affected. When the password prefix is modified, it affects only those mailboxes that are created after the change.

This field is blank by default and is optional. If you enter a prefix, it can be up to 4 digits in length. (When you define a value, existing mailboxes will not be affected since this prefix is added only when a mailbox is created.)

This prefix should be changed on a regular basis to reduce the risk of security breaches.

Note: Due to the maximum length of a password, the password prefix plus the user's DN cannot exceed 16 digits.

- ***Maximum Invalid Logon Attempts Permitted per session*** This field determines the maximum number of times that a user can make an invalid logon attempt within a single session. (This limit also applies if the user tries to log on to a number of different mailboxes.) When this maximum is reached within one session, the session will be terminated. When the user logs on the next time (and a new logon session is initiated), this counter is reset to "0". You may enter a value from 1 to 99. The default is "3".

- ***Maximum Invalid Logon Attempts Permitted per mailbox*** This field specifies the maximum number of unsuccessful logon attempts allowed for each mailbox. (This is a cumulative number.) When the limit is reached, the mailbox is disabled and the user is not able to log on. The range is from 1 to 99. The default is 9.

  For MMUI systems, go to the View/Modify Local Voice User screen and enable the *Logon Status* field to reenable a mailbox.

  If VMUIF is installed, a lockout duration is configured in the subscriber's class of service. If a value other than zero is specified, the subscriber's mailbox will automatically be reenabled after the specified time has passed. If zero is specified, the administrator will have to manually reenable the mailbox in the View/Modify Local Voice User screen by setting the *Logon Status* field to "Enabled".

- ***Maximum Days Permitted Between Password Changes*** (MMUI only.) This field determines the maximum number of days allowed between password changes. If you do not want users to have to change their passwords, set this field to 0.

  If this field is set to a value other than zero, and a user allows his or her password to expire, the user will be prompted to change the password the first time he or she logs on after the password has expired. (The current password expires after the exact number of days specified in this field, including partial days.) The user will not be allowed to log on and retrieve messages until the password has been changed. The valid range is from 0 to 90. The default is 0.

  Note: If this field has been set to 0 on an operational system and you then decide to enforce password changes by setting it to a value other than zero, warn users to change their passwords *immediately*. (You should inform them that they will now be forced to change their passwords every x days.) If you change this value from 0 to a value other than zero, user passwords will expire immediately. After the change, when users log in, they will be prompted to change their passwords. If they do not do this (and hang up instead), this will cause a heavy system load and the system will slow down. (The system will also generate a number of 3134 DR SEERs during this update period.) If you are planning on changing this value to a value other than zero, it is recommended that you do so during a slow traffic time.

- ***Password Expiry Warning (days***) This field appears only when the interface type is MMUI and the *Maximum Days Permitted Between Password Changes* field is set to a value greater than 0. The value you enter determines the number of days advance notice given to a user before their password expires. The range is from 0 to 60. The default is 5.

- ***Minimum Number of Password Changes before Repeats*** This field appears only when the interface type is MMUI and the field *Maximum Days Permitted Between Password Changes* is set to a value other than zero. This number determines the number of password changes required before the same password can be reused. The range is from 0 to 5. The default is 5.

- ***Minimum Password Length*** (MMUI only) This field determines the minimum number of digits required in passwords that are entered from a telephone keypad. This includes mailbox passwords, the access password used to restrict access to voice menu applications and the update password used to update voice menu applications from a DTMF phone set. (It does not include the administration password that is entered when logging on at the administration terminal.)

  The default is 4. This is also the minimum. You cannot enter a value less than 4 in this field. The maximum value you can enter is 16.

- ***External Logon*** (MMUI only) This is a read-only field in the Voice Security Options screen and it is enabled by default. When enabled, access to voice messaging from external trunks is allowed. If, for security reasons, you need to disable external logon, this can only be done by a field service representative.

CAUTION
Risk of loss of access to external trunks
Once external logon is disabled, access from external trunks is permanently revoked. External logon cannot be reenabled.

- ***Call Answering/Express Messaging Thru-Dial Restriction/Permission codes*** (MMUI only) Select the restriction/permission set that will apply to call answering thru dial and express messaging thru dial. The selection made here affects all users in the system. (Restriction/permission codes are specified in the fields below.)

  Call answering and express messaging thru dial allows callers who are connected to Meridian Mail during call answering or express messaging sessions to place calls by pressing 0 followed by an extension DN or an external phone number. This can become a crucial security hole in your system if restriction codes are not put in place to prevent callers from placing calls which will be charged to your organization.

You can either choose to leave call answering and express messaging thru-dial unrestricted (this is not recommended) or choose from one of the four options displayed in Figure 10-6. (Note that On_switch, Local, Long distance 1, and Long distance 2 are the default names and may be different on your system.)

- ***List Name*** The default list names are "On Switch", "Local", "Long distance 1", and "Long distance 2". You may change these names but the name field cannot be left blank. The default names suggest the types of access codes you may want to group together. The "On Switch" set may be used to allow on-switch dialing and messaging only. The "Local" group may allow on-switch and local calls only. "Long distance 1" and "Long distance 2" may allow long distance dialing to certain area codes but not others and can then be applied to different features. For example, Feature 1 (thru-dial services) might need different long distance restrictions than Feature 2 (custom revert DN).

  Once a restriction/permission list is defined, it can be applied to the following services in your class of service definitions: Extension Dialing (MMUI only), Custom Revert, External Call Sender, AMIS Networking, Remote Notification, Delivery to Non-User. This is done from the Add or View/Modify Class of Service screen (see the "Class of Service administration" chapter).

- ***Restriction Codes*** Any extension numbers or phone numbers beginning with any of these codes are restricted. When this occurs, a prompt is played indicating that the number can’t be reached from the service. Up to 10 codes can be defined. Each code can be up to 5 digits.

- ***Permission Codes*** Permission codes are exceptions to the rules defined by the restriction codes. For example, if 2 is a restriction code, yet you want to allow calls to area code 214, then you would enter 214 as a permission code. Up to 10 codes can be defined. Each code can be up to 5 digits.

  Note: Please read the section "Restriction/permission codes" on page 10-21 before configuring these fields.

CAUTION
Risk of disabling Remote Notification
If you change the restriction codes so that a user's target Remote Notification DNs are rendered invalid, Remote Notification is disabled for that user until the target DN is changed.

Procedure 10-3
Setting voice security parameters

Starting point: The Main Menu

1. Select Voice Administration.
2. Select Voice Security Options.

   The Voice Security Options screen appears (Figure 10-6).
3. Move the cursor to the appropriate field and make your changes.
4. Choose step 4a to save the changes or 4b to cancel.
   a. Use [Save].

      The changes are saved and you are returned to the V oice Administration menu.
   b. Use [Cancel].

      Changes are discarded and the V oice Administration menu reappears.

Types of services

The following are the different types of services that you can make available to your subscribers. Some of these features may not be installed on your system. Some, like Meridian Networking, AMIS Networking, and Meridian ACCESS are optional features that must be purchased separately. Certain features are part of the base software package in some countries, but optional in other countries (these include Voice Menus, Outcalling, Voice Forms, and Fax on Demand).

Voice messaging services

Voice Messaging

This service provides call handling and message storage capabilities, thus allowing a user's mailbox to function like an answering machine, taking calls when the user is away from or currently on the phone. If a caller rings

a user's phone, the caller is connected to the user's mailbox. The caller hears a greeting (which may or may not be recorded in the user's voice) and is prompted to leave a message after the tone. This is the call answering aspect of the Voice Messaging service.

In addition, voice messaging also provides facilities that permit users to compose and send voice messages. For example, a user can compose a message and then send it to a number of people. Or a caller can record a message and then request that it be sent at a later date.

MMUI classes of service provide all subscribers with compose and send capability.

VMUIF classes of service contain a field called *Compose Capability*. If this field is set to "No" (the default), subscribers belonging to the COS will only have call handling and message storing capabilities. They will not be able to compose and send messages.

Furthermore, for VMUIF classes of service, dial pulse support can be provided to those users who do not have touch-tone phones. This is done by setting the field *Dial Pulse Support* to "Yes". This simplified interface does not require any keypad commands unlike the standard VMUIF interface or the MMUI interface.

Express Messaging

Express Messaging allows users to directly place a message in another user's mailbox without first ringing the destination phone. Users first dial the Express Messaging directory number to indicate they want to use this service. They are then prompted for the mailbox. A personal verification (if recorded) is played to confirm they have reached the correct user and they are prompted to leave a message.

> ***Note for Meridian Networking users:*** Users can only use express messaging to deposit a message into another local voice user's mailbox. If networking is installed, express messaging cannot be used to send a message to a user at a remote site, even if that user is defined on the system as a remote voice user.

Outcalling (Remote Notification and Delivery to Non-User)

Remote Notification allows users to be informed of new messages at a remote phone or pager. Delivery to Non-User allows users to compose and send messages to people outside of the Meridian Mail system. Refer to the *Outcalling Application Guide* (NTP 555-7001-323) for details.

Voice Menus and related services

If the Voice Menus feature is installed, you will have the ability to create custom call answering applications. These applications allow callers to listen to recorded information (Announcements), leave messages for specific users, or place calls (Thru-Dial services). They can route callers to particular services based on the time of day (business hours or off-hours) and can handle calls that are received during holidays by passing callers to the appropriate service (time-of-day controllers). The Voice Menus feature is comprised of the following voice services.

Announcements

This service allows you to record messages that can be played back within a voice menu, or as a stand-alone service that is directly dialable.

Thru-Dial services

This service accesses predefined DNs or user-prompted DNs that can be used within a voice menu service, or as a separate service with a directory number. Thru-dial services can be created to provide a variety of dialing options to users of Meridian Mail. Thru-Dial services can be set up to allow Name Dialing, and can have restrictions barring users from dialing unauthorized numbers (such as long distance access codes).

Time-of-day controllers

This service allows you to control the activation of voice services based on the date and time at which a call is received. This allows you to control the availability of voice services during off-hours and holidays.

Voice Menus

This service allows you to create single-layered or multilayered menus which present callers with a series of choices about the actions they can perform. A caller selects an action by pressing the key (on the telephone keypad) that corresponds to the action.

Voice Prompt Maintenance

This service allows you or your delegates to modify the various prompts and greetings available in your Voice Menus and Announcements using a telephone. See the chapter "Making recordings" for information about using this service.

Remote Activation

This service allows you to enable or disable voice services while you are off-site, through a standard DTMF telephone set.

For more information, see "Voice services administration" later in this chapter. To determine how many voice services can be created, see the technical specifications in the *Meridian Mail General Description* (NTP 555-7001-101).

Fax on Demand

Fax on Demand is a Meridian Mail feature that allows a caller to obtain information in the form of a fax. The fax information is stored in Meridian Mail and is sent on request to a fax device.

Depending on how the Fax on Demand application is configured, fax documents may be stored as stand-alone, directly-dialed fax items or as items selected from voice menus.

Depending on how the Fax on Demand application is configured and on whether the caller is using a fax phone, fax information may be delivered as part of the call requesting the information, or later, by callback to the caller's fax device.

Fax information service (FI)

The Fax Information service is the service by which a caller accesses fax items stored in Meridian Mail. A Fax Item can be set up to be directly dialed, or to be accessed indirectly through a voice menu.

If the service is configured to support either same call or caller choice delivery, then the service must be serviced by full service multimedia ports. If the fax delivery mode is callback only, then the service can terminate on full service voice ports.

Fax Item Maintenance (FIM)

The Fax Item Maintenance service is used to maintain the content of fax items via a fax phone from a remote location. When fax content is changed, the new fax content can be checked by having a verification fax sent immediately to the administrator or to the owner/sponsor of the information.

The Fax Item Maintenance service requires full service multimedia ports.

Voice Forms

Voice forms administration

Administration involves the creation of applications that collect voice information from callers. An application consists of a series of questions, played in sequential order, to which callers give voice responses. It is as if

callers are filling in a form over the phone. Refer to the *Voice Forms Application Guide* (NTP 555-7001-326) for details.

Voice forms transcription

Transcription refers to the process of retrieving the information collected by a voice form application. Once retrieved, the data can be processed in a number of ways, depending on how the information will be used and the goal you intend to achieve by collecting the information. Refer to the *Voice Forms Transcriber User Guide* for details.

AMIS networking

This service allows users to send and receive messages to or from users of other types of remote voice messaging systems that also use the AMIS protocol (which may include non-Meridian Mail systems). Users can also reply to the originator of an AMIS message. Predefined passwords or site information are not required in order to send, receive or reply to messages.

This feature is documented in the *Networking Services Administration Guide* (NTP 555-7001-335).

Meridian Networking

This is a proprietary networking service that allows users at your site to send messages to and receive messages from users at remote Meridian Mail sites. Meridian Networking provides enhanced capabilities above and beyond AMIS Networking. See the "Meridian networking administration" chapter in the *Networking Services Administration Guide* (NTP 555-7001-335).

Note: This feature is not compatible with the VMUIF interface.

Meridian ACCESS

Meridian ACCESS is an optional software program. It uses a Unix interface to provide a development tool for creating specialized voice service applications such as banking-by-phone and order entry-by-phone where the system places orders for callers based on the caller input on a tone-generating telephone. ACCESS applications provide users with access to computer systems without the need for complicated terminals or a human intermediary. ACCESS applications can make use of the full range of voice and telephony functions that a digital voice processing system and a telephone switching system can offer. No special voice or telephone interface cards are needed as the DMS and Meridian Mail together provide all of the necessary resources. ACCESS can be used to create applications for incoming or outgoing calls or for administrative purposes.

Meridian ACCESS allows customers to provide specialized services combining the convenience of a telephone with the power of a computer. Often these services are Interactive Voice Response (IVR) applications, which enable a person to retrieve information or place an order over the telephone simply by pressing the telephone keys.

Meridian ACCESS applications can be developed to meet a wide variety of requirements. An application can receive or place telephone calls, play prompts, receive "input" in the form of digitone keypresses (which can be interpreted as commands or data), transfer calls, record messages, and use Meridian Mail services-all of these functions can be built into a voice service that is tailored to meet special requirements.

The following NTPs document Meridian ACCESS:

- *Meridian ACCESS Configuration Guide* (NTP 555-7001-315)
- *ACCESS Developer's Guide* (NTP 555-7001-316)
- *ACCESS API Reference Manual* (NTP 555-7001-317)
- *Voice Prompt Editor User's Guide* (NTP 555-7001-318)

Configuring Meridian Mail services

The configuration of Meridian Mail services involves steps both in Meridian Mail and on the DMS/SL-100.

DMS/SL-100 configuration involves setting up UCD queues and line DNs for Meridian Mail services. Meridian Mail configuration involves configuring ports and allocating them to UCD queues, making sure the Channel Allocation Table is configured properly and adding DNs to the VSDN Table.

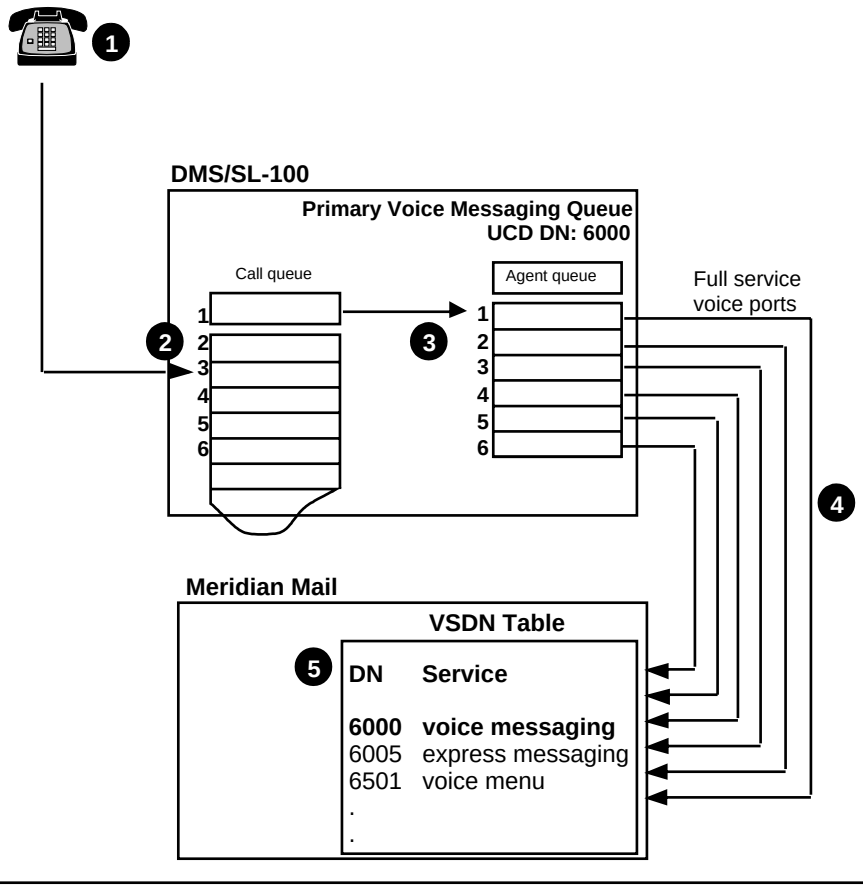
Uniform Call Distribution (UCD)

UCD (Uniform Call Distribution) allows a number of telephones connected to the DMS/SL-100 (known as *agent positions*) to share equally in answering incoming calls made to one or more voice service DN. Incoming calls are placed in a *UCD call queue* and presented to the available agent positions on a "first-in, first-out" basis. Available agent positions are placed in another queue, an *agent queue*, and the one which has been longest in the queue (and therefore has been idle the longest) is the first to be presented with a UCD call. For example in Figure 10-7, the call in position 1 in the call queue has been in the queue the longest (it was received before the other calls). The agent in position 1 in the agent queue has been idle the longest.

Meridian Mail uses UCD to receive calls from users who have dialed the directory number (DN) of a voice service (such as Voice Messaging, Express Messaging or a Voice Menu). The voice service directory numbers (VSDNs) that are configured in Meridian Mail are, in effect, UCD directory numbers and/or line DNs (that are defined on the switch). Each directly dialable service (such as a voice menu, or voice messaging) has a unique VSDN.

The UCD agent positions correspond to the DSP ports through which Meridian Mail is connected to the DMS/SL-100. To the DMS/SL-100, Meridian Mail DSP ports represent a set of "telephones" to which it can distribute calls.

Figure 10-7
A call sequence using uniform call distribution (UCD)



1. A user dials the voice messaging DN (6000) to access her mailbox.
2. The call is placed in the third position of the call queue of the primary voice messaging UCD queue. (There are already two calls in the queue, taking up positions 1 and 2.)
3. The call is passed to the agent queue to the first available agent (that has been idle the longest).
4. The call is passed to Meridian Mail via the Meridian Mail port that corresponds to the agent that took the call.
5. The called DN is looked up in the VSDN table, and the corresponding service is provided

The Voice Services-DN Table and the Channel Allocation Table

To ensure that calls access the desired service and terminate on the appropriate Meridian Mail ports, two tables must be configured properly in Meridian Mail: The Voice Services-DN (VSDN) Table and the Channel Allocation Table (CAT).

The VSDN Table is where service DNs are stored. For each voice service that is to be accessible to users through a directly dialable number, you must first ensure that a line DN is available on the switch and then configure a VSDN in Meridian Mail. The DN associated with the line is entered as the VSDN of the service in the VSDN table. This is the number that users will dial to access the service directly.

When a caller dials a DN to access a service, that DN is looked up in the VSDN table. Each service must have a unique VSDN so that the system can determine which service is being requested and which prompts to play. For example, when a user dials the voice messaging DN, a prompt is played asking the user to enter their mailbox number and password. However, when a user dials the express messaging DN, a prompt is played asking the user to enter the mailbox number they want to reach. When they enter the mailbox number, a personal verification is played followed by a prompt to leave a message.

When Meridian Mail is installed, you define the DSP port that corresponds to each agent. This is reflected in the Channel Allocation Table (CAT) in Meridian Mail (accessible from the System Status and Maintenance menu). For each agent on the switch the following is specified: the routing address of the agent, the corresponding DSP port in Meridian Mail, the associated UCD DN, the Channel DN, the port type, the port capability and the service to which the port is dedicated. The CAT also indicates how many ports are on the system and how many have already been allocated. Normally, you won't have to modify the CAT, however, once the software is installed you should check the CAT in order to ensure that it is properly configured. However, if you move agents from one queue to another (in other words, reassign an agent to another queue), you will have to modify the Channel Allocation Table to change the UCD DN to which the agent belongs.

> ***Note:*** The Channel Allocation Table was accessible from the Voice Administration menu in Meridian Mail Release 8 and earlier. As of Meridian Mail Release 9, this table is now accessed from the System Status and Maintenance menu.

Verify the following in the Channel Allocation Table after software installation:

- Ensure that services terminate on the appropriate port type.

  Certain types of services require certain types of ports. If a caller tries to access a particular service that requires a certain type of port (for example, fax outcalling requires full multimedia ports) and the call terminates on the wrong port type (such as full service voice or basic), the service will be unavailable to the caller.

- When you want to add more services, ensure that you have enough ports of the right type to do so.

  The CAT displays how many ports there are on the system and how many have already been allocated.

  Note: The following section describes port capacities and port types in greater detail.

See the chapter "System status and maintenance" for details.

Port capacity and port type

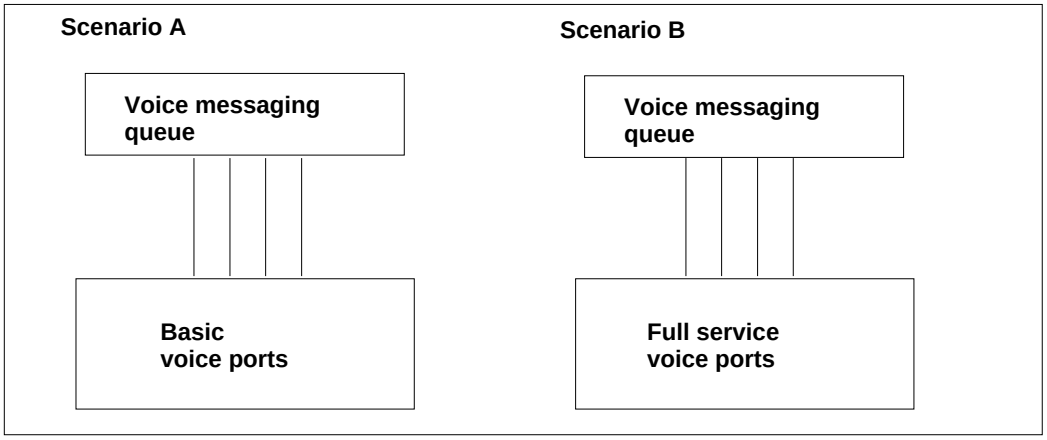
Each port in the system has a certain capacity (either full service or basic service), and is of a certain type (either voice or multimedia). There are three possible types of ports:

- basic voice ports
- full service voice ports
- full service multimedia ports

When configuring UCD queues on the DMS/SL-100, all ports servicing a particular queue must be of the same kind (have the same capacity and type). For example, a queue cannot be serviced by both full service voice ports and full service multimedia ports. You will be warned if two ports connected to the same UCD queue have different settings.

For example, Figure 10-8 shows two scenarios in which a UCD queue on the DMS/SL-100 has been configured to support the Voice Messaging feature. In Scenario A, the service terminates on the wrong kind of port (basic service ports). The Voice Messaging service requires full service basic ports. Scenario B depicts a correct configuration.

Figure 10-8
Terminating a service on the correct Meridian Mail ports



If a caller dials a DN that invokes a service that requires a full service port, but the call terminates on a basic port as in Scenario A, the system denies service and the following occurs:

- An announcement is played to the caller.
  - If the revert DN is defined, the following announcement is played: *"Your call cannot be completed at this time. Transferring to an attendant."*
  - If the revert DN is not defined, the following announcement is played: *"Your call cannot be completed at this time. Please try again later. Goodbye."*
- The call is transferred to the revert DN (or terminated if this is not available).
- A SEER is generated, recording the particulars (original dialed DN and port ID).

The same sequence will occur if a call has terminated on a basic port, but is attempting to switch to a full service application (for example, invoking a voice form or fax item from a voice menu).

Full service and basic service ports

Beginning with Meridian Mail release 9, any ports which are purchased must be specified as either basic or full service.

Basic service ports can be used to run

- custom IVR applications that are created using Meridian ACCESS or Meridian IVR
- voice menus that do not invoke
  - voice services that require full service voice ports
  - fax services that require full service multimedia ports

Table 10-1 on page 10-44 indicates port requirements for each service.

Full service ports are required to run all other Meridian Mail applications (such as voice messaging, express messaging, networking services, outcalling, and fax applications).

> ***Note 1:*** If you have upgraded to Meridian Mail release 9 from a previous release, all existing ports on the system are converted to full service ports.
>
> ***Note 2:*** A full service port can handle services that require basic or full service capabilities.

Ports are designated as basic or full service when they are installed. You can consult the Channel Allocation Table (CAT) to determine the types of ports that have been installed on the system and how many of them have already been allocated to voice services. Port designations can be changed from the CAT. This will be necessary if you want to dedicate certain ports to a particular service. The service to which ports are dedicated is indicated in the *Outbound* field. The Channel Allocation Table is described in detail in the "System status and maintenance" chapter.

Voice and multimedia ports

In addition to having a specific capacity (full service or basic service), each port in the system is also defined to be of a certain type: either voice or multimedia.

A voice port is capable of supporting all voice-related activities such as compression, recording, decompression, playback, tone detection, and so on. Fax on Demand, however, introduces the need for a multimedia port for

certain services. The following services require full service multimedia ports:

- The Fax Item Maintenance service (FIM)
- The Fax Information service (FI) if fax delivery is "same call" only or "caller choice." (The fax delivery mode is specified in the session profile of the fax information service.)
- A voice menu that invokes fax items (if fax delivery is set to "same call" only or "caller choice") or the Fax Item Maintenance service

In the session profile for fax items, you can specify the transmission method as "Same Call", "Caller Choice" or "Call Back". "Caller Choice" is the default and provides the greatest flexibility since callers can call from either a standard phone or a fax phone and can choose to either have the fax delivered to the fax phone from which they are calling or to another number.

However, allowing callers to choose "Same Call" means that you must use multimedia ports to accept these calls. Multimedia ports are more expensive than voice ports. Furthermore, one multimedia port is the equivalent of two voice ports, and, therefore, a larger number of multimedia ports means a small number of total ports on the system. The larger the number of ports, the more efficient your system since there are more resources to handle calls. It is, therefore, suggested that you choose "Call Back" as the fax delivery mode when configuring the Fax Information service. When "Call Back" is selected, voice ports can be used to receive calls. In this manner, fewer multimedia ports are required. (However, note that the Fax Item Maintenance service always requires multimedia ports.)

Multimedia ports are configured during installation or expansion. The port type is displayed (but not changeable) in the Channel Allocation Table.

> ***Note:*** A multimedia port can handle services that require voice or multimedia ports.

Port requirements

Table 10-1 identifies the port requirements for each Meridian Mail service.

Table 10-1
Acceptable port assignments

Service	Port capability	Port type
ACCACCESS (custom IVR applications)	Basic	Voice
AS Announcement Service	Basic	Voice
TD Time-of-Day Controller		
Invokes only voice menu applications (AS, TD, TS, MS) and/or ACCESS/IVR applications	Basic	Voice
Invokes other voice services such as VM or EM, but no Fax on Demand applications	Full service	Voice
Invokes a fax item and the fax delivery mode is call back only	Full service	Voice
Invokes a fax item and the delivery mode is same call or caller choice	Full service	Multimedia
Invokes the Fax Item Maintenance service	Full Services	Multimedia
TS Thru-dial Service	Basic	Voice
PM Voice Prompt Maintenance	Basic	Voice
RA Remote Activation	Basic	Voice
MS Voice Menus		
Invokes only voice menu applications (AS, TD, TS, MS) and/or ACCESS/IVR applications	Basic	Voice
Invokes other voice services such as VM or EM, but no Fax on Demand applications	Full service	Voice
Invokes a fax item and the fax delivery mode is call back only	Full service	Voice
Invokes a fax item and the delivery mode is same call or caller choice	Full service	Multimedia
Invokes the Fax Item Maintenance service	Full service	Multimedia

Table 10-1 (continued)
Acceptable port assignments

Service	Port capability	Port type
VM Voice Messaging	Full service	Voice
EM Express Messaging	Full service	Voice
OC Outcalling	Full service	Voice
VF Voice Forms Service	Full service	Voice
TR Transcription Service	Full service	Voice
NW Meridian Networking	Full service	Voice
AN AMIS Networking	Full service	Voice
FI* Fax Information service (standalone fax application)		
The fax delivery mode is call back	Full service	Voice
The fax delivery mode is same call or caller choice	Full service	Multimedia
FIM*Fax Item Maintenance	Full service	Multimedia

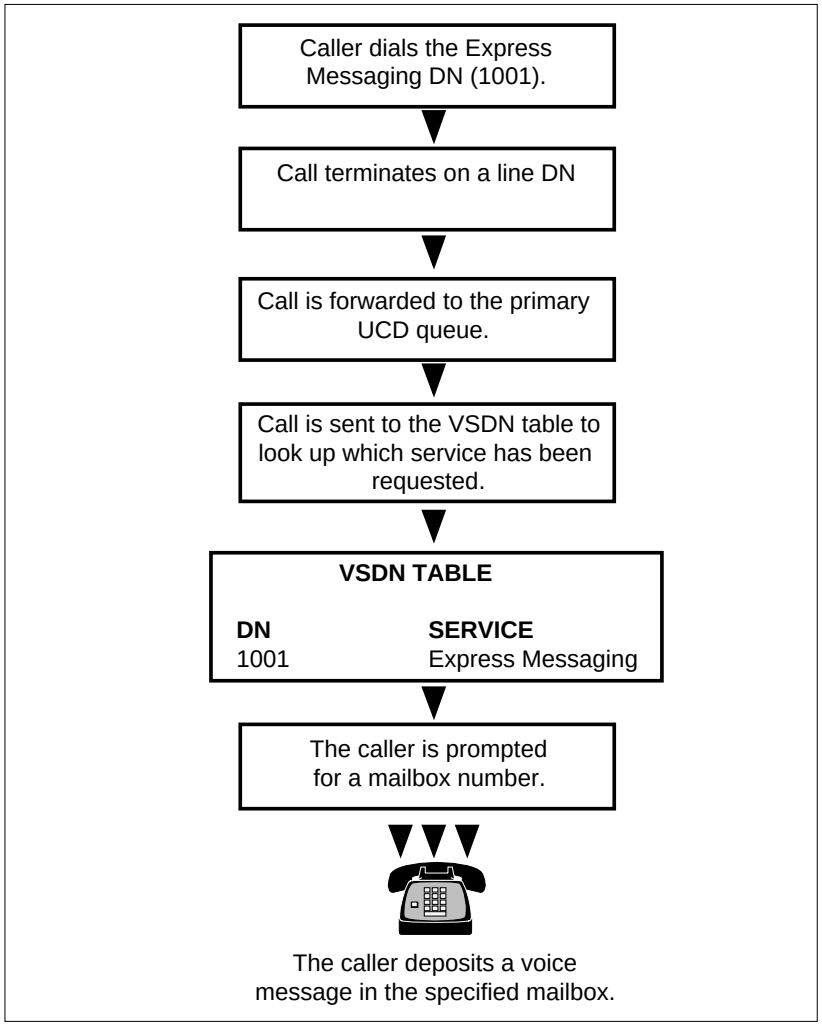
* These services are not listed directly in the Channel Allocation Table. Instead, there is an entry for FOC (Fax Outcalling). FOC requires full multimedia capabilities.

Configuring UCD queues and DNs

UCD agent queues are serviced by Meridian Mail ports. DNs have no agents associated with them. The DN of the line is used as the VSDN for the Meridian Mail service. This allows callers to specify which service they want by dialing a unique number. Once the call is accepted, it is passed to the UCD agent queue for call handling and the DN is looked up in the VSDN table to see which service has been requested. Calls are transferred from the line DN to the UCD queue using either Call Forward Universal (CFU) or Call Forward Fixed (CFF).

The flowchart shown in Figure 10-9 outlines the sequence of a call placed to a DN that terminates on a line DN.

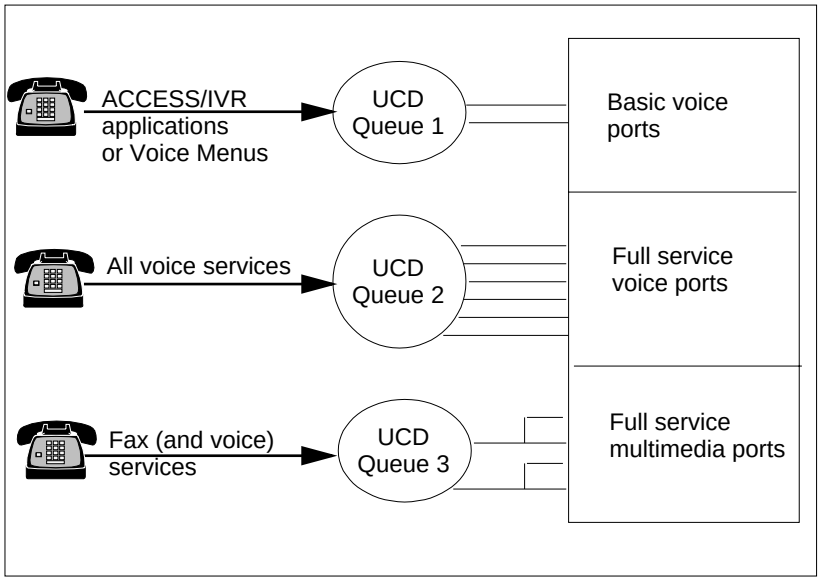
Figure 10-9
Sequence of a call terminating on a line DN



The number of agent queues that you need to configure on the DMS/SL-100 will depend on a number of factors: whether or not you have a mixture of port types on the system, and whether or not particular services require dedicated ports.

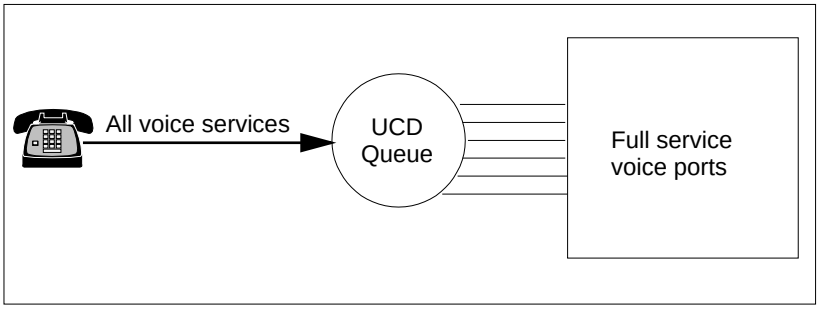
If you have a mixture of port types on your system, you will have to configure one UCD agent queue for each type of port. This means that you will have to dedicate ports to ensure that services terminate on the appropriate type of port. For example, if you have all possible types of ports on your system (basic service voice, full service voice and full service multimedia), you will need three separate agent queues because a UCD agent queue cannot be serviced by different types of ports. See Figure 10-10.

Figure 10-10
Three UCD agent queues



If, however, you have only one type of port on your system (that is, all ports are either basic or full service voice), you will only need one agent queue and all other services can share the agents in that queue. This is known as a shared configuration and is illustrated in Figure 10-11.

Figure 10-11
One UCD agent queue - a shared configuration



If all ports on your system are of the same type, see the section "Shared configuration." If there are ports of different capabilities and types on your system, see the section "Dedicated configuration with more than one agent queue."

Configuring other vendors' switches

Meridian Connections allows a Meridian Mail system to be integrated with an AT&T, ROLM or NEC PBX. A unit called VoiceBridge provides the connection. The SMDI protocol is used to connect Meridian Mail and the VoiceBridge unit.

In the case of AT&T and ROLM PBXs, Meridian Mail DSP ports are connected as individual analog lines to the PBX. Because VoiceBridge emulates a station set, the VoiceBridge DN is used as the Meridian Mail voice messaging DN. In the case of an NEC PBX, all lines belong to a single UCD group (queue). The pilot number of the UCD queue becomes the Meridian Mail voice messaging DN.

In these configurations, you will have to make use of existing call queueing or call distribution functions on the PBX. Since no data link exists between Meridian Mail and the PBX, it is not necessary to use an ACD function to present calls to ports.

Each Meridian Mail voice service that will be directly dialable requires a unique VSDN in Meridian Mail. On the PBX, you will need to create a corresponding hunt group or a line DN (that has no members). For AT&T and ROLM PBXs, forward the hunt group or line DN to the VoiceBridge DN. For NEC PBXs forward the hunt group or line DN to the pilot number of the UCD group. The advantage of using a hunt group is that you do not

have to have a physical line available on the PBX, whereas if you configure a DN, there must be a physical line associated with it. If you create a line DN for a service, the DN of the line becomes the VSDN of the Meridian Mail voice service. If you create a hunt group, the pilot number of the hunt group becomes the VSDN of the voice service.

If you want to dedicate lines to a particular service, you need a second VoiceBridge. For AT&T and ROLM PBXs, the DN of the second VoiceBridge unit becomes the VSDN. For NEC PBXs, the DN of the UCD group associated with the second VoiceBridge unit becomes the VSDN.

Because the exact manner in which you configure voice services is switch-dependent, please see the appropriate documentation for your AT&T, ROLM or NEC PBX:

AT&T VoiceBridge Installation Procedures (NTP 555-7001-216)
ROLM VoiceBridge Installation Procedures (NTP 555-7001-217)
NEC VoiceBridge Installation Procedures (NTP 555-7001-218).

Shared configuration

You can use a shared configuration if

- all Meridian Mail ports are of the same type and
- you do not need to dedicate ports to a particular service

If you require procedures for a dedicated configuration, go to the section "Dedicated configuration with more than one agent queue" beginning on page 10-56. This section also describes reasons for dedicating ports to services.

A shared configuration typically consists of the following:

- one UCD agent queue

  This queue is configured for Voice Messaging and is referred to as the *primary voice messaging queue*. This queue will contain all of the agents/ports on the system.
- For each additional Meridian Mail service that is required, create a DN. Call forward the DN to the primary UCD queue using CFF or CFU.
- The primary voice messaging queue contains all of the agents. The UCD DN is 6000.
- All Meridian Mail ports on the system are full service voice ports.

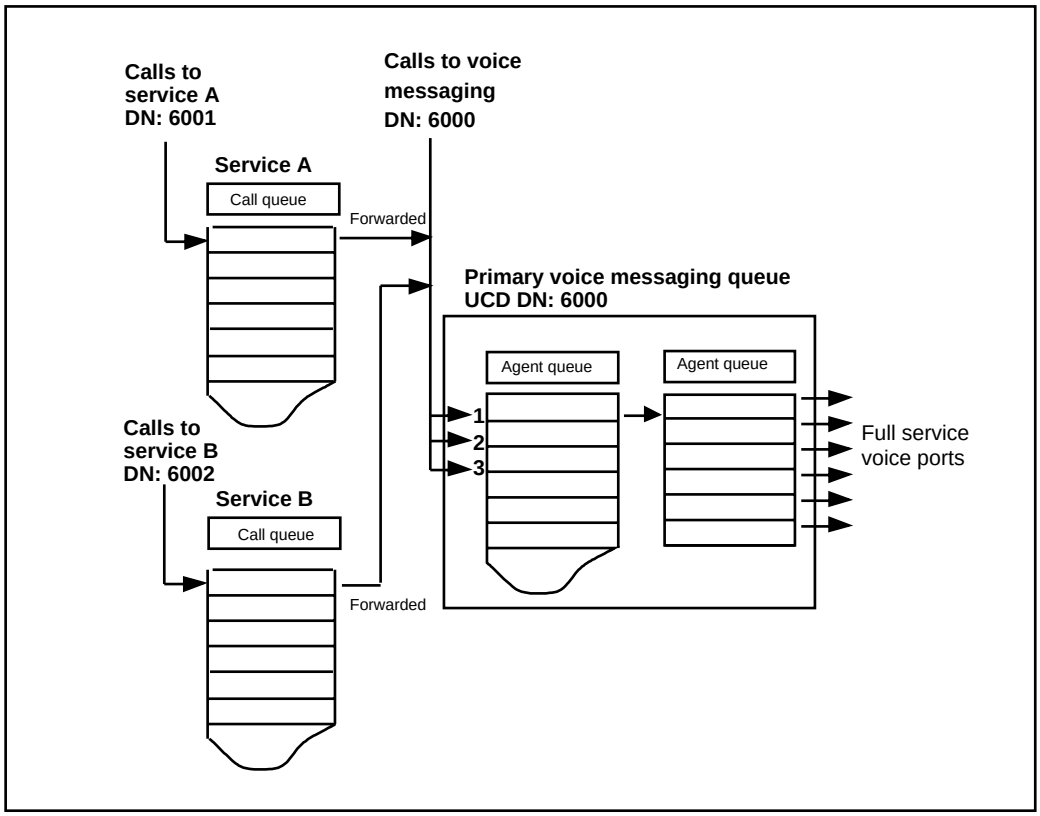
- A line DN has been configured for Service A.

  The UCD DN is 6001. This queue call forwards to the primary voice messaging queue.

- A line DN has been configured for Service B. The UCD DN is 6002.

  This queue call forwards to the primary voice messaging queue.

Figure 10-12
Sample shared configuration



Configuration procedures for a shared configuration

The procedures in this section provide detailed instructions for

- configuring the primary voice messaging UCD queue
- adding UCD agents to the primary agent queue
- configuring line DNs that share agents in the primary agent queue
- configuring the VSDN table in Meridian Mail

Add agents to the primary UCD queue

Once you have created the primary voice messaging queue, you can add agents to it as described in Procedure 10-4.

If you are adding new ports to an already installed system, see the *System Installation and Modification Guide* (NTP 555-7001-215) for instructions. When you add ports, you will be prompted to designate the Primary DN which they will service and their port type. This information will be reflected in the Channel Allocation Table. After adding ports, you should check the Channel Allocation Table to make sure it is configured properly.

Note: If you are adding new ports to the system, you will have to change the maximum number of agents allowed (MAXP) in the the UCDGRP table for the primary UCD queue. If you try to assign a new agent to a queue when it already contains the maximum number of agents, the system will not allow you to do so.

Procedure 10-4
Adding UCD agents to the primary UCD queue

DMS/SL-100 configuration (At the MAP Terminal)

1. Check the UCDGRP table for the voice messaging queue. Specifically, check the MAXPOS (the maximum number of UCD agents that can be active in the queue). If the number of existing agents plus new agents is greater than the MAXPOS value, increase MAXPOS to support the new agents.
2. Enter **so** followed by <Return>. For each new UCD agent, respond to the prompts as indicated in Table 10-2.

Table 10-2
Adding new UCD agents

Prompt	Input	Comments
SO:	NEW	
SONUMBER:	_____$	Current date and time
DN:	_____	Directory Number of the UCD agent
LCC:	IBN	Line class code of service
GROUP:	_____	Name of the IBN customer group to which the line belongs
SUBGRP:	_____	Subgroup number
NCOS:	_____	Network class of service
SNPA:	_____	Serving NPA of the DN
LEN:	_____	Line equipment number of the line
OPTION:	COD	Cut-off on Disconnect
OPTION:	UCD	Uniform Call Distribution
OPTION:	DGT	Digitone
OPTION:	CNF C06	6-party conferencing
OPTION:	SMDI	Simplified Message Desk Interface
LINE_NO:	_____	Line number position in the UCD SMDI group. This corresponds to the Agent ID (AI) in Meridian Mail which must match the number configured here. The AI is configured in Hardware Modification at the Tools level.
UCDGRP:	_____	The name of voice messaging UCD queue (UCDNAME from the UCDGRP table)
AUTOLOG:	Y	Autologon capability required
OPTION:	$	

Meridian Mail configuration

This step is necessary only if you have added new ports to an already installed system.

1 Program Meridian Mail to recognize the new ports. See the *System Installation and Modification Guide* (NTP 555-7001-215) for details. The information you provide during the expansion will automatically update the information in the Channel Allocation Table.

Configure line DNs for Meridian Mail services

For each voice service in addition to voice messaging that will be directly dialable by users, you must create a line DN which call forwards to the primary voice messaging queue.

Procedure 10-5 describes how to configure a line DN for each directly dialable voice service. In an initial installation, this step may have been carried out by the install technician for those voice services that were identified as being necessary. On an already installed system, this step will be necessary if you want to add new Meridian Mail services but do not have enough line DNs configured on the switch to support them.

Note: For third-party PBXs (ROLM, NEC or AT&T), configure either a line DN or a hunt group for each voice service. For ROLM and AT&T configurations, forward the line DN or hunt group to the DN of the VoiceBridge. For NEC configurations, forward the line DN or hunt group to the pilot number of the UCD group (queue).

Procedure 10-5
Configuring line DNs

DMS/SL-100 Configuration (At the MAP terminal)

1 Enter **so** followed by <Return>. Respond to the prompts as indicated in Table 10-3.

Note: Use either the CFF (Call Forward Fixed) option or the CFU option (Call Forward Universal) to forward the DN to the voice messaging queue. CFF is recommended since it is much easier to implement. The CFFDN or CFUDN must be set to the UCD DN of the UCD queue to which the line DN is being forwarded.

Table 10-3
Defining a DN for a voice service

Prompt	Input	Comments
SO:	NEW	
SONUMBER:	_____$	Current date and time
DN: *	_____	Directory Number of the line. This is the DN you will enter in the VSDN table in Meridian Mail.
LCC:	IBN	Line class code of service
GROUP	_____	Name of the IBN customer group to which the line belongs
SUBGRP:	_____	Subgroup number
NCOS:	_____	Network class of service
SNPA:	_____	Serving NPA of the DN
LEN:	_____	Line equipment number of the line
CFBCNTL:	N	(Normal assignment for CFB)
CFBDN:	xxxxxxx	The Primary UCD DN
CFDCNTL:	N	(Normal assignment for CFB)
CFDDN:	xxxxxxx	The Primary UCD DN
OPTION:	CFF **	Call Forward Fixed
CFFDN:	xxxxxxx	The Primary UCD DN
OPTION	CFU **	Call Forward Universal
OPTION:	$	

* *The DN of the line becomes the directory number of the new service.*

** *Choose one of CFF or CFU.*

Note: If you are using CFU, additional configuration is necessary. Go to Procedure 10-6 now. Once completed, you are ready to configure Meridian Mail. See Procedure 10-7 on page 10-56.

Procedure 10-6
Configuring the CFU (Call Forward Universal) option

DMS/SL-100 Configuration (At the MAP Terminal)

> ***Note:*** This procedure must be carried out for every line that forwards to the primary UCD queue.

1 Use **table cfx** to define the CFU DN. This is the UCD DN of the primary UCD queue to which the voice service DN will forward. Respond to the prompts as indicated in Table 10-4.

Table 10-4
Defining the CFU DN

Prompt	Input	Comments
TABLE:CFX	pos x x x x 0 (for example: pos 4 1 9 16 0)	Where xxxx is the Line Equipment Number (LEN) of the line for the service you defined in Table 10-3 (enter a 0 at the end of the LEN)
	cha	To indicate that you want to change the DN to which CFU forwards
CFUIFDN	xxxxxxx	Enter the UCD DN of the primary UCD queue

At a telephone set

2 Connect a phone to the line.

3 Go off hook.

4 Call forward the line to the primary UCD DN.

a. Dial the call forward activation code followed by the UCD DN.

For example: *80 2326050

If you do not know what the code is, look it up in Table IBNXLA first. Check the entry for CFW. If there is no entry, configure a code. This table is described in the *Installation Guide* (NTP 555-70x1-250.)

b. Listen for the confirmation tone. This indicates that the line has been forwarded.

Important: If the DMS/SL-100 is rebooted, steps 2 to 4 will have to be repeated for each service that CFUs to the primary UCD queue.

Configure the VSDN table in Meridian Mail

Once you have created all necessary UCD queues and line DNs on the switch, you are ready to configure Meridian Mail. Follow Procedure 10-7.

Procedure 10-7
Configuring Meridian Mail

1. Log on at the Meridian Mail administration terminal.
2. Select Voice Administration from the Main Menu.
3. Select Voice Services Administration.
4. Select Voice Services-DN Table.
5. For each voice service, add its corresponding UCD DN or line DN to the VSDN table. Enter the DN in the *Access DN* field in the Add DN Information screen. See the section "Adding DN information" on page 10-88 for more information about the VSDN table.

Dedicated configuration with more than one agent queue

There are two primary reasons for dedicating ports:

- Different port types are installed on your system (full service voice, basic voice and/or full service multimedia).
- You want to dedicate ports to a particular service.

Mixed port types

If there is a mixture of port types on the system, you must configure one UCD agent queue for each type of port. If, for example, you have full service voice ports, basic voice ports and full service multimedia ports, you will need three UCD agent queues. This is because all the ports that service a particular agent queue must be of the same capability (full service or basic service) and type (voice or multimedia). Therefore, for each port on the system, you must identify whether it is basic service, full voice service or full multimedia service.

Dedicating ports to services

It may be necessary to dedicate agents/ports to certain Meridian Mail services for the reasons outlined as follows:

- If it is crucial that the remote notification feature always have access to ports, dedicate ports to the Outcalling service (which includes the remote notification and delivery to non-users features).

For example, in a hospital it might be very important that ports always be available for the remote notification service to guarantee that doctors will be paged without delay if they have received urgent messages while away from their office. In this case, you would not want the remote notification service to have to compete with all other services as it is urgent that doctors are notified immediately.

However, keep in mind that if the ports that are dedicated to outcalling are busy, the service cannot use any of the other ports in the system. The call will queue for the dedicated ports.

- If traffic studies have shown that a particular service is used a lot and that calls are being lost because the service has to compete with other services, you should consider dedicating ports to such a service.
- If outbound ACCESS/IVR applications are crucial and it is important that an agent is always available, you can dedicate agents to them.

  Furthermore, ACCESS/IVR applications require only basic ports. You may therefore, create a UCD queue containing only basic voice ports to service ACCESS/IVR applications.

Cautions about dedicating ports

Keep the number of dedicated ports to a minimum. In general, DSP ports are used more efficiently in a shared configuration. When DSP ports are dedicated to a particular service, the overall efficiency of the system is reduced for the following reasons:

- A DSP port that is dedicated to a particular service cannot be used by any other service, even when the dedicated port is not in use.
- When a DSP port is dedicated to an outbound service (such as outcalling or networking), that service is restricted to those ports.

  In other words, the service cannot use a port that is configured for all services.

For example, your system has 12 DSP ports. Ten of them are shared by all services (and belong to the primary voice messaging queue). You dedicate two of your DSP ports to the Outcalling feature. When the voice messaging service or the networking services places a call, any of the 12 DSP ports can take the call. However, a remote notification call or a delivery to a non-user can only use one of the two DSP ports dedicated to Outcalling (because of the second restriction).

Example of multiple UCD agent queues to support dedicated ports

Figure 10-13 illustrates the following dedicated configuration:

- There is a mixture of full service voice, full service multimedia, and basic voice ports on the system.
- The primary voice messaging queue (UCD Queue 1) is serviced by all of the full service voice ports on the system.

  The UCD DN is 3650.
- A line DN has been configured for Express Messaging. The line DN is 3651.

  The queue call forwards to DN 3650.
- An agent queue (UCD Queue 2) has been configured to be serviced by all of the basic voice ports on the system.

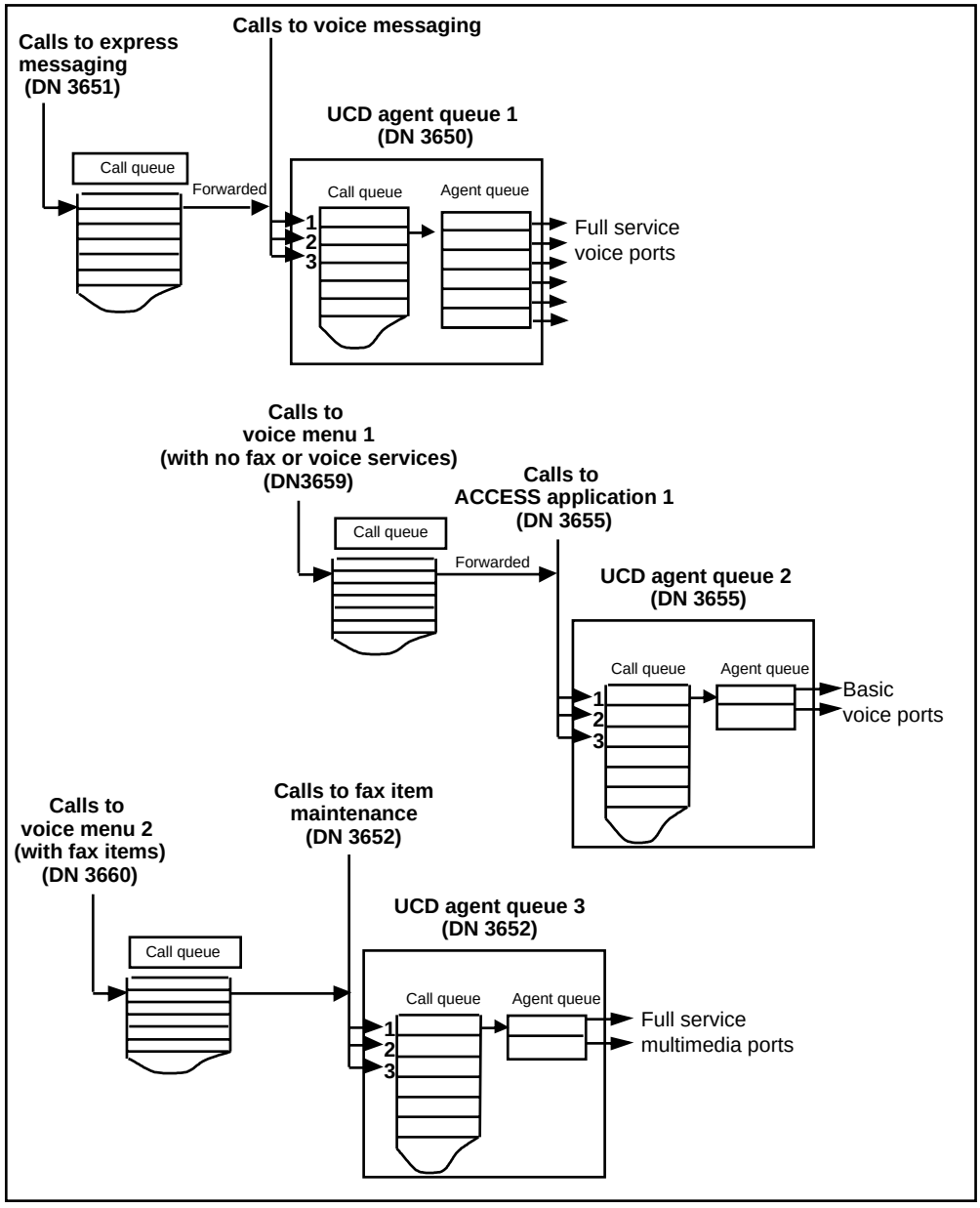
  This queue is directly accessed by ACCESS Application 1. The UCD DN is 3655.
- A line DN has been configured for Voice Menu 1.

  This menu does not invoke any fax services which require multimedia ports or voice services that require voice ports. The line DN is 3659. It call forwards to DN 3655.
- An agent queue (UCD Queue 3) has been configured to be serviced by all of the full service multimedia ports on the system.

  It is directly accessed by the Fax Item Maintenance service. The UCD DN is 3652.
- A line DN has been configured for Voice Menu 2 which invokes several fax items.

  The line DN is 3660. It call forwards to DN 3652.

Figure 10-13
Sample dedicated configuration



Configuration procedures for a dedicated configuration

The procedures in this section describe how to

- identify the types of ports that are installed on the system
- configure the primary voice messaging agent queue
- configure an agent queue for basic service ports (if installed on the system)
- configure an agent queue for full service multimedia ports (if installed on the system)
- configure agent queues for services requiring dedicated ports
- Add agents to UCD agent queues.
- Configure line DNs for services that will share the agents in one of the agent queues you have configured.
- Move UCD agents from one agent queue to another.
- Configure Meridian Mail (the VSDN table and CAT).

Most of these procedures may have already been carried out by the install technician during installation of Meridian Mail software. If they have not already been done, you will be responsible for doing so. However, once the system has been installed and has been operational for a time, it may be decided that additional services are required, at which time you will need to refer to some or all of these procedures.

To add additional services, you may need to consult with a Meridian Mail engineer to determine if your system capacity can support any new services, or, you can refer to the *Site Installation and Planning Guide* (NTP 555-70x1-200) which provides instructions on how to calculate the number of ports required to support different types of services. This is described in the chapter "Determining system size."

If you are adding additional ports to the system, refer to the *System Installation and Modification Guide* (NTP 555-7001-215). This document describes how to configure ports. This involves specifying their type/capacity, the DN of the UCD queue they will be servicing and the corresponding routing address. Once the system has been installed, you can always check the current configuration in the Channel Allocation Table.

To add additional services to an operational system, you should

1 Determine the port requirements of each service. In other words, does the service need to terminate on a basic service port, a full service voice port or a full service multimedia port? See Table 10-1 on page 10-44.

2 Determine if there are adequate ports of the appropriate type/capability to support these services. Check the Channel Allocation to see how many ports are installed and how many are already allocated. You may need to expand your system if you require more services than can currently be supported by existing ports.

3 If necessary, add and/or reconfigure ports in Meridian Mail using the Port Reconfiguration Utility. This utility is documented in the *System Installation and Modification Guide* (NTP 555-7001-215).

4 Follow the appropriate procedures for programming the DMS/SL-100. These are described on the following pages.

5 Follow the appropriate procedures for configuring Meridian Mail. These are described on the following pages.

To provision Meridian Mail on the DMS/SL-100 you must input data. Data is entered in data tables and service orders. UCD groups (or queues) are created using the table UCDGRP and the table DNROUTE (BCS 32 and up) or the table WRDN (BCS 31 and earlier) to define the DN for this UCD group. Line DNs are assigned to line DNs through a service order (**so** command).

Note: For configurations involving other PBXs (NEC, AT&T or ROLM), see the appropriate installation guide for PBX administration/configuration. Then return to this section for detailed instructions for configuring Meridian Mail. The following NTPs document PBX administration for non-Nortel PBXs:

AT&T VoiceBridge Installation Procedures (NTP 555-7001-216)
ROLM VoiceBridge Installation Procedures (NTP 555-7001-217)
NEC VoiceBridge Installation Procedures (NTP 555-7001-218).

Note: The following procedures assume that ports have been configured in Meridian Mail. See the *System Installation and Modification Guide* (NTP 555-7001-215) for details.

Identify the ports that are installed on your system

This step is necessary if you have a mixture of port types on your system. Before building agents and queues, you must identify the type and capability of each port that is installed. This will ensure that the agent queues that you build are serviced by the appropriate ports. Procedure 10-8 describes how to identify the port types on your system by checking the Channel Allocation Table.

> ***Note:*** A multimedia port is actually made up of two voice ports. Therefore, each multimedia port will have two TNs associated with it.

Procedure 10-8
Identifying installed ports

1 Log on to Meridian Mail.

2 Select System Status and Maintenance from the Main Menu.

3 Select Channel Allocation Table.

The Channel Allocation Table is displayed.

Figure 10-14
The Channel Allocation Table (CAT)

```
                        System Status and Maintenance

Channel Allocation Table for Node 2 (C=Card D=DSP P=Port)

Limit; MaxVoice MinMulti; MaxFull;      - - - - - Allocated - - - - -
  12       8       2         8         M/F: 2     V/F: 6     V/B: 2

#  C-D-P  Rout. Addr    PrimaryDN ChannelDN Type   Capability   Outbound

1  5-1-1  10-1          5300      12345671  Voice  Full Basic   ACC Class:
2  5-1-2  10-2          5300      12345672  Voice  Full Basic   ACC Class:
3  5-2-1  10-3          5200      12345673  Multi  Full Basic   FOC
          blocked for Multimedia port 5-2-1.
4  6-1-1  10-4          5200      12345674  Multi  Full Basic   FOC
          blocked for Multimedia port 6-1-1.
5  6-2-1  10-5          5100      12345675  Voice  Full Basic   ALL
6  6-2-2  10-6          5100      12345676  Voice  Full Basic   ALL
7  7-1-1  10-7          5100      12345677  Voice  Full Basic   ALL
8  7-1-2  10-8          5100      12345678  Voice  Full Basic   ALL
9  7-2-1  10-9          50001111  12345679  Voice  Full Basic   OC
10 7-2-2  10-10         50001111  12345670  Voice  Full Basic   OC

 Select a softkey >
    Save          Cancel                                  Display Choice
                                                           of Services
```

* Use the [Display Choice of Services] softkey to view the installed services and their acronyms.

4 Write down the routing address of each agent.

5 Beside each routing address write down the port type (voice or multi) and the capability (full or basic).

Note: Port types and capabilities are determined during software installation. For information about how port types and capabilities are designated, see the *System Installation and Modification Guide* (NTP 555-7001-215).

A list in the following format (shown in Figure 10-15) will help you add agents to UCD queues later on.

Figure 10-15
List of agents

Routing address	Port type	Port capability	Primary DN
10-1	Voice	Basic	5462
10-2	Voice	Basic	5462
10-3	Voice	Full	5460
10-4	Voice	Full	5460
10-4	Multimedia	Full	5461
10-5	Multimedia	Full	5461
10-6	Voice	Full	5460
10-7	Voice	Full	5460
10-8	Voice	Full	5460
10-9	Voice	Full	5460
10-10	Voice	Full	5460

The numbers in the Primary DN column indicate the agent queue to which the agent will be added. Even if the agent queues have not been created yet, you can identify the DNs you will use for these queues now. Just be sure to use these DNs when you configure the queues.

Configure the primary voice messaging UCD queue

This step is usually carried out by the install technician during installation of Meridian Mail software. If this has not already been carried out, Procedure 10-9 describes how to configure the UCD DN of the primary voice messaging queue. The DN of the queue will be the access number that users call to access their mailboxes.

Note: If you have a mixture of port types on your system, this queue can only be serviced by full service voice ports.

Procedure 10-9
Creating the primary voice messaging UCD queue

1. At the MAP terminal, enter **table ucdgrp** followed by <Return> to configure a UCD queue. Respond to the prompts as indicated in the *Installation and Maintenance Guide* (NTP 555-70x1-250). For the MAXPOS prompt, indicate the number of agents that will be added to this queue.
2. Use **table dnroute** (BCS 32 and up) or **table wrdn** (BCS 31 and earlier) to define the directory number (DN) of the voice messaging UCD queue. Respond to the prompts as indicated in the *Installation and Maintenance Guide* (NTP 555-70x1-250).

Configure an agent queue for basic service voice ports

This step is necessary only if basic service ports are installed on the system. If you are unsure, follow Procedure 10-8 to determine if any basic service ports are installed. This step is usually carried out by the install technician during installation of Meridian Mail software. If this has not already been carried out, Procedure 10-9 on page 10-64 describes how to configure a UCD agent queue.

The procedure for creating an agent queue for basic service ports is essentially the same as creating the primary voice messaging queue. There are, however, two differences:

- The UCD DN will be unique to this agent queue.
- The MAXPOS value (maximum number of agent positions) will probably differ to reflect the number of agents that will be added to this queue.

Configure an agent queue for full service multimedia ports

This step is necessary only if full service multimedia ports are installed on the system. If you are unsure, follow Procedure 10-8 to determine if any are installed. This step is usually carried out by the install technician during installation of Meridian Mail software. If this has not already been carried out, Procedure 10-9 on page 10-64 describes how to configure an UCD agent queue.

The procedure for creating an agent queue for multimedia ports is essentially the same as creating the primary voice messaging queue. There are, however, two differences:

- The UCD DN will be unique to this agent queue.
- The MAXPOS value (maximum number of agent positions) will probably differ to reflect the number of agents that will be added to this queue.

Configure agent queues for services requiring dedicated ports

This step is necessary only if any of the services require dedicated ports. Procedure 10-9 on page 10-64 describes how to configure a UCD agent queue.

> ***Note:*** For third-party PBXs (ROLM, NEC or AT&T), you will need a second VoiceBridge unit in order to dedicate lines to a particular service.

The procedure for creating an agent queue dedicated to a particular service is essentially the same as creating the primary voice messaging queue. There are, however, two differences:

- The UCD DN will be unique to this agent queue.
- The MAXPOS value (maximum number of agent positions) will probably differ to reflect the number of agents that will be added to this queue.

Add UCD agents

Now that you have built your agent queues, you are ready to add agents to them. If you have a mixture of port types on your system, keep on hand the list of TNs and corresponding port types and capabilities that you identified using Procedure 10-8. You must be sure to add agents to the right queue. For example, if would be useful to have a list like the one shown in Figure 10-16 to ensure that you add agents to the appropriate queue.

Figure 10-16
List of agents

Routing address	Port type	Port capability	Primary DN
10-1	Voice	Basic	5462
10-2	Voice	Basic	5462
10-3	Voice	Full	5460
10-4	Voice	Full	5460
10-4	Multimedia	Full	5461
10-5	Multimedia	Full	5461
10-6	Voice	Full	5460
10-7	Voice	Full	5460
10-8	Voice	Full	5460
10-9	Voice	Full	5460
10-10	Voice	Full	5460

In the previous example, all basic service ports are assigned to Primary DN 5462, all full service voice ports are assigned to Primary DN 5460, and all full service multimedia ports are assigned to Primary DN 5461.

If you are adding new ports to the system, see the *System Installation and Modification Guide* (NTP 555-7001-215) for instructions. When you add ports, you will be prompted to designate the Primary DN which they will service and their port type. This information will be reflected in the Channel Allocation Table. After adding ports, you should check the Channel Allocation Table to make sure it is configured properly.

Note: If you are using this procedure to add additional agents to an existing queue, you will have to modify the MAXPOS value (the maximum number of agent positions) of that UCD queue to ensure that the queue can support additional agents.

Procedure 10-10
Adding UCD agents

DMS/SL-100 configuration (At the MAP Terminal)

1 Check the UCDGRP table for the queue(s) to which you will be adding new agents. Specifically, check the MAXPOS (the maximum number of UCD agents that can be active). If when you add the new agents to the existing agents, the number of agents exceeds the MAXPOS value, you will have to increase it to support the new agents.

2 Enter **so** followed by <Return>. For each new UCD agent, respond to the prompts as indicated in Table 10-5. If you don't want to add all of the new agents to the new service queue, add the remainder to the voice messaging queue.

Table 10-5
Adding new UCD agents

Prompt	Input	Comments
SO:	NEW	
SONUMBER:	_____ $	Current date and time
DN:	_____	Directory Number of the UCD agent
LCC:	IBN	Line class code of service
GROUP:	_____	Name of the IBN customer group to which the line belongs
SUBGRP:	_____	Subgroup number
NCOS:	_____	Network class of service
SNPA:	_____	Serving NPA of the DN
LEN:	_____	Line equipment number of the line
OPTION:	COD	Cut-off on Disconnect
OPTION:	UCD	Uniform Call Distribution
OPTION:	DGT	Digitone
OPTION:	CNF C06	6-party conferencing
OPTION:	SMDI	Simplified Message Desk Interface

Prompt	Input	Comments
LINE_NO:	_____	Line number position in the UCD SMDI group. This corresponds to the Agent ID (AI) in Meridian Mail which must match the number configured here. The AI is configured in Hardware Modification at the Tools level.
UCDGRP:	_____	Name of UCD queue to which the agent belongs (UCDNAME from table UCDGRP)
AUTOLOG:	Y	Autologon capability required
OPTION:	$	

3 You are now ready to configure Meridian Mail. See the following section.

Configure line DNs

For all other Meridian Mail services that will share the agents in one of the agent queues you have created, you will need to create a line DN. This is described in Procedure 10-11. These line DNs must be set up so that they forward to the appropriate agent queue. The agent queue to which a line DN is forwarded will depend on the port requirements of the service for which the line DN is being built.

For example, you have created a primary voice messaging queue (serviced by full service voice ports) and a multimedia agent queue (serviced by full service multimedia ports). You want to create a line DN for a fax menu in which the fax delivery method is caller choice. This type of service requires multimedia ports and you must, therefore, ensure that it terminates on the multimedia agent queue. This is done by entering the UCD DN of the multimedia agent queue as the CFF DN or the CFU DN in the service order. If a service terminates on an inappropriate port type, callers will be denied service.

Procedure 10-11
Configuring lines

DMS/SL-100 configuration (At the MAP terminal)

1 Enter **so** followed by <Return>. Respond to the prompts as indicated in Table 10-6.

Note: Use either the CFF (Call Forward Fixed) option or the CFU option (Call Forward Universal) to forward the DN to the voice messaging queue. CFF is recommended since it is much easier to implement.

Table 10-6
Defining a DN for a voice service

Prompt	Input	Comments
SO:	NEW	
SONUMBER:	_____$	Current date and time
DN:	_____	Directory Number of the line. This is the DN you will enter in the VSDN table in Meridian Mail.
LCC:	IBN	Line class code of service
GROUP	_____	Name of the IBN customer group to which the line belongs
SUBGRP:	_____	Subgroup number
NCOS:	_____	Network class of service
SNPA:	_____	Serving NPA of the DN
LEN:	_____	Line equipment number of the line
CFBCNTL:	N	(Normal assignment for CFB)
CFBDN:	xxxxxxx	The Voice Messaging UCD DN
CFDCNTL:	N	(Normal assignment for CFB)
CFDDN:	xxxxxxx	The Voice Messaging UCD DN
OPTION:	CFF *	Call Forward Fixed
CFFDN:	xxxxxxx	The Voice Messaging UCD DN
OPTION	CFU *	Call Forward Universal
OPTION:	$	

* *Choose one of CFF or CFU. Regardless of which option you choose, make sure this is the DN of the appropriate UCD queue (make sure you forward this line DN to the UCD queue that is serviced by the appropriate port type).*

2 Repeat this procedure for each line DN that you require.

Note: If you are using CFU, additional configuration is necessary. Go to Procedure 10-12 now.

If you have configured all necessary UCD queues and line DNs, you are ready to configure Meridian Mail. Go to Procedure 10-14.

If you need to add agents, see Procedure 10-10.

Procedure 10-12
Configuring the CFU (Call Forward Universal) option

DMS/SL-100 configuration (At the MAP Terminal)

Note: This procedure must be carried out for every line that forwards to the primary UCD queue.

1 Use **table cfx** to define the CFU DN. This is the UCD DN of the primary UCD queue to which the voice service DN will forward. Respond to the prompts as indicated in Table 10-7.

Table 10-7
Defining the CFU DN

Prompt	Input	Comments
TABLE:CFX	pos x x x x 0 (for example: pos 4 1 9 16 0)	Where xxxx is the Line Equipment Number (LEN) of the line for the service you defined in Table 10-3 (enter a 0 at the end of the LEN)
	cha	To indicate that you want to change the DN to which CFU forwards
CFUIFDN	xxxxxxx	Enter the UCD DN of the primary UCD queue

At a telephone set

2 Connect a phone to the line.

3 Go off hook.

4 Call forward the line to the primary UCD DN.

a. Dial the call forward activation code followed by the UCD DN.

For example: *80 2326050

If you do not know what the code is, look it up in Table IBNXLA first. Check the entry for CFW. If there is no entry, configure a code. This table is described in the *Installation and Maintenance Guide* (NTP 555-70x1-250.)

b. Listen for the confirmation tone. This indicates that the line has been forwarded.

Important: If the DMS/SL-100 is rebooted, steps 2 to 4 will have to be repeated for each service that CFUs to the primary UCD queue.

If you have configured all necessary UCD queues and line DNs, you are ready to configure Meridian Mail. Go to Procedure 10-14.

Move UCD agents

This step is necessary only if you need to move agents from one agent queue to another. For example, if you have dedicated ports to a particular service, you may find that more ports are required by that service based on traffic studies.

Procedure 10-13
Moving UCD agents

DMS/SL-100 configuration

1 Enter **so** followed by <Return> to move UCD agents from one UCD queue to another queue. Make sure you move agents from a queue that is serviced by the type of port that is appropriate to the service to which you are dedicating ports. Respond to the prompts as indicated in Table 10-8.

Table 10-8
Moving a UCD agent

Prompt	Input	Comments
SO:	CHF	
SONUMBER:	_____$	Current date and time
DN_OR_LEN:	_____	DN or Line equipment number of the UCD agent
OPTION:	SMDI	Simplified Message Desk Interface
LINE_NO:	_____	Line number position in the UCD SMDI group. This corresponds to the Agent ID (AI) in Meridian Mail which must match the number configured here. The AI is configured in Hard-ware Modification at the Tools level.
UCDGRP:	_____	Name of the new service UCD queue to which the agent belongs (UCDNAME from table UCDGRP)
AUTOLOG:	Y	Autologon capability required
OPTION:	$	

Configure Meridian Mail

Once all of your UCD queues and line DNs have been set up, you are ready to configure Meridian Mail. This involves setting up the VSDN table which associates a voice service DN with the appropriate service. The VSDN will be one of the UCD DNs or line DNs you have just configured. If you have moved any UCD agents, you will also have to modify the Channel Allocation Table.

Procedure 10-14
Configuring Meridian Mail

1. Log on at the Meridian Mail administration terminal.
2. Select Voice Administration from the Main Menu.
3. Select Voice Services Administration.
4. Select Voice Services-DN Table.
5. Add DNs for all services to the VSDN table. For each service, enter the appropriate UCD DN or line DN in the *Access DN* field in the Add DN Information screen. See the section "Adding DN information" on page 10-88.

   Note: For AT&T or ROLM configurations, enter the DN of the VoiceBridge. For NEC configurations, enter the pilot number of the UCD group.

   The following steps are necessary only if you have moved agents from one queue to another.

6. Return to the Main Menu.
7. Select System Status and Maintenance.
8. Select DSP Port Status.
9. Disable the ports that you have moved (see the section "DSP Port Status" in the "System status and maintenance" chapter).
10. Return to the System Status and Maintenance Menu.
11. Select Channel Allocation Table.
    a. Modify the *Primary DN* field for each agent that was moved. Enter the *Primary DN* of the queue to which it was moved.

       Note: For AT&T or ROLM configurations, enter the DN of the VoiceBridge. For NEC configurations, enter the pilot number of the UCD group.

    b. For each agent that was moved to a different service queue, enter the specific service to which it is now dedicated in the *Outbound* field.

The Channel Allocation Table is described in the "System status and maintenance" chapter.

12 Reboot Meridian Mail for the changes made to the CAT to take effect.

Disabling the calling DN suppression feature

In a DMS-10 configuration where the voice messaging DN forwards to the main UCD queue, you must disable the Calling DN Suppression feature on the UCD queue. If this feature is left enabled, it will prevent the operation of Auto Login.

To disable this feature on the DMS-10, do the following:

1 Set the MDNB (Message Desk Number Block) to NO.

2 Set the OSUP (Originating Suppression) to NO.

3 Set the TSUP (Terminating Suppression) to NO.

The first step is mandatory. The second and third steps are recommended. If OSUP or TSUP are set to Yes, this may affect Auto Login, depending upon other parameter settings in the DMS-10 switch. Please refer to the DMS-10 NTPs concerning Call Number Delivery.

Voice services administration

Voice services administration involves the following activities:

- adding DNs to the Voice Services-DN Table (VSDN table) and keeping the VSDN table up-to-date

  The VSDN table lists all of the services that are available and the corresponding DNs for each service. These DNs are the numbers that users and callers dial to access particular services.

- configuring the Voice Services Profile, where you specify the broad operational parameters common to all voice services

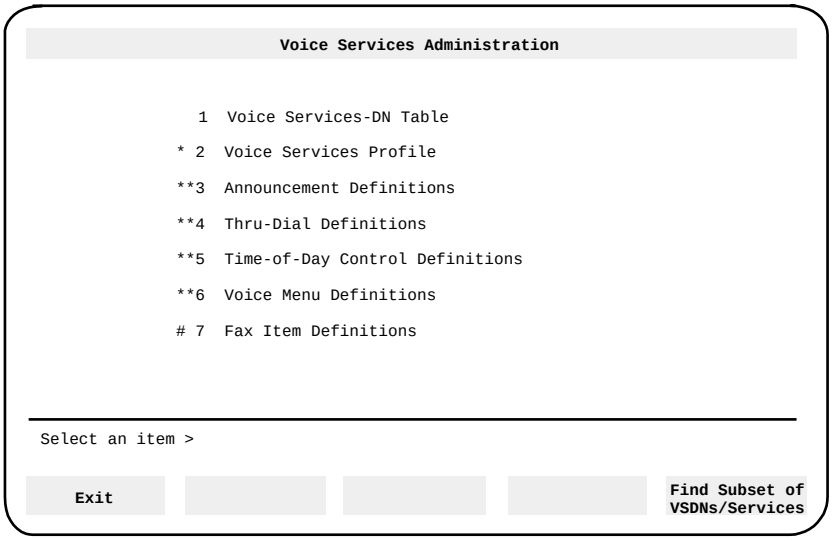
- creating and maintaining voice menus and related services (Note that these voice services are described in the *Voice Menus Application Guide* (NTP 555-7001-325).) These include

  - *Announcement Definitions* define recorded announcements for playback within a voice menu, or as a stand-alone voice service.
  - *Thru-Dial Definitions* define call handling services as a stand-alone service or to allow users to place calls to permitted numbers from a voice menu.
  - *Time-of-Day Control Definitions* define the activation of voice services according to the time and date at which a call arrives.
  - *Voice Menu Definitions* - in which you define voice menus as sets of actions to be offered to the user. Each action corresponds to a key on the telephone keypad.

- creating and maintaining fax item definitions (See the *Fax on Demand Application Guide* [NTP 555-7001-327] for details.)

If the Multiple Administration Terminals feature (MATs) is installed, and if two administrators log on to the VSDN Table, or the same voice service definition (Announcement, Voice Menu, Thru-Dial service, Time-of-Day Controller) from different terminals, the administrator who first accessed the table or definition has write access. All other administrators can only view the table/definition.

Figure 10-17
The Voice Services Administration Menu



* This item does not appear on multi-administration terminals (MATs).
** These items are displayed only if the Voice Menus feature is installed.
\# This item is displayed only if Fax on Demand is installed.

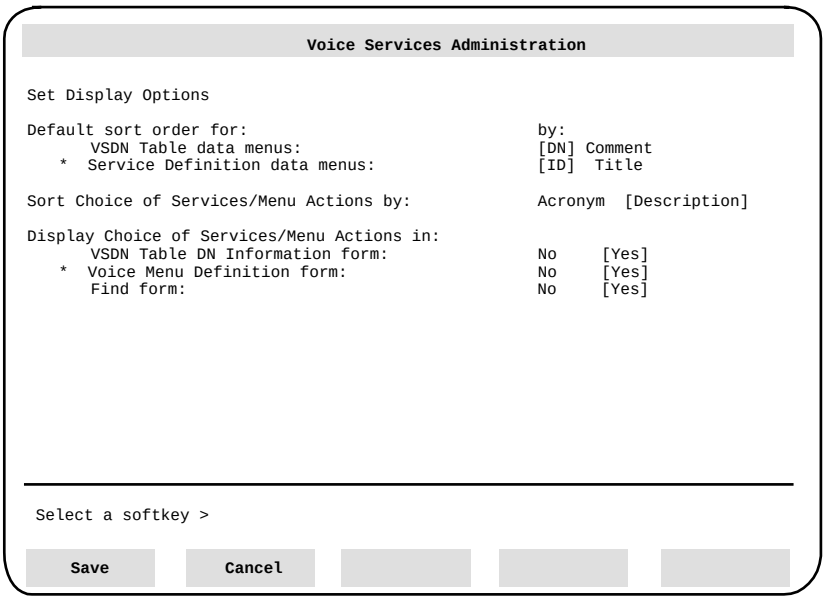
CAUTION
Risk of loss of service during nightly DR audit

At 3:30 a.m. every day, an audit of the DR directory is performed. Do not perform any voice services administration at this time (adding, modifying or deleting DNs in the VSDN table, or adding, modifying or deleting voice menu-related definitions and fax item definitions). Depending on how unbalanced the system is, this audit can take anywhere from 10 minutes (if the system has not been modified since the last audit) to 2 hours (if there have been many changes, such as a lot of users or services being added or modified).

Setting the display options

The Set Display Options screen (Figure 10-18) allows you to specify how information is sorted and displayed on the Voice Services Administration screens. For example, you can choose to display the Choice of Services list in the voice service definition screens alphabetically according to service acronym ("ms", for example) or service description ("voice menu service").

Figure 10-18
The Set Display Options screen



* These fields are displayed only if the Voice Menus feature is enabled.

The following fields are displayed:

- ***Default sort order for VSDN Table data menus*** The selection you make affects how DN information is sorted and displayed in the VSDN table. Your options are

  - ***DN*** The list of services and corresponding DNs are sorted in ascending alphabetical order according to the DN associated with the service. Examples of numbers sorted in alphabetical order are as follows: 30 comes before 9 (3, the first digit, comes before 9), 6000 comes before 72, and so on.

  - ***Comment*** When this option is selected, the list of services is displayed in alphabetical order based on entries in the *Comment* column.

- ***Default sort order for Service Definition data menus*** The selection you make determines how entries in the various service definition screens, such as the Announcement Definitions screen, are sorted and displayed. Your choices are as follows:

  - ***ID*** Entries are sorted in ascending alphabetical order according to the service ID. Examples of numbers sorted in alphabetical order are as follows: 30 comes before 9 (3, the first digit, comes before 9), 6000 comes before 72, and so on.

  - ***Title*** Entries are alphabetically sorted according to the service definition (Announcement, Thru-Dial service, Voice Menu, Time-of-Day Controller) title.

- ***Sort Choice of Services/Menu Actions by*** The selection made in this field affects the display of the Choice of Services List that appears in Find Subset of VSDNs/Services screen, and the Add, View/Modify and Delete DN Information screens. This field also affects the display of the Choice of Menu Actions list that appears in the Add, View/Modify a Voice Menu Definition screen. Your choices are

  - ***Acronym*** When selected, the Choice of Services/Menu Actions list is sorted according to the service acronym. Acronyms do not necessarily begin with the same letter as the service name. For example, the acronym for the voice menu service is "MS" (menu service).

  - ***Description*** When selected, services are sorted alphabetically according to their full name. For example, Thru-Dial Service versus TS, or Voice Menu Service versus MS.

- ***Display Choice of Services/Menu Actions in*** You can selectively turn the display of the Choice of Services or Menu Actions list on or off for the following screens:

  - VSDN Table DN Information form (the Add, View/Modify and Delete DN Information screens)

  - Voice Menu Definition form (the Add, View/Modify and Delete a Voice Menu Definition screen)

- Find form

The default for all three screens is "Yes". Once you become more familiar with the service names and acronyms, you may no longer need to have this list displayed, in which case you can change this setting to "No".

Procedure 10-15
Setting the display options

Starting point: The Main Menu

1. Select Voice Administration.
2. Select Voice Services Administration.
3. Select the [Set Display Options] softkey.

   The Set Display Options screen is displayed.
4. Make the desired selections to customize the way in which data is displayed and sorted.
5. Choose step 5a to save the changes or 5b to cancel.
   a. Use [Save].

      The changes are saved and you are returned to the V oice Services Administration menu.
   b. Use [Cancel].

      Changes are discarded and you are returned to the V oice Services Administration menu.

Finding a subset of VSDNs or services

If the VSDN table is accessed directly from the Voice Services Administration menu, all VSDN entries are retrieved and displayed. If you want to view or modify a particular VSDN or a subset of VSDNs, and do not want to have to search through the entire list of VSDNs, use the [Find Subset of VSDNs/Services] softkey. By specifying your search criteria you can retrieve a particular VSDN (by specifying the exact DN) or a subset of VSDNs (by using wildcard characters to create a search pattern). Wildcard characters are explained in the following section.

If the Voice Menus feature is enabled, the Find function can also be used to find a particular service definition or a subset of service definitions (such as an Announcement, Thru-Dial service, Time-of-Day Controller, or Voice Menu). When you select Announcement Definitions, Thru-Dial Definitions, Time-of-Day Control Definitions, or Voice Menu Definitions

from the Voice Services Administration menu, all Announcements, Thru-Dial services, Time-of-Day Controllers, or Voice Menus are listed. Depending on how many services are defined, this list can be quite long. To retrieve a particular service definition or a subset of definitions, use the [Find Subset of VSDNs/Services] softkey.

To use the find functionality, you will have to remember some information about the VSDN or service you are trying to retrieve. In the case of a VSDN, you must be able to specify part or all of the DN, the service that is represented by the VSDN (Announcement, Voice Menu, etc.), or the comment that is stored as part of the DN information. In the case of a voice service, you must be able to provide the exact service ID or part (or all) of the service title.

If you leave all of the fields in the Find Subset of VSDNs/Services screen blank, a list of all VSDN entries/services will be displayed.

A [Find] softkey is also available in the VSDN table to help you retrieve a particular VSDN or a subset of VSDNs once you have accessed the VSDN table. This softkey is also available from the service definition selection menus (such as the Announcement Definitions screen). When you press the [Find] softkey, the Find Subset of VSDNs/Services screen is displayed (Figure 10-19). This allows you to switch between different service definitions and DN definitions without having to sort through a hierarchy of menus. Since there is no restriction on the order in which objects (DNs, announcements, thru-dial services, and so on) are added to the system, you can manipulate DN information and then cross check the associated service definitions or vice versa.

Using wildcard characters

You can use wildcard characters in the following fields: *Comment* and *Title*. (The *ID* and *Service* fields do not accept wildcard characters.) Where accepted, the three valid wildcard characters are: "+" (the plus sign), "_" (underscore), and "?" (question mark).

The plus sign (+) is used to match a number of characters. For example, if you enter "2+" in the *DN* field, all DNs beginning with 2 will be retrieved.

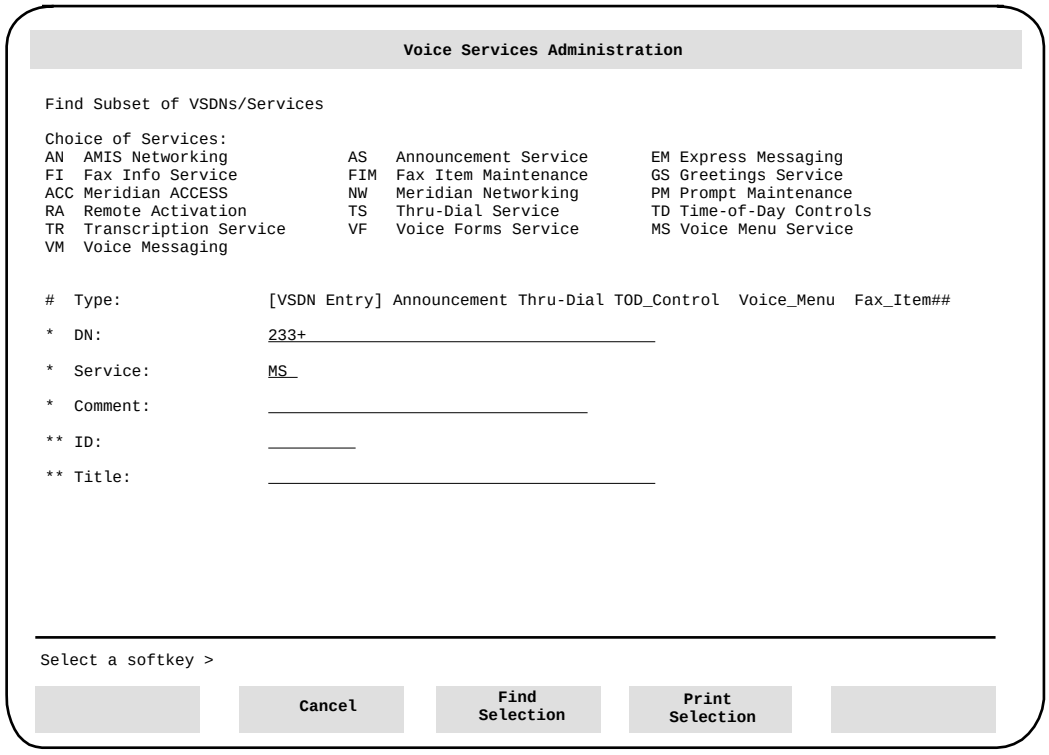
The underscore (_) matches a single character. For example, if you enter "210_" in the *DN* field, DNs in the range 2100 to 2109 will be retrieved. To retrieve all DNs numbered between 2100 and 2199, enter "21_ _".

The question mark (?) produces a "sound match." This is useful if, for example, you want to retrieve a particular service DN by title, but you are unsure of its spelling or you remember only part of the title.

The Find Subset of VSDNs/Services screen

The same screen is displayed regardless of how it is accessed-either from the Voice Services Administration menu using the [Find Subset of VSDNs/Services] softkey, or from the VSDN table or a service definition using the [Find] softkey.

Figure 10-19
The Find Subset of VSDNs/Services screen



\# This field is displayed if the Voice Menus feature is installed.
\## Fax_Item is displayed only if Fax on Demand is installed.
* These fields are displayed if Type is VSDN Entry.
** These fields are displayed if Type is not VSDN Entry.

Note: If this screen is accessed from the VSDN table or one of the service definition screens, the screen may or may not be prefilled with some information. This depends on whether or not an item was

preselected when the [Find] softkey was pressed. If no item was selected, the fields in the form will be blank. If an item was selected (such as a DN in the VSDN table), then some of the fields will be datafilled with the information obtained from the selected item (such as the DN, Service and Comment).

The following fields appear on the Find Subset of VSDNs/Services screen:

- ***Choice of Services*** This is a list of available services and their acronyms.
- ***Type*** This field is displayed only if Voice Menus are enabled. If they are not enabled, you can only retrieve VSDNs. This field specifies the type of information you wish to retrieve. Your choices are
  - VSDN Entry
  - Announcement
  - Thru-Dial
  - TOD Control
  - Voice Menu
  - Fax Item (if Fax on Demand in installed)

The following fields are displayed only if *Type* is "VSDN Entry":

- ***DN*** To find a particular DN, enter the full DN in this field. To retrieve a subset of DNs, use wildcard characters to create a search pattern.
- ***Service*** To retrieve all of the VSDNs for a particular service type (Announcements, Thru-Dial services, Time-of-Day Controllers, or Voice Menus), enter the acronym for that service. For example, to retrieve only announcement DNs, enter AS in this field. This field does not accept wildcard characters.
- ***Comment*** Any comment you enter here must match the comment that was entered in the Add or View/Modify DN Information screen. Wildcard characters are acceptable.

The following fields are displayed only if *Type* is *not* "VSDN Entry":

- ***ID*** To retrieve a particular service definition, enter the service ID in this field. If this field is left blank, all service definitions that match any other search criteria will be retrieved. You cannot use wildcard characters in this field.
- ***Title*** To retrieve a specific service definition, enter the title. The title must match exactly the title that was entered when the service definition was created. If you cannot remember the exact title of the service, use wildcard characters to create a search pattern.

Once you have filled in this screen, use the [Find Selection] softkey to display the results, or the [Print Selection] softkey to print the results.

Procedure 10-16
Finding or printing a subset of VSDNs or services

Starting point: The Main Menu

1 Select Voice Administration.

2 Select Voice Services Administration.

3 Press the [Find Subset of VSDNs/Services] softkey.

The Find Subset of VSDNs/Services screen is displayed.

4 Fill in the Find Subset of VSDNs/Services screen. See the field descriptions on the preceding pages.

5 To view the results on the screen, go to step 5a. To print the results, go to step 5b. If you do not want to continue, go to step 5c.

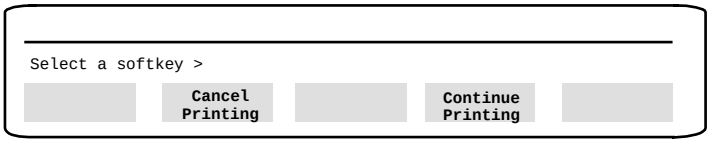
a. Press the [Find Selection] softkey.

If the data type was VSDN Entry , the VSDN Table is displayed.

If the data type was a voice service (announcement, thru-dial service, time-of-day controller , or voice menu), the list of service definitions is displayed (such as the Announcement Definitions screen).

b. Press the [Print Selection] softkey.

You are prompted to verify that the printer is ready and the following set of softkeys are displayed:



Press [Continue Printing] to go ahead with printing.

Press [Cancel Printing] if you do not want to print at this time. Y ou can also press this softkey once printing has begun in order to cancel a print job.

c. Press the [Cancel] softkey.

The search is not performed and the V oice Services Administration menu is displayed.

6 If you have retrieved a subset of DNs or services, you can select one of them and then use the [View/Modify] or [Delete] softkey.

The Voice Services-DN Table

The Voice Services-DN (VSDN) Table (Figure 10-20) lists the Directory Numbers (DNs) associated with specific voice services. A DN is required for each voice service that you want users to be able to access directly by dialing a unique DN. The VSDN table maps voice services onto DNs so that when Meridian Mail receives an incoming call, it looks up the DN to determine which service is being requested and which prompts to play.

If a voice service is going to share the agents in the voice messaging queue, you must first ensure that there is an available DN on the DMS/SL-100, or configure one if there is not. If you are going to dedicate agents to the service, you must create a UCD queue on the DMS/SL-100 for the service (if there are none available). See "Configuring Meridian Mail services" earlier in this chapter.

At the very least you must define a DN for Voice Messaging. This is the DN that users dial to log on to Meridian Mail and access their mailboxes. The other DNs are essentially optional. However, the following DNs are commonly configured:

- at least one express messaging DN

- if voice menus are installed, a DN for both remote activation and voice prompt maintenance as well as DNs for any directly dialed voice menu applications such as Announcements, Thru-Dial services, Time-of-Day Controllers, Voice Menus and Voice Forms (if installed).

Figure 10-20
The Voice Services-DN Table

Voice Services Administration

Voice Services-DN Table

DN	Service	Comment
100	NW	Networking
115	EM	Express Messaging
123	PM	Prompt Maintenance
129	AN	AMIS Networking
1459	AS 1090	Announcement
147	TS 3015	Thru-Dialer
153	MS 4001	Voice Menu
1590	VM	Voice Messaging
169	RA	Remote Activation
2	TS 3004	Thru-Dial
310	EM	Express Messaging

Move the cursor to the item and press the space bar to select.

Exit | **Add** | **View/Modify** | **Delete** | **Find**

Note: The VSDN Table is sorted by DN. This can be changed in the Set Display Options screen so that it is sorted alphabetically according to Service or Comment.

The Voice Services-DN Table includes the following read-only fields:

- ***DN*** (Directory Number) This field displays the DN that is dialed to reach the corresponding voice service. In a central office environment, this is the 7-digit line DN or UCD DN. Although DNs are typically the same length, the example in Figure 10-20 shows the fields ordered by DNs of variable length.

  For configurations involving AT&T or ROLM PBXs, enter the DN of the VoiceBridge. For configurations involving NEC PBXs, enter the pilot number of the UCD group.

  Note: If the SMDI link is set to 10-digit messaging, then enter the full 10-digit DN (including the area code).

- ***Service*** This is the service that is reached when the DN is dialed.

  Voice menu applications display a number in this field which represents the ID of the specified service.

- ***Comment*** You can use this field to enter a description of the voice service.

Once you have accessed the VSDN Table, you can use the Find function to retrieve a subset of DNs or a particular DN. When you press the [Find] softkey, the Find Subset of VSDNs/Services screen is displayed. See the description of this screen on page 10-81.

Procedure 10-17
Adding, modifying, and deleting voice service DNs

Starting point: The Main Menu

1 Select Voice Administration.

2 Select Voice Services Administration.

The Voice Services Administration menu is displayed.

3 Select Voice Services-DN Table.

The Voice Services-DN Table is displayed (Figure 10-20).

4 Choose step 4a to add a service DN, 4b to view/modify an existing DN, 4c to delete an existing service DN, 4d to find a specific DN or a subset of DNs, or 4e to exit the VSDN Table.

a. Use [Add].

The Add DN Information screen appears; proceed to the next section, "Adding DN information", for details.

b. Use the cursor keys to move the cursor to the required voice service and press <Space Bar> to select it; use [View/Modify].

The View/Modify DN Information screen appears; proceed to "Modifying DN information" later in this chapter for details.

c. Use the cursor keys to move the cursor to the required voice service and press <Space Bar>. Press the [Delete] softkey.

The Delete DN Information screen appears; proceed to "Deleting DN information" later in this chapter for details.

d. Use [Find].

The Find Subset of VSDNs/Services screen is displayed. If a DN was selected when you pressed [Find], the screen will be datafilled with information taken from the selected DN. If no DN was selected, all of the fields in the screen are blank. See page 10-79 for more information about the Find function.

e. Use [Exit].

The Voice Services Administration menu is redisplayed.

Adding DN information

The Add DN Information screen (Figure 10-21) is accessed from the VSDN Table and is used to assign available DNs to voice services.

Figure 10-21 shows this screen before any information is entered. Additional fields may appear depending on the type of service that is specified. Figure 10-22 shows an example of the *Service* field for all types of services and the additional fields that are displayed (if any) for each of them.

Figure 10-21
The Add DN Information screen

```
                              Voice Services Administration
Add DN Information

*Choice of Services:

AN  AMIS Networking            AS   Announcement Service         EM Express Messaging
FI  Fax Info Service           FIM  Fax Item Maintenance         GS Greetings Service
ACC Meridian ACCESS            NW   Meridian Networking          PM Prompt Maintenance
RA  Remote Activation          TS   Thru-Dial Service            TD Time-of-Day Controls
TR  Transcription Service      VF   Voice Forms Service          MS Voice Menu Service
VM  Voice Messaging

      Access DN:          __________________________________

      Service:            _____

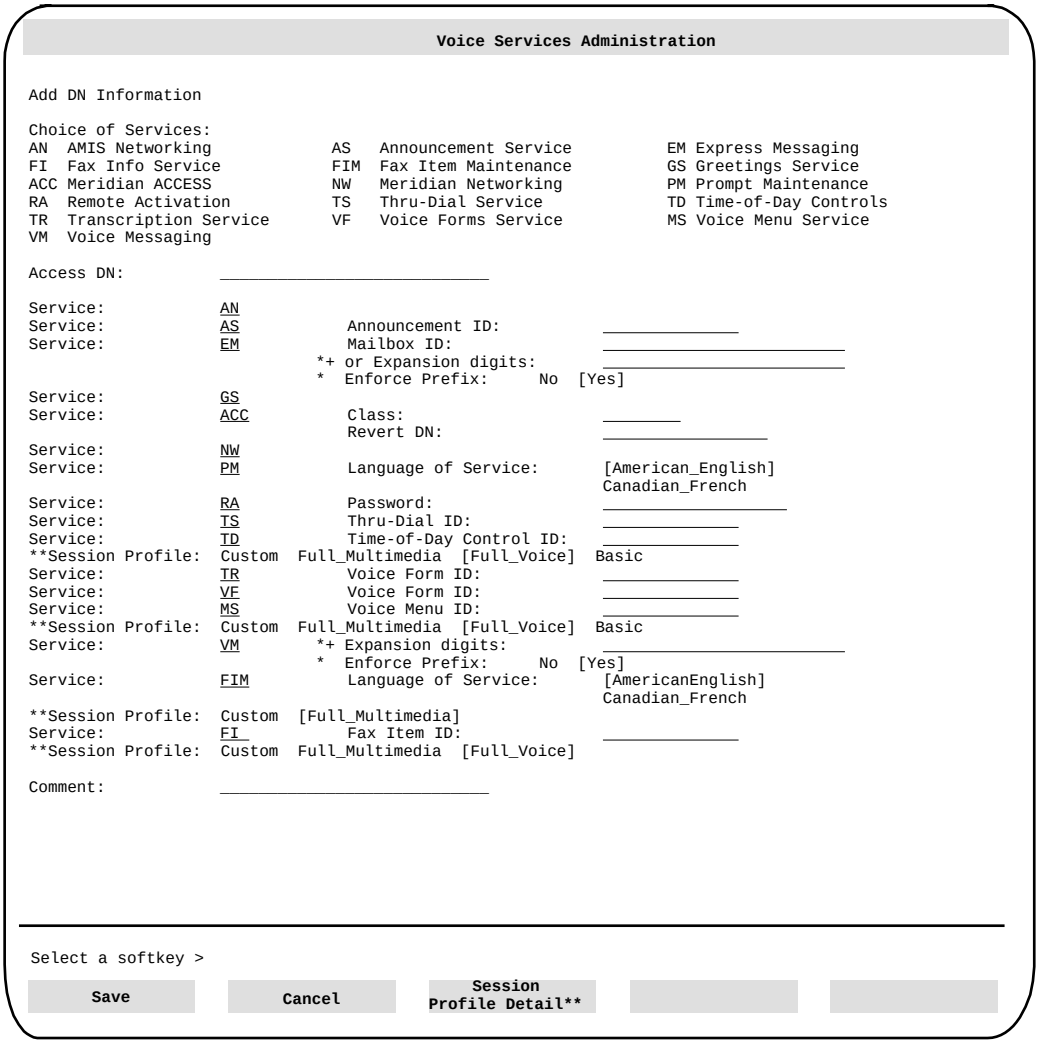
      Comment:            ____________________________

Select a Softkey >

   Save          Cancel          Session
                             Profile Detail**
```

* All possible services are listed in this screen for illustration purposes.
** This softkey is displayed only if the Service is set to MS, TD, FI, or FIM.

Figure 10-22
Additional service fields in the Add DN Information screen



```
                                Voice Services Administration

Add DN Information

Choice of Services:
AN  AMIS Networking            AS   Announcement Service         EM Express Messaging
FI  Fax Info Service           FIM  Fax Item Maintenance         GS Greetings Service
ACC Meridian ACCESS            NW   Meridian Networking          PM Prompt Maintenance
RA  Remote Activation          TS   Thru-Dial Service            TD Time-of-Day Controls
TR  Transcription Service      VF   Voice Forms Service          MS Voice Menu Service
VM  Voice Messaging

Access DN:          _____________________________

Service:            AN
Service:            AS           Announcement ID:          _____________
Service:            EM           Mailbox ID:               _____________________________
                              *+ or Expansion digits:       _____________________________
                              *  Enforce Prefix:     No  [Yes]
Service:            GS
Service:            ACC          Class:                    ________
                                 Revert DN:                ___________________
Service:            NW
Service:            PM           Language of Service:      [American_English]
                                                           Canadian_French
Service:            RA           Password:                 ____________________
Service:            TS           Thru-Dial ID:             _____________
Service:            TD           Time-of-Day Control ID:   _____________
**Session Profile:  Custom  Full_Multimedia  [Full_Voice]  Basic
Service:            TR           Voice Form ID:            _____________
Service:            VF           Voice Form ID:            _____________
Service:            MS           Voice Menu ID:            _____________
**Session Profile:  Custom  Full_Multimedia  [Full_Voice]  Basic
Service:            VM           *+ Expansion digits:      _____________________________
                                 *  Enforce Prefix:     No  [Yes]
Service:            FIM          Language of Service:      [AmericanEnglish]
                                                           Canadian_French
**Session Profile:  Custom  [Full_Multimedia]
Service:            FI           Fax Item ID:              _____________
**Session Profile:  Custom  Full_Multimedia  [Full_Voice]

Comment:            _____________________________

Select a softkey >

[ Save ]  [ Cancel ]  [ Session Profile Detail** ]
```

* Expansion Digits and Enforce Prefix are displayed only if the system addressing length is defined (greater than zero) in the General Options screen. For Meridian 1 systems, the System addressing Length must be set to 0. Therefore, these fields should not show up.

\+ To enter expansion digits, local addressing lengths must be defined in the Voice Messaging Options screen.

** The Session Profile field and Session Profile Detail softkey are displayed only when the service is MS, TD, FI, or FIM.

The following fields are displayed:

- ***Choice of Services*** This field lists the available voice services. The list is sorted horizontally according to the feature description, not the acronym. This can be changed in the Set Display Options screen.
- ***Access DN*** This is the DN that callers dial when accessing the voice service directly. It must be a numeric value without any embedded spaces. This is either the DN of the line that is forwarded to the voice messaging queue (if the service shares agents) or the DN of the UCD queue of the service (if the service has dedicated agents). If there are no available DNs they will have to be programmed into the switch by a technician (or yourself if you are familiar with the procedure).

> **ATTENTION**
> **Avoid duplication**
>
> Ensure that VSDNs do not duplicate mailbox numbers.

- ***Service*** This field defines which service is to be called up when the Access DN is dialed. Depending on the service selected, an extra field may be displayed. These are explained in the following descriptions:

  AN **AMIS Networking** The Access DN establishes a network connection for AMIS format message transfer. No other fields are displayed.

  AS **Announcement service** The following field is displayed:

  Announcement ID The ID specifies which announcement to retrieve when the access DN is dialed.

  EM **Express Messaging** When this service is retrieved, callers are either prompted to enter a mailbox number or are directly connected to a particular mailbox number, depending on whether or not a mailbox ID has been defined. Once connected to the mailbox, the caller can leave a message for the voice messaging user.

  Three additional fields may be displayed when this service is specified: *Mailbox ID*, *Expansion Digits* and *Enforce Prefix*.

You can use either the *Mailbox ID* field or the *Expansion Digits* field (or neither one), but not both.

Note: Express messaging is not available if VMUIF is installed on the system.

Mailbox ID This is an optional field. If you fill in this field, you cannot enter anything in the *Expansion digits* field.

It is possible to have several Express Messaging services. Express Messaging is typically used to provide users with a service whereby they can leave messages in mailboxes without actually ringing the destination phone. Do not enter a mailbox ID for this type of service.

You can also create Express Messaging services that connect callers to a specific mailbox. In this case you will need to enter a mailbox number in the *Mailbox ID* field. This is useful if, for example, you want to create a 'suggestion box.' You can ask users to dial the Express Messaging DN and leave their suggestions in the mailbox. You can then play the messages back. If the mailbox number you specify has not been added to the system (through User Administration), do so after adding the Express Messaging DN.

Each Express Messaging service you create will have a unique Access DN (make sure there are enough line DNs in the switch to accommodate a number of Express Messaging services).

Up to 18 digits can be entered in the *Mailbox ID* field. If networking is installed, up to 28 digits can be entered to accommodate site and location codes for Networking.

Expansion Digits This field is displayed only if the system addressing length (as defined in the General Options screen) is set to a value other than zero. If displayed, this is not a mandatory field.

If you have enabled address expansion, enter the digits that are to be used to expand mailbox numbers to the full system addressing length specified in the General Options screen. See the section "Setting up address expansion" on page 10-5 for details and examples.

Note: To enter a value in this field, both the system addressing length and the local addressing lengths must be specified. The system addressing length is specified in the General Options screen at the system administration level. The local addressing lengths are defined in the Voice Messaging Options screen.

Enforce Prefix This field is displayed only if you have entered expansion digits in the previous field.

If expansion digits are implemented, users can still dial a DN that equals the full system addressing length (such as 10 digits for example). However, if *Enforce Prefix* is implemented, they will not be allowed to enter a DN that conflicts with the expansion digits.

For example, the expansion digits are "416598". If *Enforce Prefix* is set to "No", users would be able to specify a 10-digit DN such as "416-575-2115" when using express messaging. If, however, *Enforce Prefix* is set to "Yes", the message would not be sent in this case since "416575" conflicts with the expansion digits.

This field also affects user login from express messaging. For example, if a user dials "81" to log in to his mailbox after leaving an express message, the user will not be allowed to enter a number that conflicts with the expansion digits.

FI **Fax Information Service** This service allows a caller to retrieve one specific fax item as identified by the fax item ID. Two additional fields are displayed when FI is the selected service.

Fax Item ID This ID specifies which fax item is to be retrieved when the access DN is dialed.

Session Profile Select "Full_Multimedia" or "Full_Voice" to use a default session profile or "Custom" to create a customized profile. The session profile can be viewed by pressing the [Session Profile Detail] softkey. To view a default profile, make sure one of the defaults is selected. To create a customized profile, make sure "Custom" is selected before pressing [Session Profile Detail].

Note: For more information about the session profile, see the section "The session profile" on page 10-100.

FIM **Fax Item Maintenance Service** This service allows an administrative delegate to maintain fax items. The following additional fields are displayed.

Language of Service This field is displayed if more than one language is installed. The selection made here determines the language in which system prompts are played to the user of the service.

Session Profile Select "Full_Multimedia" to use the default session profile or "Custom" to create a customized profile. The session profile can be viewed by pressing the [Session Profile Detail] softkey. To view the default profile, make sure "Full_Multimedia" is selected. To create a customized profile, make sure "Custom" is selected before pressing [Session Profile Detail].

Note: For more information about the session profile, see the section "The session profile" on page 10-100.

GS **Greetings Service** (VMUIF only) This service allows users without DTMF phones to update their greetings in a manner that requires no keypad input. Once connected to this service, the user is prompted to speak at certain times. This can also be provided to subscribers with digitone phones if they desire a simplified interface for changing greetings. No additional fields are displayed.

The greetings service can also be included within a voice menu. However, keep in mind that rotary phone users will not be able to access voice menus, and therefore, cannot access this service through a voice menu. To service your rotary phone subscribers, you need to define a DN in the VSDN table.

ACC **Meridian ACCESS** This service accesses a voice application. The following additional fields are displayed.

Class This field identifies which ACCESS application should be started for an incoming call to the service DN. The application will use this same class value to identify which calls it wants to handle.

Revert DN This field specifies the DN to which calls are transferred if the Meridian ACCESS application has gone off-line.

NW **Meridian Networking** This DN is used to establish a network connection for message transmission. No other fields are displayed.

PM **Prompt Maintenance** This service is used to update prompts in voice menus and related services by a remote phone. The following field is displayed if multiple languages are installed on the system.

Language of Service The selection made here determines the language in which system prompts are played to the user of the service.

RA **Remote Activation** This service is used to call into the system from an off-site phone and assign a different service (such as an autoattendant or announcement) to a particular DN.

Password This password must be defined. The remote activation service cannot be accessed without a password.

Note: If the password field is left blank, remote activation is disabled.

TS **Thru-Dial Service** This service allows a caller to place a call (limited by restriction/permission codes).

Thru-Dial ID This field is mandatory. This is the ID of the thru-dial service to be accessed when the access DN is dialed.

TD **Time-of-Day Control Service** This service directs calls to different services based on the time-of-day (and day of the week) that the call is received.

Time-of-Day Control ID This is the ID of the time-of-day control service to be accessed when the access DN is dialed.

Session Profile Select "Full_Multimedia", "Full_Voice," or "Basic" to use a default session profile or "Custom" to create a customized profile. The session profile can be viewed by pressing the [Session Profile Detail] softkey. To view a default profile, make sure one of the defaults is selected. To create a customized profile, make sure "Custom" is selected before pressing [Session Profile Detail].

Note: For more information about the session profile, see the section "The session profile" on page 10-100.

TR **Transcription Service** This service allows a transcriber to log into a voice form and listen to and transcribe the recorded responses.

Voice Form ID This field is optional. If you enter an ID, the associated voice form will automatically be retrieved for the transcriber. If you do not enter an ID, the transcriber will have to enter the ID of the form he or she wants to transcribe. If you want to provide transcribers with automatic logon to particular voice forms, you will need several DNs for TR. You should also create a DN that does not reference a particular form, so that it can be used as a general access to the transcription service.

VF **Voice Forms Service** This service connects a caller to the specified voice form. The voice form then asks the caller a series of questions to which the caller responds with spoken answers.

Voice Form ID This is the ID of the voice form service to be retrieved when the access DN is dialed. This ID is defined when the voice form is created in the Add a Voice Form Definition screen.

MS **Voice Menu Service** This service provides callers with a series of options from which they can make a selection by pressing the appropriate key on their telephone keypad (provided they have DTMF capability). The following additional fields are displayed.

Voice Menu ID This is the ID of the top-level voice menu service to be retrieved when the access DN is dialed. This ID is defined when the voice menu is created in the Add a Voice Menu Definition screen.

Session Profile Select "Full_Multimedia", "Full_Voice," or "Basic" to use a default session profile or "Custom" to create a customized profile. The session profile can be viewed by pressing the [Session Profile Detail] softkey while the cursor is on this field. To view a default profile, make sure one of the defaults is selected. To create a customized profile, make sure "Custom" is selected before pressing [Session Profile Detail].

Note: For more information about the session profile, see the section "The session profile" on page 10-100.

VM **Voice Messaging** This service allows callers to log on to voice messaging. The following field is displayed.

Expansion Digits This field is displayed only if the system addressing length (defined in the General Options screen) is set to a value other than zero. If displayed, this is an optional field.

If you have enabled address expansion, enter the digits that are to be used to expand mailbox numbers to the system addressing length. These digits will be used during mailbox login when the user specifies his or her mailbox number. For example, if the user's system addressing length is 10 and she enters 1212 when prompted for a mailbox number, it is expanded to 416-598-1212, if the digits '416 598' are in the expansion digits field.

If, once the user logs in, she composes a message to an address that is shorter than the system addressing length, it will be expanded, based on the user's mailbox number. For example, if a user's full system addressing length is 10 and she composes a message to address 9001, it will be expanded to 416-555-9001. (The "missing" or unspecified digits are taken from the user's mailbox number, not the digits in this field.) See the section "Setting up address expansion" on page 10-5 for details and examples.

Note: To enter a value in this field, both the system addressing length and the local addressing lengths must be specified. The system addressing length is specified in the General Options screen at the system administration level. The local addressing lengths are defined in the Voice Messaging Options screen.

Enforce Prefix This field is displayed only if you have entered expansion digits in the previous field.

If expansion digits are implemented, users can still dial a DN that equals the full system addressing length (such as 10 digits for example). However, if *Enforce Prefix* is implemented, they will not be allowed to enter a DN that conflicts with the expansion digits.

For example, the expansion digits are "416598". A user tries to log into mailbox 416-555-2121. If *Enforce Prefix* is set to "No", the user would be logged in (if he knew the password). If, however, *Enforce Prefix* is set to "Yes", the user will not be allowed to log in since "416555" conflicts with the expansion digits.

- ***Comment*** This field is optional and can be used for descriptive purposes. This field holds up to 19 characters. The following characters cannot be used in this field: "?", "+", and "_". These are reserved as wildcard characters (used when specifying search criteria for retrievals). In the VSDN table, you can have entries sorted alphabetically according to the comments entered here by making the appropriate selection in the Set Display Options screen.
- ***Session Profile*** This field is applicable only if the VSDN starts up one of the following services: a Voice Menu, a Time-of-Day Controller, the Fax Information service, or the Fax Item Maintenance service. (In other words, it is displayed only if the *Service* field is set to MS, TD, FI, or FIM.)

  The session profile determines the capabilities of a call-in session. For example, it defines the session time limit, the number of invalid selections, the maximum number of fax selections, and the fax delivery option, among other parameters.

The types of session profiles that are available to you depend on whether or not Fax on Demand is installed and/or if the system is configured with

- full service ports, basic voice ports, or both
- voice ports, multimedia ports, or both

Table 10-9 indicates the session profiles that you will be allowed to choose from based on the kinds of ports that are installed on the system.

Table 10-9
Session profile availability based on port types installed on system

Port capacity/type	Session profile selections
Basic Voice Ports only	Custom and Basic
Full Service Voice Ports and Basic Voice Ports	Custom, Full_Voice, and Basic
Basic Voice Ports and Full Service Multimedia Ports	Custom, Basic, and Full_Multimedia
Full Service Voice Ports, Full Service MultiMedia Ports, and Basic Voice Ports	Custom, Full_Voice, Full_Multimedia, and Basic

Note: For the Fax Item Maintenance Service (FIM), the only choices are "Custom" and "Full_Multimedia".

- ***The Basic profile*** This profile can be selected for voice menus or time-of-day controllers that run only basic services (such as Meridian ACCESS or IVR applications, Announcements, Thru-Dial services, Time-of-Day Controllers, Voice Menus, and related voice menu functions such as disconnect and play prompt).
- ***The Full_Voice profile*** This profile can be selected for Voice Menus or Time-of-Day Controllers that run voice services (such as Voice Messaging, Express Messaging, Voice Forms, or fax services that allow call back delivery only). Note that if you have upgraded your system from Meridian Mail Release 8 to Release 9, this session profile will be applied to all of your existing Voice Menus and Time-of-Day Controllers.

- ***The Full_Multimedia profile*** This profile is required for Voice Menus or Time-of-Day Controllers that run fax services that allow faxes to be delivered on the same call or allow the caller to choose. It is also needed for fax items that will be used as stand-alone applications that use same call or caller choice as the delivery method. It is also required for the Fax Item Maintenance service.

The fields in the preceding three session profiles are read-only. Only the custom profile can be modified.

- ***The Custom profile*** This profile allows you to select the session capability ("Full_Multimedia", "Full_Voice" or "Basic") and customize all parameters appropriate to the service.

If there are "Full_Voice", "Full_MultiMedia" and "Basic" ports on the system, this field defaults to "Full_Voice" for MS and TD and "Full_Multimedia" for FIM and FI.

Procedure 10-18
Adding DN information

Starting point: The Main Menu

1 Select Voice Administration.

2 Select Voice Services Administration.

3 Select Voice Services-DN Table.

4 Press [Add].

The Add DN Information screen appears (Figure 10-21).

5 Enter the Access DN.

6 Specify the service. Fill in any additional fields that appear (if necessary). See the field descriptions on the preceding pages.

7 Enter any comments that you may have.

8 If you are defining a DN for a Voice Menu, a Time-of-Day Controller, the Fax Information service, or the Fax Item Maintenance service, select the desired session profile if the default is not appropriate. Otherwise, continue with step 9.

a. Move the cursor to the Session Profile field.

b. Select a session profile.

c. Press the [Session Profile Detail] softkey to view/modify the session profile.

d. Modify the Session Profile as required if you selected "Custom", or simply view it if you have not selected "Custom".

See the next section, "The session profile", for details.

e. When finished, press [Return to Previous Form].

9 Choose step 9a to save the changes or 9b to cancel.

a. Use [Save].

The changes are saved and you are returned to the Voice Services-DN Table.

b. Use [Cancel].

Any changes made to this screen are not saved. You are returned to the Voice Services-DN Table.

The session profile

The session profile applies only to Voice Menus (MS), Time-of-Day Controllers (TD), the Fax Information service (FI), and the Fax Item Maintenance service (FIM). To access the session profile, select the [Session Profile Detail] softkey from the Add DN (or View/Modify DN Information) screen. If "Custom" is selected in the *Session Profile* field, you will be able to modify the session profile. If any other option is selected, the screen will be read-only.

The fields displayed in the session profile depend on the port capability (full or basic), the port type (voice or multimedia), and the service (MS, TD, FI or FIM). See figures 10-23 to 10-28.

Figure 10-23
Full_Multimedia session profile (MS, TD, FI)

```
                        Voice Services Administration

   Session Profile

 ##Channel Capability Required:            Full_MultiMedia  Full_Voice  Basic

   Session Time Limit (minutes):           10

   Maximum Number of Invalid Selections:   10

*# Maximum Number of Fax Selections:       5

*  Page Limit for Fax Selections:          40

*  Fax Activity Revert DN:

*  Sender Fax Number:

*  Sponsor Fax Item ID:

*  Billing DN:

*  Page Transmission Error Handling:       Quit  Continue

*  Fax Delivery Option:                    Call_Back Same_Call Caller_Choice

*  Call Back Extension Prompt:             No  Yes

*  Call Back Number Area Code Translation:None  North_American_Plan

*  Call Back International DDD:            Not_Allowed  Required  Optional

*  Automatic Cover Sheet:                  No  Yes

*  Sender Name Display:

*  Call Back Dialing Restrictions:         Custom  On_Switch  Local
                                           Long_distance_1  Long_distance_2

Select a softkey >

  Return to
Previous Form
```

"Basic" is not displayed if the service is FI.
* These fields are displayed only if Fax on Demand is installed.
\# For FI, this field is set to 1 and is read-only.

Figure 10-24
Full_Multimedia session profile (FIM)

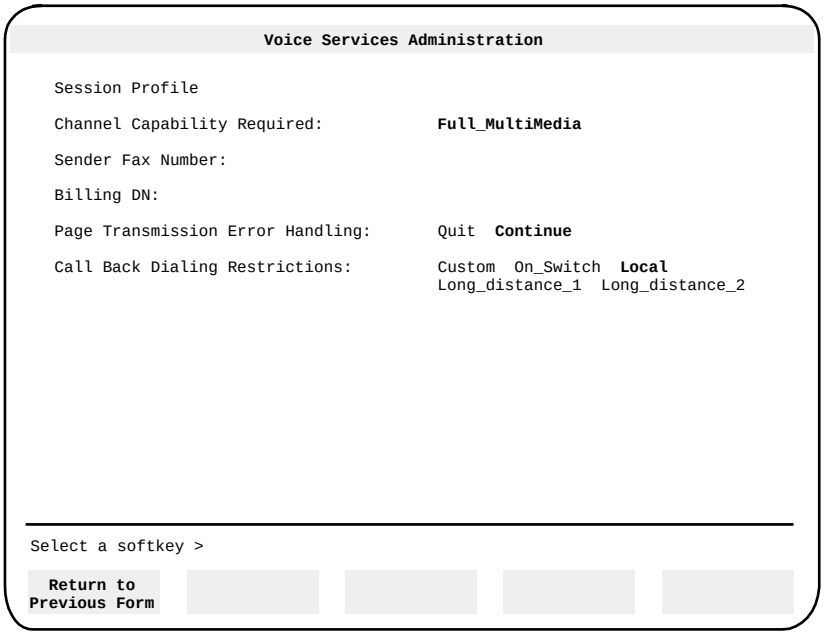
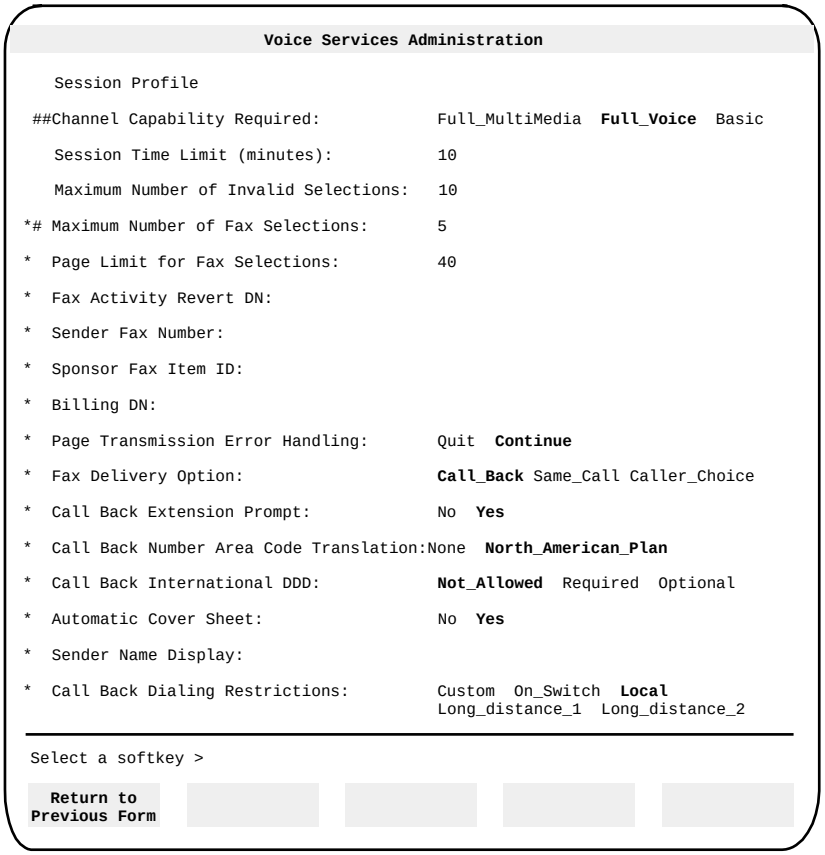


Figure 10-25
Full_Voice session profile (MS, TD, FI)



```
                    Voice Services Administration

   Session Profile

 ##Channel Capability Required:            Full_MultiMedia  Full_Voice  Basic

   Session Time Limit (minutes):           10

   Maximum Number of Invalid Selections:   10

*# Maximum Number of Fax Selections:       5

*  Page Limit for Fax Selections:          40

*  Fax Activity Revert DN:

*  Sender Fax Number:

*  Sponsor Fax Item ID:

*  Billing DN:

*  Page Transmission Error Handling:       Quit  Continue

*  Fax Delivery Option:                    Call_Back Same_Call Caller_Choice

*  Call Back Extension Prompt:             No  Yes

*  Call Back Number Area Code Translation:None  North_American_Plan

*  Call Back International DDD:            Not_Allowed  Required  Optional

*  Automatic Cover Sheet:                  No  Yes

*  Sender Name Display:

*  Call Back Dialing Restrictions:         Custom  On_Switch  Local
                                           Long_distance_1  Long_distance_2

Select a softkey >

  Return to
Previous Form
```

"Basic" is not displayed if the service is FI.
* These fields are displayed only if Fax on Demand is installed.
\# For FI, this field is set to 1 and is read-only.

Figure 10-26
Basic session profile (MS, TD)

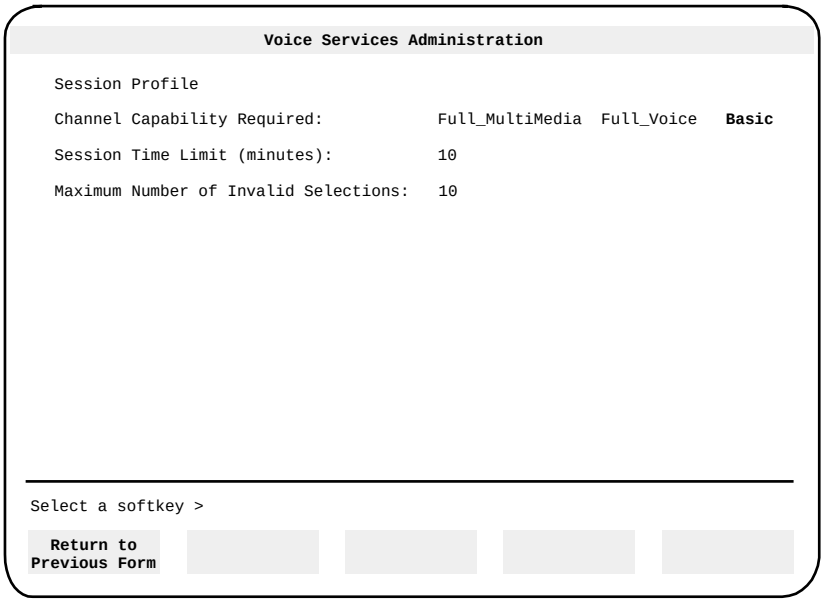
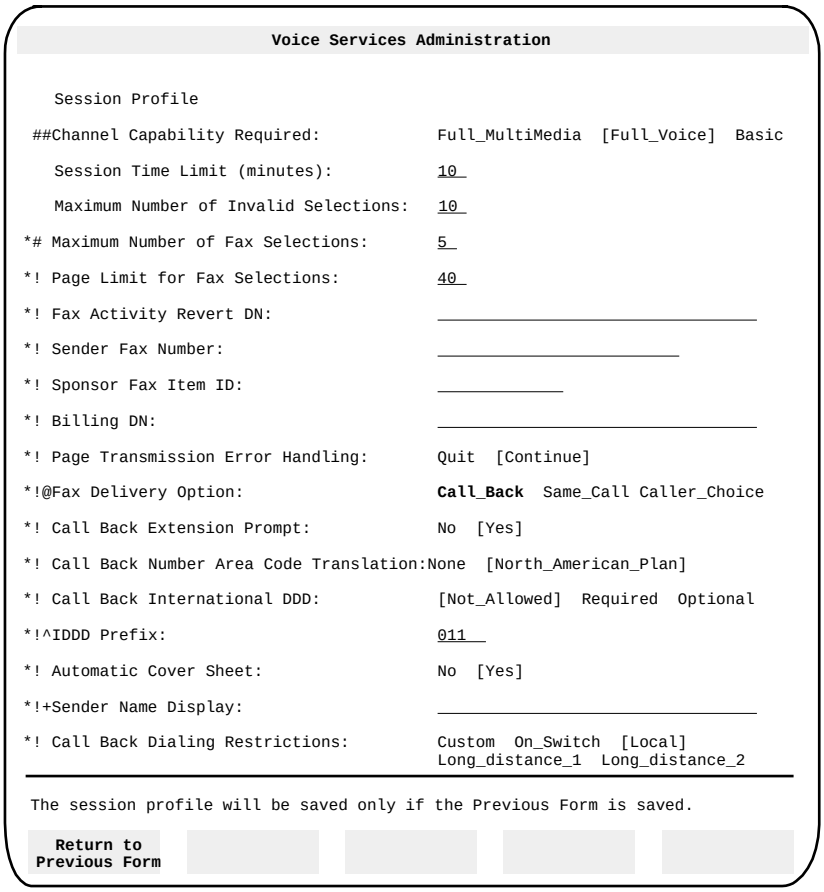


Figure 10-27
Custom session profile (MS, TD, FI, initial setup)



```
                        Voice Services Administration

   Session Profile

 ##Channel Capability Required:            Full_MultiMedia  [Full_Voice]  Basic

   Session Time Limit (minutes):          10

   Maximum Number of Invalid Selections:  10

*# Maximum Number of Fax Selections:      5

*! Page Limit for Fax Selections:         40

*! Fax Activity Revert DN:                ____________________________________

*! Sender Fax Number:                     ____________________________

*! Sponsor Fax Item ID:                   _____________

*! Billing DN:                            ____________________________________

*! Page Transmission Error Handling:      Quit  [Continue]

*!@Fax Delivery Option:                   Call_Back  Same_Call Caller_Choice

*! Call Back Extension Prompt:            No  [Yes]

*! Call Back Number Area Code Translation:None  [North_American_Plan]

*! Call Back International DDD:           [Not_Allowed]  Required  Optional

*!^IDDD Prefix:                           011

*! Automatic Cover Sheet:                 No  [Yes]

*!+Sender Name Display:                   ____________________________________

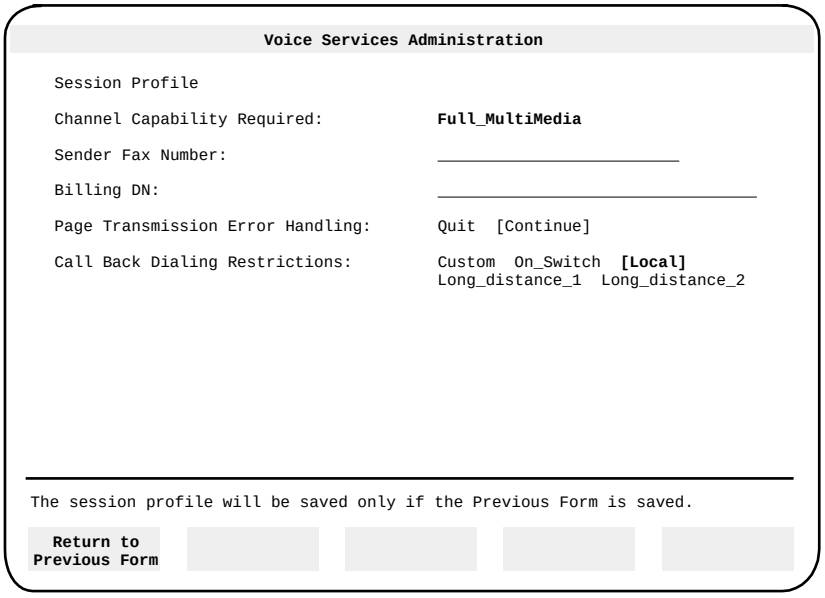
*! Call Back Dialing Restrictions:        Custom  On_Switch  [Local]
                                          Long_distance_1  Long_distance_2

The session profile will be saved only if the Previous Form is saved.

  Return to
Previous Form
```

"Basic" is not displayed if the service is FI.
* These fields are displayed only if Fax on Demand is installed.
\# For FI, this field is set to 1 and is read-only.
! If the Maximum Number of Fax Selections field is set to 0 for a voice menu (MS) and Time-of-Day Controller (TD), these fields are not displayed.
^ This field is displayed only if the previous field, Call Back International DDD, is set to "Optional".
+ This field is displayed only if Automatic Cover Sheet is set to "Yes".
@ If "Full_Voice" is the selected channel capability, this field is read only and defaults to "Call Back". If "Full_MultiMedia" is selected, you can choose the Fax Delivery Option.

Figure 10-28
Custom session profile (FIM initial setup)



All of the fields that can possibly be displayed in the session profile are described on the following pages. You can only modify these fields if you have selected the Custom session profile. Otherwise, all fields are read-only.

- ***Channel Capability Required*** Services require either full service multimedia channels, full service voice channels, or basic service channels. A voice menu or time-of-day controller can use basic voice ports if it runs only basic services (such as Announcements, Thru-Dial services, Time-of-Day Controllers, and in the case of Voice Menus, other menu functions such as play prompt and return to main menu) and/or Meridian ACCESS/IVR applications. Voice menus that include Voice Messaging and/or Express Messaging require full service (voice) ports. The fax information service and the Fax Item Maintenance service also require full service ports. See Table 10-1 on page 10-44 for a complete listing of services and their corresponding port requirements.

- ***Session Time Limit (minutes)*** This is the maximum amount of time that a call session may last. For FI, this time does not include the time consumed by Same Call Fax Delivery. The valid range for this field is 1 to 99 (minutes). The default is 10 minutes.

  Use this field to guard against malicious usage. The limit should be set higher than the worst case of legitimate use.

- ***Maximum Number of Invalid Selections*** Each time a caller makes an invalid selection from a voice menu (or fax menu), an error counter is incremented by one. If this counter reaches the limit defined in this field, an action is taken (the action depends on the type of menu).

  For fax menus, the caller receives the same treatment as for the following field, *Maximum Number of Fax Selections* . For regular voice menus, the session is terminated. The valid range for this field is 1 to 99. The default is 10.

- ***Maximum Number of Fax Selections*** This field determines the maximum number of faxes that a caller can select during one call session. If a caller reaches this maximum, the following message is played: *"You have made the maximum number of selections allowed in one call. If you would like to make additional selections, please call in again."*

  If the session profile is for FI, the default is 1.

  If the session profile is for MS or TD, the default is 5. Even though no Fax Items can be selected directly from a Time-of-Day Controller, it may activate services that do not have VSDNs (but only have service IDs) which in turn activate fax services. If this is the case, you cannot create a session profile for a service that does not have a VSDN. Therefore, the setting for the maximum number of fax selections will come from the top-level service (a menu service or Time-of-Day Controller) since it will have a VSDN associated with it.

  The valid range is 0 to 25. If you are creating a custom profile for a time-of-day controller or a voice menu that does not invoke any Fax Items, you can set this field to 0.

- ***Page Limit for Fax Selections*** This field is displayed if the previous field, *Maximum Number of Fax Selections* , is greater than 0. If a caller makes a fax selection and the page count exceeds this value, the caller will not be able to make another selection. (The current selections, including the last selection which exceeded the page limit, will be delivered.) The valid range is 1 to 99. The default is 40.
- ***Fax Activity Revert DN*** This is the DN to which a caller will be transferred if he or she encounters difficulties while engaged in any fax related activities (such as delivery setup, same call delivery initiation). For Voice Menus with Fax Items, any revert operation required outside of the fax selections uses the *Voice Menu Revert DN* specified in the voice menu definition.

  This field is blank by default. Therefore, the attendant DN is used. If this DN is also undefined, the caller is informed that the call cannot be continued. The call is then disconnected. The maximum DN length is 30 digits.
- ***Sender Fax Number*** This number represents the "calling terminal ID" and identifies the sending fax phone to the caller. It is displayed in the trim tab. (The trim tab is printed on each page of any transmission from a Meridian Mail system. It includes the date of the transmission, the start time of the transmission, this sender number, the callback telephone number of the recipient (in the case of call back delivery), an optional extension number, the current page number and the total number of pages.)

  This field is blank by default, in which case the sender’s contact number is not displayed in the trim tab.
- ***Sponsor Fax Item ID*** This is an optional FI identifier. This field is blank by default. A sponsor fax item can be used as a custom cover sheet (in place of, or in addition to the automatic cover sheet). For example, the automatic cover sheet is generated in English only. To create a cover page in another language, you would have to create a special fax item for the cover page (the sponsor fax item), and then enter its service ID in this field. You could then turn off the automatic cover sheet. Or, you might want to create a custom cover sheet with your company logo on it.

If a service ID is entered in this field, the associated fax item will be delivered along with the selected fax(es). It is transmitted after the automatic cover sheet (if turned on), or in place of the cover sheet, and before the first caller-selected fax item.

The sponsor fax item is not counted by the *Maximum Number of Fax Selections* or *Page Limit for Fax Selections* fields.

- ***Billing DN*** This is an optional DN that, if configured, is used for billing purposes. (Note that this is the number used by telephone companies for billing. Meridian Mail does not do the actual billing.) This field applies only to call back delivery. If same call delivery is used, the caller's number is billed.

  This field is blank by default. If it is left blank, the billing DN is used. If this DN is also undefined, the call is billed to the VSDN that the caller dialed.

- ***Page Transmission Error Handling*** The option selected in this field controls how the system will respond to page transmission errors. There are two options:

  - ***Quit*** The current delivery attempt is aborted when a page transmission error occurs.
  - ***Continue*** The error is ignored and the next page is transmitted.

  The default is "Continue".

- ***Fax Delivery Option*** This field is applicable only if *Maximum Number of Fax Sessions* is greater than 0. This field is read-only if the channel capability is "Full_Voice". In this case, this field is set to "Call Back" and cannot be changed. If "Full_Multimedia" is selected as the channel capability, then you can select the fax delivery option.

  Your choices are

  - ***Call Back*** If call back delivery is selected, callers do not have to call the service from a fax phone. Callers will be prompted to enter a call back number (and optional extension number for routing) when a fax item is selected. A short time after the call session is terminated, the fax item(s) will be delivered to the specified number (as long as the number is not restricted - see the description of the *Call Back Dialing Restrictions* field on page 10-114).

- ***Same Call*** If same call delivery is selected, callers must call the service from a fax phone. The fax item(s) will be delivered after the caller presses Receive on the receiving fax machine. Charges are billed to the calling phone.
- ***Caller Choice*** This option allows the caller to dial in from any phone (a fax phone or a regular phone). When a caller selects a fax item, he or she is prompted to choose the method of delivery (same call or call back). The caller hears the following prompt: *"To enter a fax number for later delivery, press 1. If you would like delivery during this call, and are calling from a faxphone, press 1."*

Fax delivery calls that are originated by the system (in other words, call back deliveries) are charged to the Billing DN. Same call fax deliveries are billed to the calling DN.

If "Call Back" or "Caller Choice" is selected, the following fields are displayed. If "Same Call" is selected, this is the last field on the screen.

- ***Call Back Extension Prompt*** This field is displayed only if *Fax Delivery Option* is set to "Call Back" or "Caller Choice". "Yes" indicates that the caller will be prompted for an extension number (in addition to a call back number) when arranging call back delivery. This extension is printed on the cover sheet. If another party receives the fax, an extension number makes it easier to contact the recipient of the fax item(s).
- ***Call Back Number Area Code Translation*** This field is displayed only if *Fax Delivery Option* is set to "Call Back" or "Caller Choice". This field determines the format in which callers must enter a call back number. There are two options:
  - ***None*** This indicates that the caller must enter the call back number as it is to be dialed. This option is meant for systems that are located in countries outside of North America.
  - ***North American Plan*** This indicates that the number of digits required is the North American set of digits (that is, 10 digits, in the format NPA-NXX-XXXX). Note that 1s are accepted when entered (as in 1-NPA-NXX-XXXX) but are removed by the system.

  The default is North American Plan.

- ***Call Back International DDD*** This field is displayed only if *Fax Delivery Option* is set to "Call Back" or "Caller Choice". This field specifies whether an international dialing prefix is not allowed, required, or optional.

  - ***Not Allowed*** This indicates that only domestic dialing is allowed. (Note that only fixed-length domestic dialing plans are supported.) When entering a callback number, the caller is prompted for the area code and the number of the fax phone. The caller is not prompted for a country code. The following prompt is played to callers if this option is selected: *"Please enter the fax number, including the area code."*

    Note that if fax services are provided within North America, long distance calling would be allowed between Canada and the United States since the country code (1) is shared. However, call back numbers outside of Canada and the U.S.A. will not be allowed.

  - ***Required*** This indicates that the callback number is allowed to be outside the domestic dialing plan (that is, it has a different country code) and that the caller will always be prompted (and required) to enter a country code in addition to the area code and fax phone number (even if the caller's number is within the same country code).

    Callers hear the following prompt: *"Please enter the country code followed by number sign."* Once a valid country code is entered, the following prompt is played: "*Please enter the remainder of the number, including area code or city code. When you have finished, press number sign."*

  - ***Optional*** This indicates that the callback number is allowed to be outside the domestic dialing plan (that is, it has a different country code). The country code is optional if the caller is within the same country code as the system.

    The following prompt is played to callers: *"Please enter the fax number, including the area code. For an international number, dial <IDDD prefix> and wait for instructions."* The IDDD prefix that the system announces is taken from the following field.

  If a caller does not enter the correct number of digits when entering the call back number, the following prompt is played: *"[error tone] A complete telephone number was not received. Please try again."*

The default is "Not Allowed".

- ***IDDD Prefix*** This field is displayed only if *Fax Delivery Option* is set to "Call Back" or "Caller Choice" and if *Call Back International IDDD* is set to "Optional". This field is used to specify the digits that will be used to indicate IDDD dialing. If *Call Back International IDDD* is set to "Optional," this prefix must be defined and you will not be able to leave this screen if this field is blank. The default is 011. The maximum field size is five characters.

  When the *Callback International DDD* field is set to "Optional", the following call back prompt is played to callers: *"Please enter the fax number, including the area code. For an international number, dial <IDDD prefix> and wait for instructions."*

  If the caller enters a prefix that matches this field, the following prompt is played: *"Please enter the country code, followed by number sign."*

  After the caller provides the digits, the system prompts for the remainder of the number: *"Please enter the remainder of the number, including area code or city code. When you have finished, press number sign."*

  (Note that in the previously described prompts, the number sign is optional even though it is prompted for.)

- ***Automatic Cover Sheet*** This field is displayed only if *Fax Delivery Option* is set to "Call Back" or "Caller Choice". (In the case of caller choice, this field is used only if the caller selects call back delivery.) If "No" is selected, no cover sheet will be inserted before call back fax transmissions. If "Yes" is selected, a system-generated cover sheet is attached to all call back transmissions. If you are using a sponsor fax item (a customized cover sheet), you may want to suppress the automatic cover sheet. The default is Yes.

  Figure 10-29 shows the cover page that is transmitted when the caller enters an extension number. The cover page in Figure 10-30 is transmitted if the caller does not provide an extension number. (Note that in Release 9 of Meridian Mail, only American English is available for the cover sheet.)

Figure 10-29
Callback cover page (with caller's extension number)

```
  <trim tab>
FACSIMILE TRANSMISSION


TO:             THE PERSON AT EXTENSION xxxx
FAX#:           nnnnnnnnnn
FROM:           sendername ..............
                (AUTOMATED FACSIMILE SERVICE)
PAGES:          nn (INCLUDING THIS COVER PAGE)



IF THIS FACSIMILE IS NOT COMPLETELY READABLE OR IS
MISSING PAGES, PLEASE INFORM THE PERSON AT EXTENSION
xxxx; THEY WILL HAVE TO RE-REQUEST THE INFORMATION FROM
THIS SERVICE.
```

Figure 10-30
Callback cover page (without caller extension number)

```
  <trim tab>
FACSIMILE TRANSMISSION


TO FAX#:        nnnnnnnnnn
FROM:           sendername ..............
                (AUTOMATED FACSIMILE SERVICE)
PAGES:          nn (INCLUDING THIS COVER PAGE)



IF THIS FACSIMILE IS NOT COMPLETELY READABLE OR IS
MISSING PAGES, PLEASE INFORM THE PERSON WHO REQUESTED THE
INFORMATION; THEY WILL HAVE TO RE-REQUEST THE INFORMATION
FROM THIS SERVICE.
```

- ***Sender Name Display*** This field is displayed only if *Fax Delivery Option* is set to "Call Back" or "Caller Choice" and if *Automatic Cover Sheet* is set to "Yes". If this field is set to "Yes", the name that you enter will appear on the cover sheet. (See the *FROM:* field in Figure 10-30). This field is blank by default, implying that the sender's name will not be displayed. You can enter a name of up to 20 characters.

- ***Call Back Dialing Restrictions*** This field is displayed only if *Fax Delivery Option* is set to "Call Back" or "Caller Choice". These codes apply only if the delivery method used is call back since you will be billed for these calls (same call delivery is billed to the calling party). You must, therefore, ensure that you apply the appropriate restriction/permission codes if call back delivery to certain country codes or area codes is not allowed. Perhaps all long distance dialing or international dialing is restricted for some fax items or fax menus, yet permitted for others.

  You can apply one of the already defined restriction/permission sets. (To review these sets, go to the Voice Security Options screen.) Alternatively, you can create a custom set of codes that will apply to calls made to this VSDN only.

  To create a custom set of codes, select the "Custom" option. When you do so, additional fields are displayed in which you can define up to 10 restriction codes and 10 permission codes. Each dialing code can be up to 5 digits in length. Initially, all restriction code fields are prefilled with the digits 0 through 9, essentially restricting all call back numbers. This means that you will have to modify these fields for call back fax delivery to work. All permission code fields are blank by default.

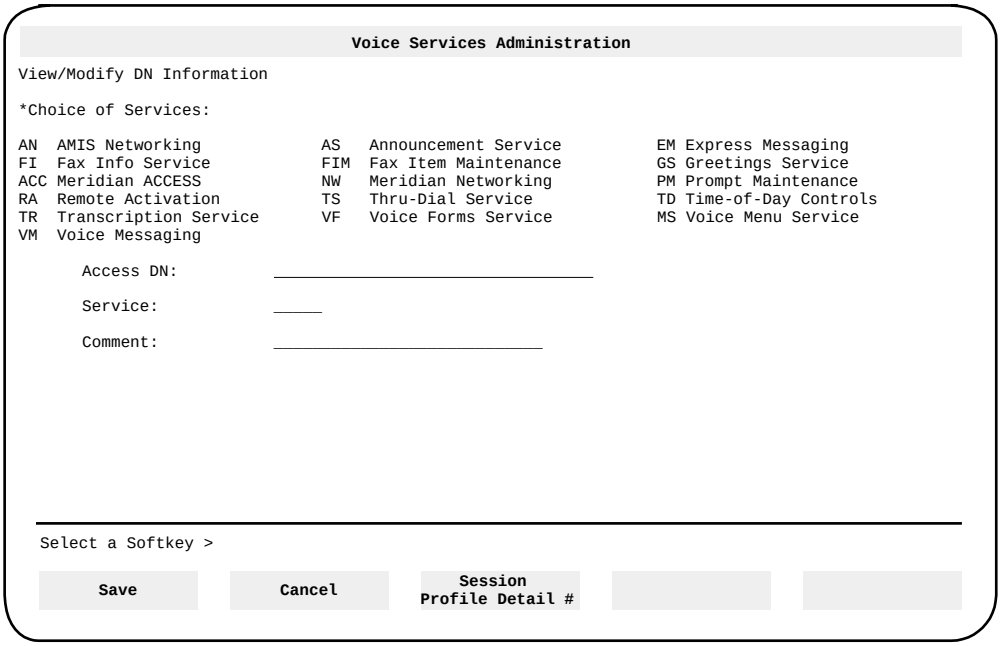
  Restriction codes are used to identify the general rules and permission codes are used to identify exceptions to the rule. For example, to restrict all long distance call back delivery, you would enter the long distance dialing prefix as a restriction code ("91" for example). However, to allow long distance call back delivery to two specific area codes (such as 504 and 205), you would enter "91504" and "91205" as permission codes.

  For a more detailed discussion of restriction/permission codes, see the chapter "System security."

Modifying DN information

Once added to the system, voice service directory numbers can be modified by accessing the Modify DN Information screen (Figure 10-31). For field descriptions, see the preceding section, "Adding DN information."

Figure 10-31
The View/Modify DN Information screen



* All possible services are listed in this screen for illustration purposes.
\# This softkey is displayed only if the Service is set to MS, TD, FI, or FIM. When pressed, access to the Session Profile is gained.

Procedure 10-19
Modifying DN information

Starting point: The Main Menu

1. Select Voice Administration.
2. Select Voice Services Administration.
3. Select Voice Services-DN Table.
4. Move the cursor to the voice service you want to modify and press the <Space Bar> to select it.

5 Press [View/Modify].

The View/Modify DN Information screen appears (Figure 10-31).

6 Change the *Access DN* if necessary.

7 Change the associated service if necessary. Fill in any additional fields that appear (if necessary). See the field descriptions on the preceding pages.

8 Enter any comments that you may have.

9 If this is a voice menu or fax information service DN, modify the customized session profile if necessary.

a. Move the cursor to the *Session Profile* field.

b. Select "Custom".

c. Press the [Session Profile Detail] softkey.

d. Modify the *Session Profile* as required.

e. When finished, press [Return to Previous Form].

10 Choose step 10a to save the changes or 10b to cancel.

a. Use [Save].

The changes are saved and you are returned to the V oice Services-DN Table.

b. Use [Cancel].

Any changes made to this screen are not saved. Y ou are returned to the Voice Services-DN Table.

Deleting DN information

Use the Delete DN Information screen (Figure 10-32) to delete DNs from the Voice Services-DN Table. The fields on this screen are read-only.

Figure 10-32
The Delete DN Information screen

```
                              Voice Services Administration
Delete DN Information

*Choice of Services:

AN  AMIS Networking           AS   Announcement Service         EM Express Messaging
FI  Fax Info Service          FIM  Fax Item Maintenance         GS Greetings Service
ACC Meridian ACCESS           NW   Meridian Networking          PM Prompt Maintenance
RA  Remote Activation         TS   Thru-Dial Service            TD Time-of-Day Controls
TR  Transcription Service     VF   Voice Forms Service          MS Voice Menu Service
VM  Voice Messaging

      Access DN:

      Service:

      Comment:

  Select a Softkey >

      Save          Cancel         Session
                                Profile Detail #
```

* All possible services are listed in this screen for illustration purposes.
\# This softkey is displayed only if the Service is set to MS, TD, FI, or FIM. When pressed, access to the Session Profile is gained.

Procedure 10-20
Deleting DN information

Starting point: The Main Menu

1 Select Voice Administration.

2 Select Voice Services Administration.

3 Select Voice Services-DN Table.

4 Move the cursor to the voice service you want to delete and press the <Space Bar> to select it.

5 Use the [Delete] softkey.

The Delete DN Information screen appears (Figure 10-32).

6 Choose step 6a to delete the service or 6b to cancel.

a. Use [OK to Delete].

The entry is deleted and you are returned to the V oice Services-DN Table.

b. Use [Cancel].

You are returned to the V oice Services-DN T able.

The voice services profile

The parameters configured in the Voice Services Profile screen (Figure 10-33) are more general in nature and apply to all voice services (other than voice messaging services such as express messaging and call answering).

Figure 10-33
Voice Services Profile screen

```
                          Voice Services Administration

Voice Services Profile

Voice Services Volume:  1

Timeouts
   Command Entry:            3.5  seconds    Short Disconnect:   10.0  seconds
   Record (mm:ss):           02:00

Maximum Prompt Sizes for  Announcements (mm:ss):                  02:00
                           other voice recordings (mm:ss):        02:00

*Act on AMIS Initiation Tone: [No]  Yes

Enable Update Logging:       [No]  Yes

Business Hours Default:      08:30 to 17:00

Holidays:
       Start Date      End Date     Start Time      Comments
       (mm/dd/yy)      (mm/dd/yy)   (hh:mm)
   1  12/20/87        01/04/88     08:30           Christmas
   2  01/18/88        ________     08:30           M.L. King
   3  02/15/88        ________     08:30           Washington
   4  05/30/88        ________     08:30           Memorial Day
   5  07/01/88        ________     08:30           Independence
   6  09/05/88        ________     08:30           Labor Day
   7  10/01/88        ________     08:30           Columbus Day

                                                              MORE BELOW
Select a Softkey >
    Save          Cancel
```

* This field is displayed only if AMIS is installed.

The Voice Services Profile includes the following fields:

- ***Voice Services Volume*** This is a read-only field which indicates which volume contains voice service files and voice forms (if any).

Note: If this volume is anything other than 1, you will have to do a full backup of the indicated volume in order to back up voice services (Voice Menus, Voice Forms, Fax on Demand applications) in addition to a full backup of volume 1.

- ***Timeouts*** The values you enter in the following fields determine how long the system will wait under certain conditions before the system takes action (such as disconnecting the caller from the service or playing a delayed prompt).

  Time-out values are used to determine how long the system waits before taking some sort of action (like disconnecting or playing a prompt) under the following circumstances.

  - A caller does not provide an initial response.

    This means that after a caller connects to a voice service, he or she does not provide any keypad input. For example, in a voice menu, after the menu choices prompt is played, a caller is expected to select a menu item by pressing a key. If the caller does not press a key, this is considered an initial no response. *X* seconds after the greeting is played (where *x* is the number specified in the *Command Entry* field), an action will be taken by the system. (For voice menus, you can specify what action the system should take.)

    An initial no response typically means that the caller does not have a touch tone phone and cannot provide DTMF input.

  - A caller delays in responding.

    This means that a caller has provided some sort of DTMF input at some point, but is now delaying in providing further input. (When a caller presses a key, this puts the system into "delayed response mode.") For example, a caller connects to a voice menu which is password protected (the caller enters the password). After the menu greeting prompt has played, the caller does not respond within a certain amount of time. This is considered a delayed response.

  There are three time-outs to define: command entry, short disconnect, and record.

- ***Command Entry*** This time-out value is used in the following situations:

  - In an announcement that is accessed directly, the system will wait this amount of time after playing the announcement, play the announcement a second time, and then disconnect the call.

    This time-out is not used when an announcement is accessed from a voice menu. In this case, the announcement is played once and then the caller is returned to the menu.

    Callers are not really expected to provide input in an announcement. Therefore, this time-out is intended to put a limit on how long a caller will remain connected if he or she stays on the line and does nothing after the announcement is played.

  - In a voice menu, this time-out is used for initial no response and delayed response. (The following time-out value, short disconnect, is used before a disconnect from a voice menu.)

    For voice menus, you can define the action to be taken for an initial no response and delayed response in the voice menu definition. Suitable actions include repeating the menu choices prompt, returning the caller to the main menu (in a multilevel menu), or disconnecting the call. (Disconnecting the call is generally not recommended for initial no response.)

  - In a thru-dial service, this time-out is used if the system is waiting for an initial response (such as an extension number or name after the thru-dial greeting has been played) or if the caller has provided keypad input at some point (and therefore, has a touchtone phone) but is now delaying in providing further input.

    If the caller has not provided any keypad input and the system times out, the caller is transferred to the revert DN that is defined for the thru-dial service. If the caller has provided keypad input, the system will play a series a prompts to help the caller. If the caller still remains on the line without providing further input, the caller is transferred to the revert DN or is disconnected.

  - In the fax information service, a caller may be prompted for an action (such as entering a call back number or extension).

If the caller does not respond and the command entry timeout is exceeded, a help prompt is played. If the caller still does not respond and the command entry timeout is exceeded again, the prompt is played a second time. If the system times out again, the caller is transferred to the revert DN that is defined in the session profile.

The default is 3.5 seconds. You can choose a value between 1.0 and 5.0 seconds.

Note: If you are using a voice menu to accept AMIS networking calls, set this time-out to the maximum allowed value of 5 seconds. If this field is set to less than 5 seconds, an AMIS call may be prematurely disconnected. In addition, the initial no response action defined in the voice menu definition should be set to something other than revert DN which is the default. Instead, it could be set to repeat menu choices. Otherwise, an AMIS call that connects to a voice menu may be prematurely disconnected. If the voice menu is password protected, then the voice menu will never reach the Initial No Response action and the short disconnect time-out will be the time-out value that applies before the call is disconnected.

- ***Short Disconnect*** This time-out value is used in the following situations:

  - In a thru-dial service, this time-out is used for disconnecting the thru-dial service.
  - In a voice menu, this time-out is used for disconnecting the voice menu.

    Figures 10-34 and 10-35 show how these time-out values are used in a voice menu. In these examples, the command entry time-out is set to 3.5 seconds, and the short disconnect time-out value is 10 seconds.

Figure 10-34
Initial no response in a voice menu

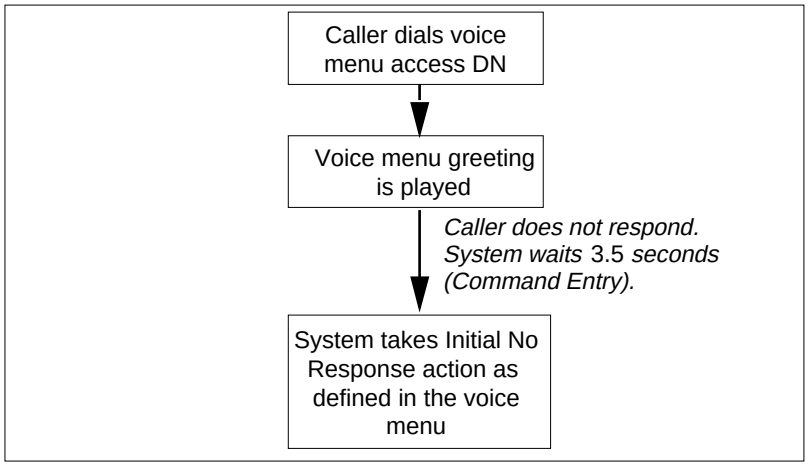
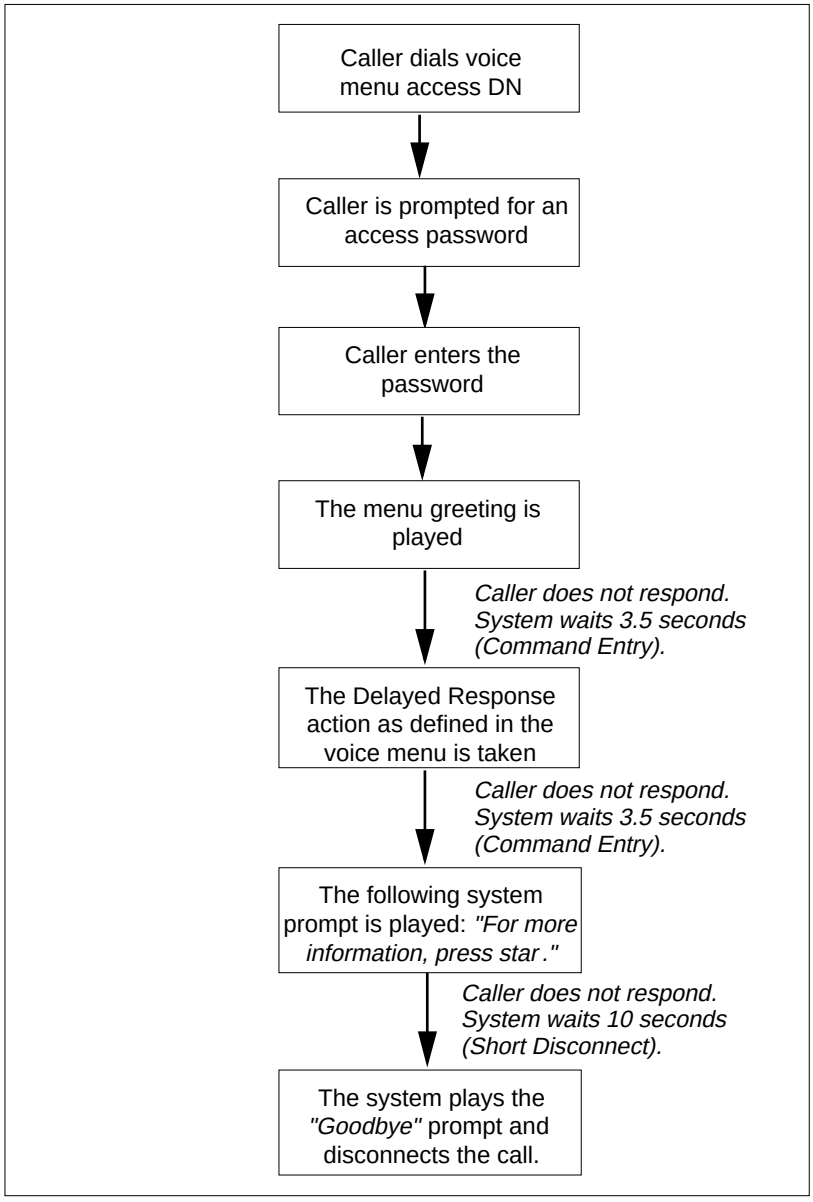


Figure 10-35
Delayed response in a voice menu



You will notice that in a voice menu, callers are given a number of chances to respond. If the caller has provided an initial response and then delays in providing further input, the system waits *x* seconds (the amount of time specified as the command entry time-out). The system takes the action defined for *Initial No Response* in the voice menu definition. After this action, the system waits another *x* seconds and if the caller does not respond, the system prompts the caller to press star for information. (This action is not configurable.) If the caller still does not respond (by pressing star or any other key), the system waits *y* seconds (the amount of time specified as the short disconnect value), plays the system "goodbye" prompt and then disconnects the call.

The default is 10.0 seconds. You may enter a value from 1.0 to 30.0 seconds.

- ***Record (mm:ss)*** This time-out value applies to the recording of prompts for Voice Menus, Announcements, and Thru-Dial services. If during recording, this amount of silence is recorded, the system will disconnect the session. For example, if an administrator is updating an announcement using the voice prompt maintenance service and more than *x* minutes of silence are recorded (where *x* is the record time-out value), the system will disconnect the call.

  The default is 02:00 (mm:ss). You may enter a value from 00:06 to 05:00. This affects all voice services other than Voice Messaging and its associated features (login, call answering, express messaging).

- ***Maximum Prompt Sizes for Announcements (mm:ss)*** This field controls the allowed recording length for prompts for announcement definitions.

  This field is not used if the administrator is recording a prompt for a Thru-Dial service or Voice Menu (through either prompt maintenance or the administration terminal). In these cases, the next field is used to control recording lengths.

If 80% of the maximum prompt size has been recorded, a tone is played to warn that the maximum prompt size has nearly been reached. The following error message is displayed on the administration terminal when the maximum is reached: *"Recording stopped. The time limit was exceeded."*

Enter a value between 00:30 and 10:00. The default is "00:30".

- ***Maximum Prompt Sizes for other voice recordings (mm:ss)*** This field controls the maximum recording length for Voice Menu and Thru-Dial service prompts that are recorded using either the administration terminal or the Voice Prompt Maintenance service.

  If 80% of the maximum prompt size has been recorded, a tone is played to warn that the maximum prompt size has nearly been reached. The following error message is displayed when the maximum is reached: *"Recording stopped. The time limit was exceeded."*

  Enter a value between 00:30 and 10:00. The default is "02:00".

- ***Act on AMIS Initiation Tone*** If an AMIS call comes in through a voice service DN, the voice service (such as a Voice Menu or Thru-Dial service) will either ignore ("No") or react to the AMIS tone and transfer the call to the appropriate AMIS agent ("Yes"). If this field is set to "No", you will have to configure a DN specifically for the AMIS service in the VSDN table. If you plan on using a Voice Menu or Thru-Dial service to accept AMIS calls, then this field must be set to "Yes".

- ***Enable Update Logging*** When this field is set to "Yes", a SEER is generated whenever a VSDN entry, Announcement, Thru-Dial service, Time-of-Day Controller, Voice Menu, or Fax Item is added, modified or deleted to indicate which operation has been performed and on which DN or service ID. The default is No.

- ***Business Hours Default*** Enter the regular business hours for your organization. The hours you enter here are used as defaults in the Add a Time of Day Control Definition screen (see the *Voice Menus Application Guide*, NTP 555-7001-325). These are the hours that your organization is typically open from Monday to Friday. You can, however, override these defaults if necessary. If, for example, Saturday is also a business day, but the hours are 10:00 a.m. to 4:00 p.m., you can enter these special hours when defining a time-of-day controller. The system defaults are 08:30 to 17:00. Hours that fall outside of the range defined here are considered off hours.
- ***Holidays*** Identify the holidays that are observed by your organization (that is, the holidays for which your organization closes). Up to 20 holidays can be defined. The holidays you specify here are used when defining Time-of-Day Controls. See the *Voice Menu Applications Guide* (NTP 555-7001-325) for details.
  - ***Start Date*** This field is mandatory. Specify the date on which the holiday begins. The date format follows that defined in the General Options screen, which is selectable from the General Administration menu.
  - ***End Date*** This field is optional. The date entered here determines the day on which the holiday ends. If you enter a date, it must be later than or the same as the start date. If no end date is specified, the holiday will end on the start date. If the holiday ends on a regular business day, the holiday will end at the end of the business day (5:00 p.m., for example). However, if it is a nonbusiness day, the holiday will end at the end of the day (midnight).
  - ***Start Time*** This field is mandatory. Enter the time at which the holiday starts on the start date. This is usually the normal start of a business day (specified using the 24-hour clock).
  - ***Comments*** This field is optional. You may enter a comment to describe the holiday you are defining.

Chapter 11: Hardware administration

The Hardware Administration screens allow you to view the contents of the hardware database in your Meridian Mail system. The hardware database is a system utility which maintains a current listing and description of all nodes, cards, and ports in your system. If you (or a representative from your support organization) need to modify the hardware database, you must use the "Modify hardware" tool. This tool is documented in *System Administration Tools* (NTP 555-7001-305).

CAUTION
Risk of audit failure
You should not leave the administrative console in any Hardware Administration menu overnight. If you do, important system audits may fail due to lack of available memory, and there will be a security risk.

Hardware configurations available

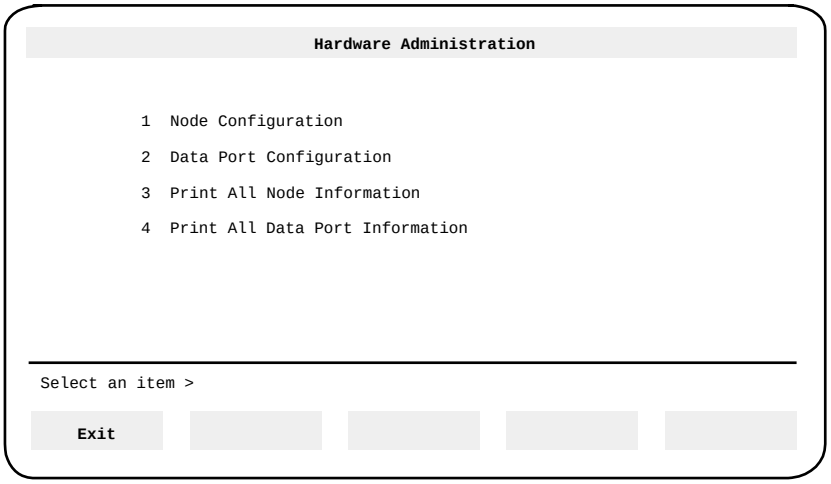
The MMP40 processor card is required for all Meridian Mail platforms with the exception of Card Option and MSM.

This chapter will show sample screens from the MMI including some screens for the Card Option which retains the 68K processor card.

The Hardware Administration menu

From the Hardware Administration menu (Figure 11-1) you can choose to view your system's node configuration and data port configuration. You can also print this information using one of the Print options in the Hardware Administration menu.

Figure 11-1
The Hardware Administration menu



Procedure 11-1
Using the Hardware Administration menu

Starting point: The Main Menu

1 Select Hardware Administration.

The Hardware Administration menu appears (Figure 1 1-1).

2 Choose an item by entering its number and pressing <Return>.

The menu corresponding to your selection appears. See the following sections for details:

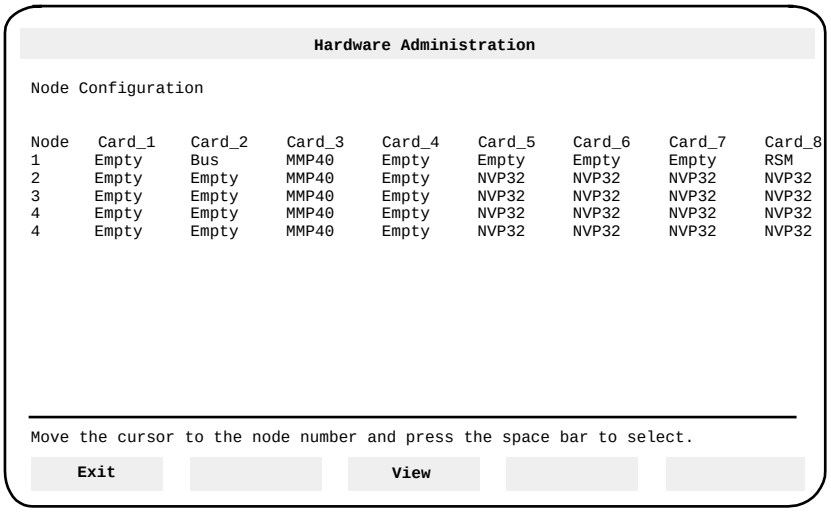
<1> "Node configuration"
<2> "Data port configuration"
<3> "Printing node or data port information"
<4> "Printing node or data port information"

3 Use [Exit] to return to the Main Menu.

Node configuration

The Node Configuration screen is a summary listing of the cards found on all nodes in your system.Figure 11-2 shows a Node Configuration screen for a fully upgraded MMP40 system.

Figure 11-2
Node Configuration screen



Note: The figures in this section do not necessarily represent the hardware configurations on your system. They are illustrations only.

The following abbreviations identify the following cards:

- ***MMP40*** This is the processing card which includes a 24 MHz 68040 processor, 16 Mbyte of memory, up to two RS-232 serial ports, and a SCSI interface processor. It is displayed for MMP40 systems.
- ***RSM*** This is an RS-232 service module (for non-EC systems).
- ***Bus*** This is the high-speed bus (also called HABC for High Availability Bus Controller).
- ***MSP*** This is the multi-purpose signal processor.
- ***GSP*** The general-purpose signal processor

Procedure 11-2
Viewing node configurations

Starting point: The Main Menu

1 Select Hardware Administration.

The Hardware Administration menu appears (Figure 1 1-1).

2 Select Node Configuration.

The Node Configuration screen appears (Figure 1 1-2).

3 Move the cursor to the node you want to view and press <Space Bar>.

Your selection is highlighted.

4 Choose step 4a to view the configuration information of the node or 4b to return to the Hardware Administration menu.

a. Use [View].

The View Node screen appears; see the next section, "V iewing nodes."

b. Use [Exit].

The Hardware Administration screen is redisplayed.

Viewing nodes

The View Node screen displays the cards and ports (and their attributes) that are installed on the node you selected in the Node Configuration screen. Figure 11-3 shows a View (System) Node screen for a non-EC system for a fully upgraded MMP40 system, and Figure 11-4 shows a View (Voice) Node screen for a fully upgraded MMP40 system (an MMP40 card on the primary node).

Figure 11-3
View (System) Node screen

```
                              Hardware Administration

View Node 1 (C=Card D=DSP P=Port)

C-D-P     Card_Type   Port_Type   Attributes

1         Empty

2         Empty

3         MMP40
3   1               Data:       [Terminal]   Printer   NWModem   MMLink  AML/CSL     SMDI   PMS
                                  AdminPlus LIFNLink  Modem
3   2               Data:       Terminal     Printer   NWModem   MMLink  AML/CSL     [SMDI] PMS
                                  AdminPlus LIFNLink  Modem

4         Bus

5         Empty

6         Empty

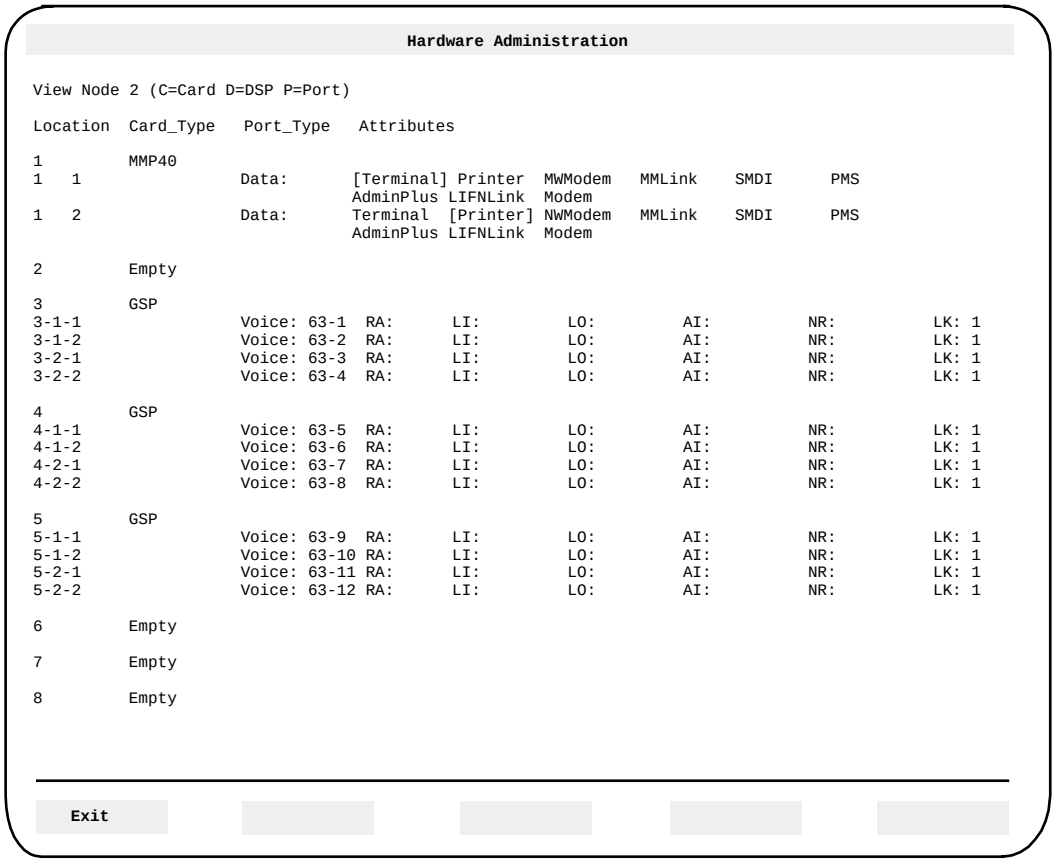
7         Empty

                                                                                    MORE BELOW
Select a softkey >

   Exit
```

Note: If the MMP40 node you are viewing is a system node, you may have the following types of cards installed: MMP40 bus and RSM, or Bus. A voice node might have the following types of cards installed: MMP40 or GSP.

Figure 11-4
View (Voice) Node screen



```
                                  Hardware Administration

View Node 2 (C=Card D=DSP P=Port)

Location  Card_Type   Port_Type   Attributes

1         MMP40
1   1               Data:       [Terminal] Printer  MWModem   MMLink    SMDI      PMS
                                AdminPlus LIFNLink  Modem
1   2               Data:       Terminal  [Printer] NWModem   MMLink    SMDI      PMS
                                AdminPlus LIFNLink  Modem

2         Empty

3         GSP
3-1-1             Voice: 63-1  RA:      LI:         LO:         AI:          NR:          LK: 1
3-1-2             Voice: 63-2  RA:      LI:         LO:         AI:          NR:          LK: 1
3-2-1             Voice: 63-3  RA:      LI:         LO:         AI:          NR:          LK: 1
3-2-2             Voice: 63-4  RA:      LI:         LO:         AI:          NR:          LK: 1

4         GSP
4-1-1             Voice: 63-5  RA:      LI:         LO:         AI:          NR:          LK: 1
4-1-2             Voice: 63-6  RA:      LI:         LO:         AI:          NR:          LK: 1
4-2-1             Voice: 63-7  RA:      LI:         LO:         AI:          NR:          LK: 1
4-2-2             Voice: 63-8  RA:      LI:         LO:         AI:          NR:          LK: 1

5         GSP
5-1-1             Voice: 63-9  RA:      LI:         LO:         AI:          NR:          LK: 1
5-1-2             Voice: 63-10 RA:      LI:         LO:         AI:          NR:          LK: 1
5-2-1             Voice: 63-11 RA:      LI:         LO:         AI:          NR:          LK: 1
5-2-2             Voice: 63-12 RA:      LI:         LO:         AI:          NR:          LK: 1

6         Empty

7         Empty

8         Empty


   Exit
```

The screen displays the following read-only information about each card on the node:

- ***C-D-P (Location)*** This is the physical location of the port in the Meridian Mail system, where C is the Card, D is DSP number (displayed for voice processor cards only), and P is the port number.
- ***Card Type*** This indicates the function of the card; see "Node configuration" for a description of the abbreviations used in this field.

- ***Port Type*** This is the type of port. "Data" indicates a serial data communications port. "Device" indicates a mass storage device or tape drive. "Voice" indicates a voice processor port. "Multi" indicates a multimedia port.
- ***Attributes (for ports with type = Data)***
  - ***Terminal*** This indicates a connection to an administration terminal or a personal computer.
  - ***Printer*** There is a printer serial connection.
  - ***NWModem*** This port has a connection to a modem used for networking calls.

    Note: Ports on the MMP40 card do not support networking. The RSM card (on non-EC systems), however, does support networking.
  - ***MMLink*** Meridian ACCESS Link is the communications channel for Meridian ACCESS.
  - ***SMDI*** This is a Simplified Message Desk Interface. This is a communications channel between Meridian Mail and a DMS-100, DMS-10, SL-100, AT&T, ROLM, or NEC switch.
  - ***PMS*** (Not applicable. This is used only in Hospitality systems).
  - ***AdminPlus*** This indicates a connection to a PC equipped with AdminPlus.
  - ***LIFNLink*** (Not applicable)
  - ***Modem*** This indicates a connection to a modem used for remote access.
- ***Attributes (for ports with type = Device)***
  - ***Disk*** A mass storage subsystem (hard disk) is present.
  - ***Tape*** A cartridge tape subsystem is present.
- ***Attributes (for ports with type = Voice or Multi)***
  - ***RA*** Routing Address <Address> which consists of the set of numbers MM-TTTT, where

    MM = MDN (0-63) Message Desk Number

    TTTT = TN (0-1023) Terminal Number

- ***LI (login code)*** This is the channel access code for logging in to the UCD group/queue (0 to 7 digits). This field should be blank if the SMDI_AUTOLOG option has been configured as "Y" (yes) on the switch. (Meridian Mail requires that AUTOLOG be set to "Y".) When this field is left blank, Meridian Mail inserts a default login code.

  If SMDI_AUTOLOG is configured as "N" on the switch, ensure that the code displayed here matches the code configured on the switch. This code can be obtained from your switch administrator.

- ***LO (logout code)*** This is the channel access code for logging out of the UCD group/queue (0 to 7 digits). This field should be blank if the SMDI_AUTOLOG option has been configured as "Y" (yes) on the switch. (Meridian Mail requires that AUTOLOG be set to "Y".) When this field is left blank, Meridian Mail inserts a default login code.

  If SMDI_AUTOLOG is configured as "N" on the switch, ensure that the code displayed here matches the code configured on the switch. This code can be obtained from your switch administrator.

- ***AI*** This is the Agent ID. This code must match the SMDI line number (LINE_NO) of the agent that is configured on the switch. The LINE_NO can be configured when adding an agent using **so**, by specifying the SMDI option in Table IBNFEAT. (When you respond with SMDI to the DF prompt, you are then prompted for the LINENO.)

- ***NR*** This is the Set Ready, Not Ready Code. This is not applicable for DMS UCD environments and the field should be left blank. NR applies only to DMS ACD environments and is used to put the channel to the ACD queue after the channel has logged in to the ACD group.

- ***LK*** This is the Link ID. The Link ID of the SMDI link is associated with the DSP port.

Data port configuration

The Data Port Configuration screen (Figure 11-5) summarizes the data ports on all nodes in your system. From this screen you can select and view data port configurations. For Networking systems, the modem port settings can also be modified. To modify any data port, use "Modify hardware" at the Tools level (as described in *System Administration Tools* (NTP 555-7001-305)).

> ***Note:*** Only the data port configurations for devices that are part of your system can be viewed.

Before continuing with the description of the Data Port Configuration screen and the View Data Port screens, the recommended data port uses are listed in the tables that follow.

> ***Note:*** The cumulative baud rate of ACCESS links and AdminPlus dataports on a node cannot exceed 19200 on node 1, 38400 on a voice node, and 9600 on Card Option.

Table 11-1
Recommended data port uses for EC systems

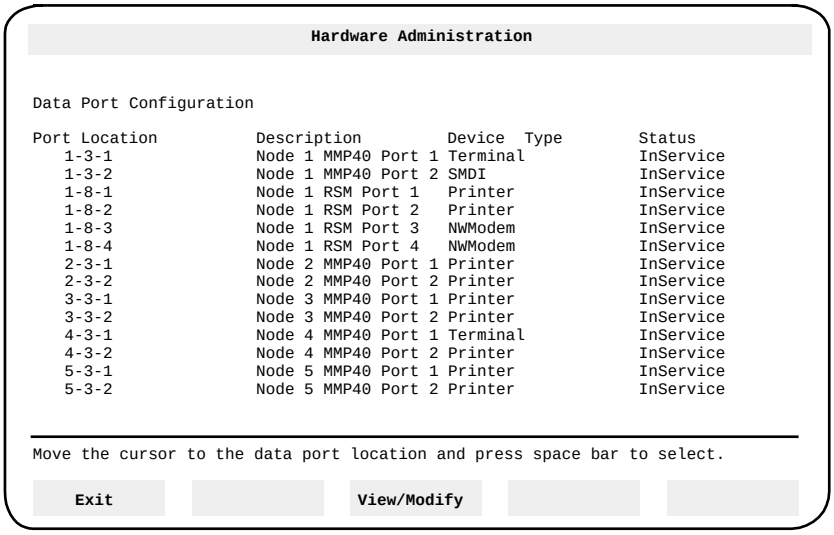
Port	Allowable uses
Node 1 MMP40 port 1: DP1	System Console or AdminPlus
Node 1 MMP40 port 2: DP2	SMDI
Node 1 RSM port 1: DP3	MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 1 RSM port 2: DP4	MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 1 RSM port 3: DP5	MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 1 RSM port 4: DP6	MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 2 MMP40 port 1: DP7	MAT, Printer, SMDI
Node 2 MMP40 port 2: DP8	Maintenance
Node 2 RSM port 1: DP9	MAT, Network Modem, Printer, SMDI
Node 2 RSM port 2: DP10	MAT, Network Modem, Printer, SMDI
Node 2 RSM port 3: DP11	MAT, Network Modem, Printer, SMDI
Node 2 RSM port 4: DP12	MAT, Network Modem, Printer, SMDI
Node 3 MMP40 port 1: DP13	MAT, Printer, ACCESS Link, SMDI

Port	Allowable uses
Node 3 MMP40 port 2: DP14	Maintenance
-continued-	

Port	Allowable uses
Node 3 RSM port 1: DP15	MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 3 RSM port 2: DP16	MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 3 RSM port 3: DP17	MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 3 RSM port 4: DP18	MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 4 MMP40 port 1: DP19	MAT, Printer, SMDI
Node 4 MMP40 port 2: DP20	Maintenance
Node 4 RSM port 1: DP21	MAT, Network Modem, Printer, SMDI
Node 4 RSM port 2: DP22	MAT, Network Modem, Printer, SMDI
Node 4 RSM port 3: DP23	MAT, Network Modem, Printer, SMDI
Node 4 RSM port 4: DP24	MAT, Network Modem, Printer, SMDI
Node 5 MMP40 port 1: DP25	MAT, Printer, SMDI
Node 5 MMP40 port 2: DP26	Maintenance
Node 5 RSM port 1: DP27	MAT, Network Modem, Printer, SMDI
Node 5 RSM port 2: DP28	MAT, Network Modem, Printer, SMDI
Node 5 RSM port 3: DP29	MAT, Network Modem, Printer, SMDI
Node 5 RSM port 4: DP30	MAT, Network Modem, Printer, SMDI
-end-	

The remainder of this section describes the Data Port Configuration screen and the View Data Port screens. Figure 11-5 shows a Node Configuration screen for a fully upgraded MMP40 system.

Figure 11-5
Data Port Configuration screen



The Data Port Configuration screen displays the following information:

- ***Port Location*** This is the port's physical location (node-card-port) in the system.
- ***Description*** This is the node and card type on which the port resides.
- ***Device Type*** This is the function of the port.

  MMP40 port 1 must be set to Terminal. (If AdminPlus is installed, this port must be set to MMLink or AdminPlus.) MMP40 port 2 must be SMDI. If Meridian ACCESS is installed on your system, the first non-modem port on the RSM card on node 1 must be set to MMLink.
- ***Status*** The current operational state of the port.

  The status can be one of the following:

  - ***InService*** This state indicates that the data port is operational.
  - ***OutOfService*** This state indicates that the data port is no longer operational because the node has been disabled.
  - ***Faulty*** This state indicates that the system has detected an error in the data port.

- ***Unequipped*** This state indicates that the data port is not defined in the hardware database.

Procedure 11-3
Viewing data ports

Starting point: The Main Menu

1 Select Hardware Administration.

The Hardware Administration menu appears (Figure 1 1-1).

2 Select Data Port Configuration.

The Data Port Configuration screen appears (Figure 11-5) .

3 Move the cursor to the port you want to view (or modify if NWModem) and press <Space Bar>.

Your selection is highlighted.

4 Choose step 4a to view the configuration information, or 4b to return to the Hardware Administration screen.

a. Use the [View/Modify] softkey.

The View Data Port screen for the selected device is displayed (if NWModem was selected, the Modify Data Port screen is displayed). See the next section for details.

b. Use [Exit].

The Hardware Administration screen appears.

Viewing data port configurations

The following sections describe the different data port screens which can be displayed. The screen that is displayed is determined by the data port that is selected in the Data Port Configuration screen when you press [View/Modify]. All screens, except the NWModem screen, are read-only. If modifications are necessary, you will have to log on at the Tools level and make the changes in Modify Hardware. See the *System Administration Tools Guide* (NTP 555-7001-305).

Terminal data ports

The View Data Port screen for terminals (Figure 11-6) allows you to view information about the terminal connected to the selected port.

Figure 11-6
View Data Port screen (Terminal - Console)

```
                          Hardware Administration

View Data Port

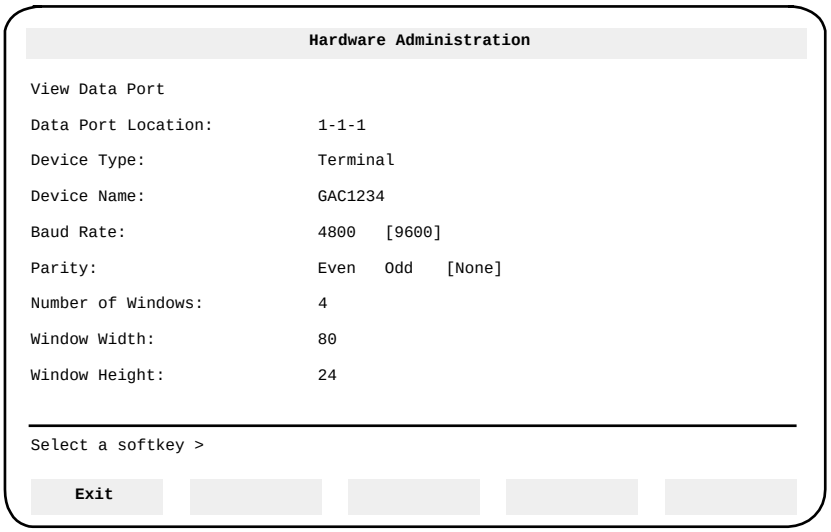
Data Port Location:          1-1-1
Device Type:                 Terminal
Device Name:                 Console
Baud Rate:                   Autobaud
Parity:                      Even   Odd   [None]
Number of Windows:           4
Window Width:                80
Window Height:               24

Select a softkey >

   Exit
```

Note: The fields are described after the following example of a View Data Port screen.

Figure 11-7
View Data Port screen (Terminal - MAT or GAC)



The following read-only fields are displayed in the screen:

- ***Data Port Location*** This is the physical location of the port. A Terminal must be located on node 1, MMP40 port 1 (unless AdminPlus is installed, in which case MMP40 port 1 on node 1 is set to AdminPlus).
- ***Device Type*** "Terminal" will be displayed.
- ***Device Name*** This is the name that identifies the terminal. This name is assigned by the system when Meridian Mail is installed, or when the port is reconfigured using the Install/data tape or the "Modify hardware" tool. The *Device Name* for a terminal data port can also be later modified using the "Modify hardware" tool.
- ***Baud Rate*** The baud rate must be set to "2400".
- ***Parity*** This is the method by which data is communicated. This can be set to "Even", "Odd", or "None", depending on the current setup of the terminal connected to the port. It is usually set to "None".

- ***Number of Windows*** This field specifies the number of windows that can be used simultaneously. Set this field to 4 for the system administration terminal.
- ***Window Width*** This field specifies the window width used. Set this field to 80 for the terminal.
- ***Window Height*** This field specifies the window height used. Set this field to 24 for the terminal.

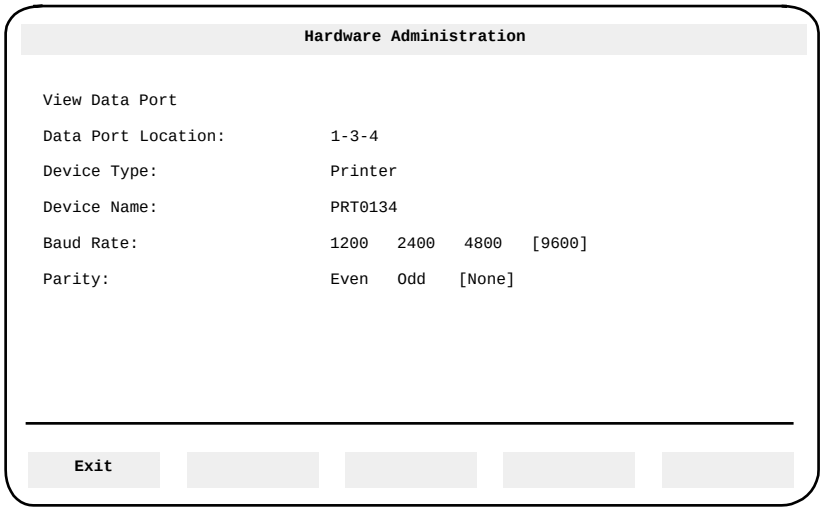
Printer data ports

The View Data Port screen for printers (Figure 11-8) allows you to view the baud rate and parity of the printer that is connected to the selected port.

Note 1: A printer can be attached directly to the administration terminal. It does not require a separate data port.

Note 2: SEERs and operational measurement reports can be directed to a particular printer. If you choose to do this, specify the printer in the General Options screen (see the "General Administration" chapter) and define the printer port using the "Modify hardware" tool (see *System Administration Tools* (NTP 555-7001-305)).

Figure 11-8
View Data Port screen (Printer)



The following read-only fields are displayed in the screen:

- ***Data Port Location*** This is the physical location of the port.
- ***Device Type*** This is the function of the port. Set this field to "Printer".
- ***Device Name*** This is the name that identifies the printer data port. This name is assigned by the system when Meridian Mail is installed, or when the port is reconfigured using the Install/data tape or the "Modify hardware" tool.
- ***Baud Rate*** The setting will depend on the current setup of the printer connected to the port.
- ***Parity*** The setting will depend on the current setup of the printer connected to the port.

MMLink data port

The View Data Port screen for Meridian ACCESS Link (Figure 11-9) allows you to view link characteristics.

Figure 11-9
View Data Port screen (MMLink)

```
                          Hardware Administration

View Data Port

Data Port Location:          1-3-2

Device Type:                 MMLink

Device Name:                 CONSOLE

Baud Rate:                   4800   [9600]    19200     38400

Parity:                      Even   Odd    [None]

   Exit
```

The following read-only fields are displayed in the screen:

- ***Data Port Location*** This is the location of the port in the system.

- ***Device Type*** This is the function of the port. It will be set to "MMLink".
- ***Device Name*** This is the name of the device. This name is assigned by the system when Meridian Mail is installed, or when the port is reconfigured using the Install/data tape or the "Modify hardware" tool.
- ***Baud Rate*** This field can be set to any rate for MMLink.

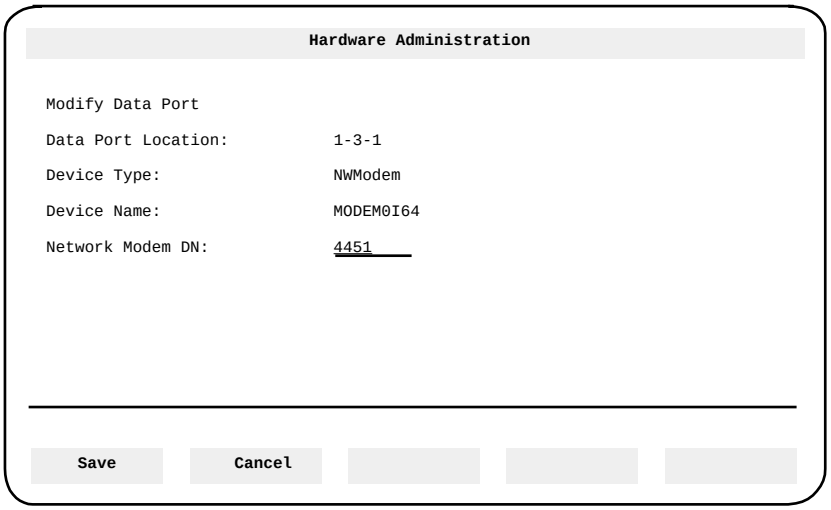
  Note: For the ModOp, ModOp GP platforms with an RSM and the EC platform with a utility card, only 4800 or 9600 are available baud rates.

  Note: For Card Option, only 4800 or 9600 are available baud rates.
- ***Parity*** This field is not used for MMLink.

NWModem data port

The Modify Data Port screen for Networking Modems (Figure 11-10) allows you to specify the Directory Number (DN) of the modem connected to the selected port.

Figure 11-10
Modify Data Port screen (NWModem)



The following fields are displayed on this screen. Only the *Network Modem DN* field is modifiable.

- ***Data Port Location*** This is the physical location of the port in the Meridian Mail system.

  Note: Do not configure networking on an MMP40 port. Use one of the ports on the RSM card.

- ***Device Type*** This is the function of the port. This field must be set to "NWModem".

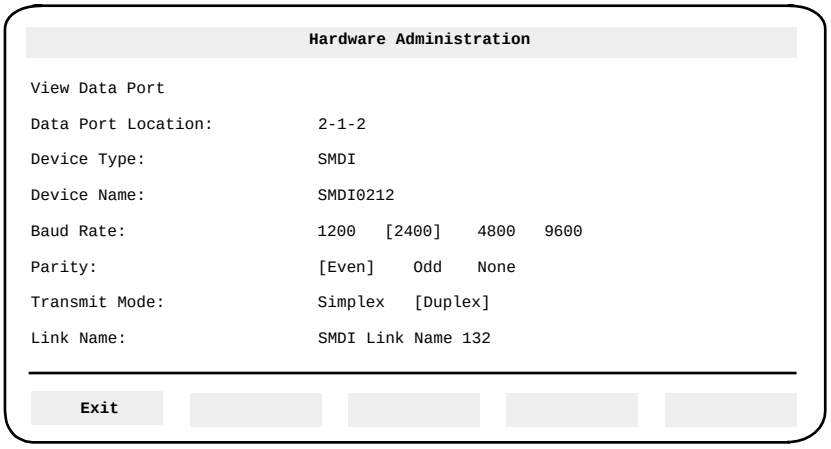
- ***Device Name*** This is the name of the device. This name is assigned by the system when Meridian Mail is installed or when the port is reconfigured using the Install/data tape or the "Modify hardware" tool.

- ***Network Modem DN*** This is the directory number (up to 8 digits) used to identify the modem connected to the port. This field can be modified.

SMDI data port

The View Data Port screen for SMDI (Figure 11-11) allows you to view the baud rate, parity, and transmit mode of the serial connection to the switch at the selected port.

Figure 11-11
View Data Port screen (SMDI)



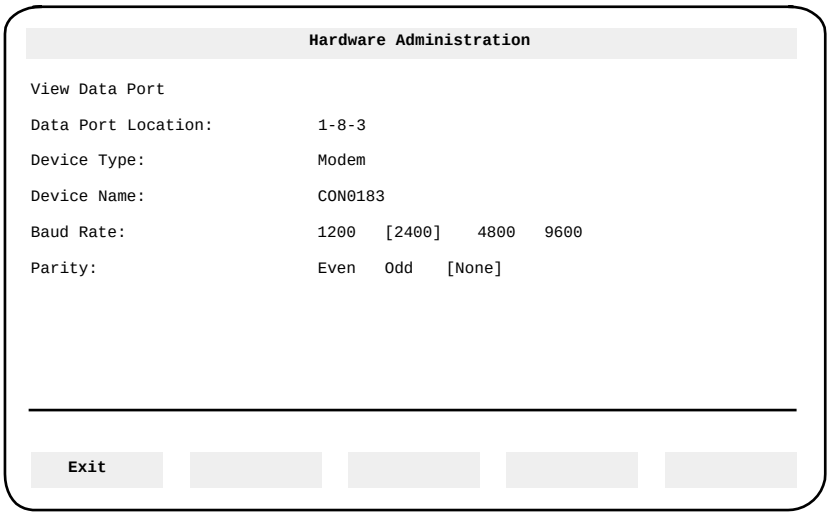
The following read-only fields are displayed on the screen:

- ***Data Port Location*** This is the physical location of the port. This must be MMP40 port 2 on node 1.
- ***Device Type*** This is the function of the port. Set this field to "SMDI".
- ***Device Name*** This is the name of the device. This name is assigned by the system when Meridian Mail is installed or when the port is reconfigured using the INSTALL/DATA tape.
- ***Baud Rate*** This field must be set to "2400" for the MPC card or "1200" for the 1X67FA card.
- ***Parity*** This field must be set to "Even".
- ***Transmit Mode*** This field must be set to "Duplex".
- ***Link Name*** This is the name of the link. You can enter up to 19 numeric or alpha characters in this field. It is recommended that you enter a meaningful name so that it is easy to identify the link. It is not recommended that you change this name once users have been added. See the *System Administration Tools* (NTP 555-7001-305) for more information.

Modem data port

The View Data Port screen for Modems (Figure 11-12) allows you to view the modem characteristics.

Figure 11-12
View Data Port screen (Modem)



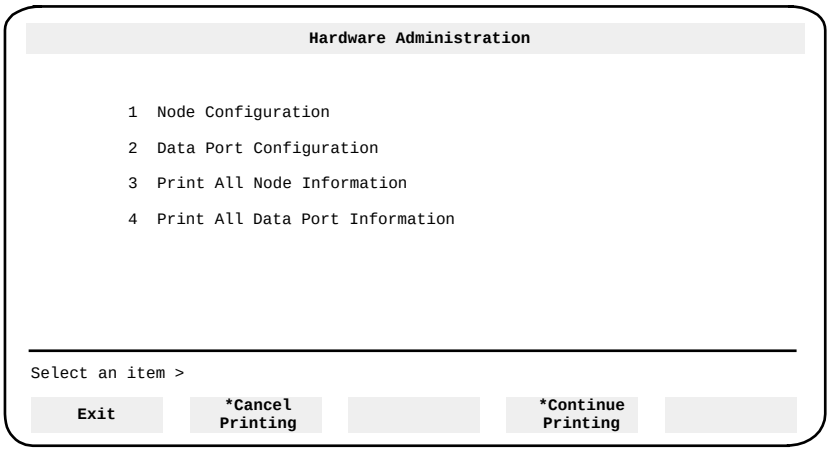
The following read-only fields are displayed on this screen:

- ***Data Port Location*** This is the port's physical location (node-card-port) in the system.
- ***Device Type*** This is the function of the port. This will be Modem.
- ***Device Name*** This is the name of the device. This name is assigned by the system when Meridian Mail is installed, or when the port is reconfigured using the Install/data tape or the "Modify hardware" tool.
- ***Baud Rate*** The setting will depend on the current setup of the modem connected to the port.
- ***Parity*** The setting will depend on the current setup of the modem connected to the port.

Printing node or data port information

The following procedure describes how to print a list of all the node or data port information contained in the hardware database.

Figure 11-13
The Hardware Administration menu



* The Printing softkeys appear when item 3 or 4 is selected.

Procedure 11-4
Printing node and data port information

Starting point: The Main Menu

1 Select Hardware Administration.

The Hardware Administration menu appears as shown in Figure 1 1-1.

2 Select Print All Node Information or Print All Data Port Information.

The following softkeys appear: [Continue Printing] and [Cancel Printing].

You are prompted to check that the printer is ready and on-line.

3 Choose step 3a to print the node information or 3b to cancel.

a. Use [Continue Printing].

The node or data port information begins printing.

Once printing is complete, the Hardware Administration menu is redisplayed; you may stop printing at any time by proceeding to 3b.

b. Use [Cancel Printing].

Printing stops and the Hardware Administration menu is displayed.

There may be some delay before control is returned to the screen while the system waits for the printer to stop printing.

Chapter 12: System status and maintenance

The System Status and Maintenance function provides monitoring and control screens through which you obtain views of the operational state of the system at four levels: system, card, DSP port, and disk. The System Status and Maintenance functions are used in the course of routine maintenance, and allow you to take any component of the system out of service while performing maintenance. A component can be taken out of service by disabling it (forcing it out of its operational state), or by performing a courtesy disable, which progressively disables active DSP ports as they become idle. The Courtesy Disable avoids any disruption of calls in progress.

The following maintenance-related actions can be taken:

- System Courtesy Down

  Take this action for broad maintenance activities, such as reconfiguring the switch, which necessitates a power shutdown on the Meridian Mail system.

- Courtesy Disable Ports or (forced) Disable Nodes

  Take this action to disable all ports on a node. This is necessary in order to put certain cards out of service (such as the SBC card) if they need to be replaced or if diagnostics need to be run.

- Card Disable

  Take this action before performing diagnostics on an in-service card.

- Courtesy Disable or (forced) Disable of DSP Ports

  Take this action before performing tests on a DSP port.

- Disk Maintenance

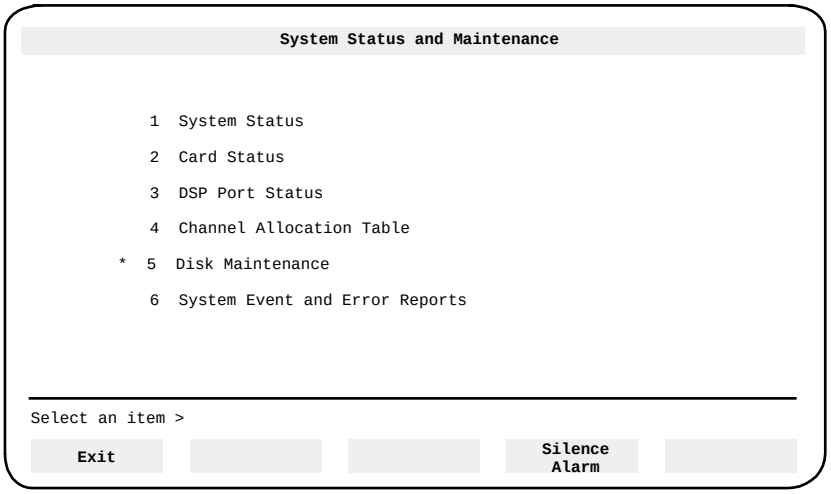
  Take this action to synchronize two paired disks. This feature is available only if Disk Shadowing is installed.

The System Status and Maintenance function also provides a facility to print SEERs, an integral part of service and maintenance activities.

The System Status and Maintenance menu

The System Status and Maintenance menu (Figure 12-1) provides options for viewing the system status, card status, and DSP port status. From this menu you can also manipulate the Channel Allocation Table (CAT), perform Disk Maintenance (if disk shadowing is installed), and view SEERs.

Figure 12-1
The System Status and Maintenance menu



*This item is only available if Disk Shadowing is installed.

Procedure 12-1
Using the System Status and Maintenance menu

Starting point: The Main Menu

1 Select System Status and Maintenance.

The System Status and Maintenance menu appears (Figure 12-1).

2 Choose an item by entering its number and pressing <Return>.

The menu corresponding to your selection appears.

See the following sections for details:

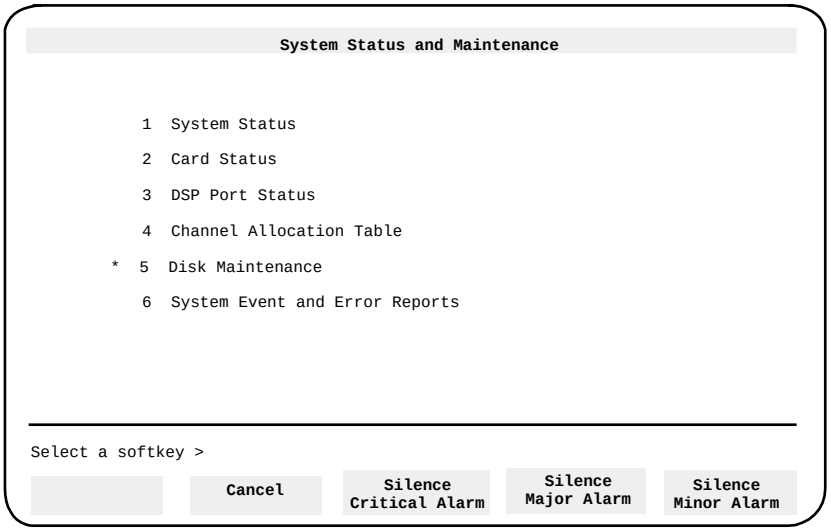
<1> "System Status"
<2> "Card Status"
<3> "DSP Port Status"
<4> "The Channel Allocation Table"
<5> "Disk Maintenance"
<6> "System Event and Error Reports"

3 Press [Exit] to return to the Main Menu.

Silencing alarms

When the system sounds an alarm, you may silence it using the [Silence Alarm] softkey. When this softkey is pressed, the softkeys shown in Figure 12-2 are displayed.

Figure 12-2
Alarm softkeys



*This item is only available if Disk Shadowing is installed.

An alarm will sound if the corresponding severity level SEER is issued indicating that a problem exists. By using the appropriate softkey you can silence either critical, major, or minor alarms. The [Cancel] softkey causes the original set of softkeys to be displayed without silencing any alarms. Try to clear the problem as well or the alarm could be turned on again if you simply silence it. Alarms persist until you silence them. There is no timeout period after which they are turned off by the system. See the "System Status" section for a description of alarm statuses.

System Status

The System Status screen (Figure 12-3) allows you to view the operational status of the system, manipulate the status of the nodes, and courtesy disable the system, or courtesy disable ports on individual nodes. This screen is identical to the System Status screen displayed from the Logon/Status screen, with the exception that this screen has more softkeys available.

Figure 12-3
System Status screen

```
                              System Status and Maintenance

System Status:      InService          Alarm Status: Critical = Off  Major = Off  Minor = On

Last Event:         60-00 PRM:   All System Programs Started      4/19  16:31

Link Status: 1-1-2: InService
                                                  DSP Port Status                         Storage Used
Node   Type   Status           Active   Idle   OutSv     Faulty    Pending    Other    Voice    Text
  1    MSP   InService                                                                  79%       9%
  2    SPN   InService            4       2       6          4         0         0      56%      13%
  3    SPN   InService            4       6       0          6         0         0      29%      21%
  4    SPN   InService           12       0       4          0         0         0      69%      16%
  5    SPN   OutOfService         0       0      16          0         0         0      69%      17%

**Select a softkey >

   Exit        *Enable Node     *Disable Node       *Courtesy       Courtesy Down
                                                  Disable Ports       System***
```

```
 *  [Enable Node], [Disable Node] and [Courtesy Disable Ports] softkeys do not appear on
    single-node systems.
 ** "Enter the number of the node to enable" appears when [Enable Node] is used.
 ** "Enter the number of the node to disable" appears when [Disable Node] is used.
 ** "Enter the number of the node to courtesy disable ports" appears when [Courtesy Disable Ports]
    is used.
 ***When the system  status is CourtesyDown, this softkey becomes [Activate System].
```

Note: The [Courtesy Disable Ports] softkey disables all of the DSP ports on the node that you specify without disabling the node itself. However, faulty ports cannot be disabled.

The following fields are displayed in the System Status screen:

- ***System Status*** This field displays the current system status. Your system can be in one of the following states:
  - ***InService*** This indicates that the system is running.
  - ***CourtesyPending*** This indicates that the system is in the process of shutting down. This occurs after using the [Courtesy Down System] softkey. Incoming calls are directed to an attendant. Calls in progress are not interrupted. Each DSP port is courtesy disabled as it becomes idle. The software remains loaded.
  - ***CourtesyDown*** This indicates that the system has shut down and is no longer operational nor accepting calls. The software remains loaded. When the system is down, the [Courtesy Down System] softkey becomes [Activate System]. When used, the system will restart and eventually return to an InService state.
  - ***Loading*** This indicates that the system is loading software during bootup.
- ***Alarm Status*** This field indicates the state of each of the following alarm categories:

  Critical These alarms indicate a service-affecting problem that requires immediate attention. Consult the "System Event and Error Reports (SEERs)" section on page 12-32 for details.

  Major These alarms indicate a service-threatening problem that may be allowed to persist (for up to 24 hours). If not attended to, the alarm could become critical. Consult the "System Event and Error Reports (SEERs)" section on page 12-32 for details.

  Minor These alarms indicate a problem that has no impact on the system or users. Consult the "System Event and Error Reports (SEERs)" section on page 12-32 for details.

The status for each type of alarm will be one of the following:

- ***Off*** This status indicates that there are no new alarms. This does not necessarily mean that there are no error conditions as alarms may have been silenced from the Logon/Status screen, but the error conditions causing the alarm may still exist.
- ***On*** This status indicates that one or more alarm situations was detected.
- ***Unk*** This status indicates that the status is unknown.

- ***Last Event*** This is the most recent system event or error (SEER) logged.
- ***Link Status*** This is the status of the link to the switch. The link will be in one of the following states:
  - ***InService*** This state indicates that the link is operational.
  - ***Faulty*** This state indicates that a hardware problem exists but that the data port remains operational.
  - ***Unequipped*** This state indicates that the link is not defined in the hardware database. *System Administration Tools* (NTP 555-7001-305) describes how to modify the hardware database.
  - ***InSvYelAlarm*** This state indicates that the SMDI link is in service but has lost the modem connection.
  - ***InSvRedAlarm*** This state indicates that the SMDI link has lost the signaling with the host (DMS-100, DMS-10, SL-100, AT&T, ROLM, or NEC switch).
  - ***OutOfService*** This state indicates that the link is not operational and that calls are not being accepted.
- ***Node*** This is the node number.
- ***Type*** This is the type of node.
- ***Status*** This is the status of the nodes in your system. A node may be in one of the following states:

  Note: The status at this level does not indicate the status of a given card on the node. For more information for particular cards, go to the Card Status screen (page 12-10).

  - ***InService*** This state indicates that the node is operational.

- ***Unequipped*** This state indicates that the node is not defined in the hardware database. *System Administration Tools* (NTP 555-7001-305) describes how to modify the hardware database.
- ***Faulty*** This state indicates that a critical program on the node is not operational.
- ***OutOfService*** This state indicates that the node is no longer operational, as a result of a forced disable.
- ***Loading*** This state indicates that the node is currently starting up and loading software into memory. No software is running when the node is in this state.
- ***Booting*** This state indicates the operating system is being loaded on the node.

- ***DSP Port Status*** These fields reflect the state of each DSP port on the associated node. For each DSP port that is in a particular state, an entry is made in the appropriate column. A DSP port may be in one of the following states:
  - ***Active*** This state indicates that the DSP port is operational and is currently in use.
  - ***Idle*** This state indicates that the DSP port is operational but not in use at the moment. The DSP port is ready to accept calls.
  - ***OutSv*** This state indicates that the associated DSP port is not operational, as a result of a courtesy disable or forced disable.
  - ***Faulty*** This state indicates that an error has been detected in the DSP port.
  - ***Pending*** This state indicates that there has been a request to shut down the DSP port. The port is either in the process of shutting down or restarting.
  - ***Other*** This state indicates that the DSP port is temporarily unavailable. This usually occurs while the system is booting up. The status remains as "Other" while the software is loading. Once fully loaded, the status becomes "Active" or "Idle". The status may also appear as "Other" when you reenable a port (for as long as the necessary software is loading). The status returns to "Idle" once the port has been enabled.

- ***Storage Used*** These fields indicate the amount of voice and text storage used as a percentage of available storage on the user volume of this node. (If the disk on a node is bad, percentages are not displayed.)

Procedure 12-2
Enabling and disabling nodes and disabling the system

Starting point: The Main Menu

1 Select System Status and Maintenance.

The System Status and Maintenance menu appears (Figure 12-1).

2 Select System Status.

The System Status screen is displayed (Figure 12-3).

3 Choose step 3a to enable a node, 3b to disable a node, 3c to courtesy disable ports on a node, 3d to courtesy down the entire system, or 3e to return to the System Status and Maintenance menu.

a. Press [Enable Node].

You are prompted for the node number .

Enter the required number followed by <Return>.

b. Before you disable a node, you must courtesy down the system (see step 3d). Then press the [Disable Node] softkey. Once the node is disabled, you can reactivate the system while the node is disabled if you want to allow Meridian Mail to remain operational for users on the other nodes while you are working on the disabled node.

After you press [Disable Node], you are prompted for the node number.

Note: You cannot disable an MSP node.

Enter the node number followed by <Return>.

c. Press [Courtesy Disable Ports].

You are prompted for the number of an in-service node.

Enter the node number followed by <Return>.

d. Press [Courtesy Down System].

*You are prompted as to whether or not you want to Courtesy Down the system. Enter **yes** and press return to continue.*

The [Activate System] softkey replaces the [Courtesy Down System] softkey.

It may take some time to disable the system since all active DSP ports on all nodes must first become idle.

If the system does not become idle during a courtesy down (i.e., some DSP ports remain active), disable the DSP port manually using Procedure 12-4 described in the "DSP Port Status" section.

The system can be reenabled at any time during the process by using [Activate System].

If a DSP port does not reenable, enable it manually using Procedure 12-4 described in the "DSP Port Status" section.

e. Press [Exit] to return to the System Status and Maintenance menu.

Card Status

The Card Status screen (Figure 12-4) displays the operational status of the cards in your system. The softkeys displayed on this screen are used to enable and disable voice processor cards only. You can run diagnostics on voice processor, MMP40 cards on MSP nodes, RSM (for non-EC systems) cards on non-MSP nodes. (To disable other types of cards, press [Disable Node] on the System Status screen.)

Figure 12-4 shows a Card Status screen for an MMP40 system. For more information about the upgrade configurations, refer to "Hardware configurations available" on page 11-1.

Figure 12-4
The Card Status screen

```
                         System Status and Maintenance

Card Status for Node 1

System Status: InService  Alarm Status: Critical = Off  Major = On  Minor = Off

Card#        Location      Description                        Status

  1          1-1-*         Empty                              Unequipped
  2          1-2-*         Empty                              Unequipped
  3          1-3-*         16 Megabyte Meridian Mail Processor InService
  4          1-4-*         Empty                              Unequipped
  5          1-5-*         High Speed Bus                     Unequipped
  6          1-6-*         Empty                              Unequipped
  7          1-7-*         Empty                              Unequipped
  8          1-8-*         RS232 Service Module               InService

 *Select a softkey >
                                                             OutOfService
    Exit        Enable Card     Disable Card                  Diagnostics
```

```
*  The prompt "Enter the number of the card you want to enable" appears when
   [Enable Card] is used.
*  The prompt "Enter the number of the card you want to disable" appears when
   [Disable Card] is used.
*  The prompt "Enter the number of the OutofService Card for diagnostics"
   appears when [OutOfService Diagnostics] is used.
```

See the section "System Status" for a description of the *System Status* and *Alarm Status* fields. The following fields are also displayed on this screen:

- ***Card #*** This is the number of each card in the selected node.
- ***Location*** This is the physical location (Card, DSP, Port) of each card in the selected node.
- ***Description*** This is the type of card at that location.

- ***Status*** This is the current state of each card on the selected node.
  - ***InService*** This state indicates that the card is operational.
  - ***Faulty*** This state indicates that a hardware problem has been detected for the card.
  - ***Unequipped*** This state may indicate one of two conditions: (a) the card slot is empty but a card is defined as being in that location in the hardware database or (b) the card is in the slot but is not defined in the hardware database.
  - ***OutOfService*** This state indicates that the card has been disabled.

Procedure 12-3
Enabling and disabling cards

Starting point: The Main Menu

1 Select System Status and Maintenance.

The System Status and Maintenance menu appears (Figure 12-1).

2 Select Card Status.

If you have a multinode system you are prompted for the node number .

If you have a multinode system, enter the card number followed by <Return>.

The Card Status screen is displayed (Figure). Go to step 4.

3 For multinode systems, enter the number of the node on which the card resides.

The Card Status screen is displayed.

4 Choose step 4a to enable a card, 4b to disable a card, 4c to activate diagnostics on an out-of-service card, or 4d to return to the System Status and Maintenance menu.

a. Press [OutOfService Diagnostics] before enabling a faulty card or a card with faulty DSP ports. For more information, see step 4c.

Next, press [Enable Card].

Note 1: Only voice processor cards can be enabled from this screen. To enable other cards use [Enable Node] in the System Status screen. See the previous section, "System Status".

You are prompted for the number of an out-of-service card.

Enter the card number followed by <Return>.

The system may take some time in enabling the card. The message "WORKING ..." will be displayed during this interval.

b. Press [Disable Card].

Note: Only voice processor cards can be disabled from this screen. To disable other cards use [Disable Node] in the System Status screen.

You are prompted for the number of the card you want to disable.

Enter the card number followed by <Return>.

The system may take some time in disabling the card. The message "WORKING ..." will be displayed during this interval.

c. Press [OutOfService Diagnostics].

You are prompted for the number of an out-of-service card.

Enter the card number followed by <Return>.

The system may take some time in running diagnostics. The message "WORKING ..." will be displayed during this interval.

Note 1: If the OutOfService Diagnostics fails the card will become faulty.

Note 2: If OutOfService Diagnostics passes on a card that was already in the Faulty state, the card is put into the OufOfService state.

d. Press [Exit] to return to the System Status and Maintenance menu.

DSP Port Status

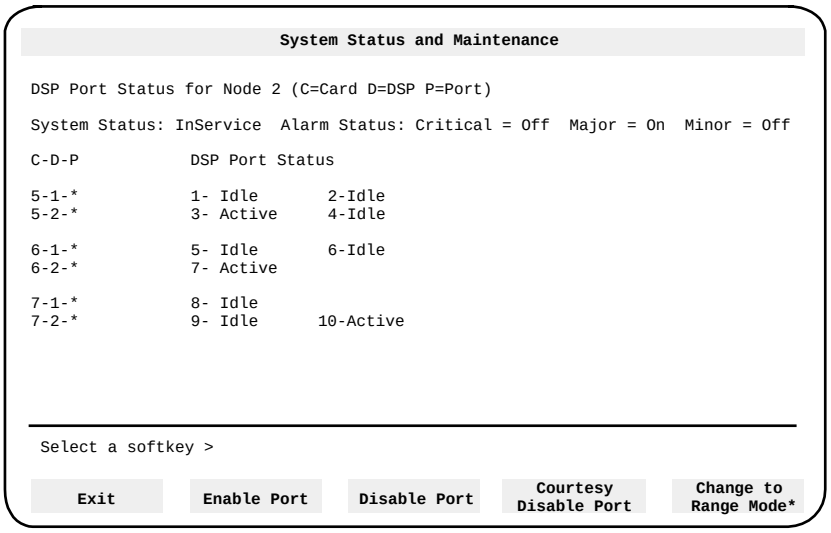
The DSP Port Status screen (Figure 12-5) allows you to view the operational status of the DSP ports in the system, manipulate their status, and courtesy disable individual ports when necessary.

A DSP is a Digital Signal Processor. Each DSP supports 2 physical port locations. As a result, each DSP can support two voice processing ports or one multimedia port (for multimedia services, both physical ports of a DSP are used to configure one multimedia port). The configured port (voice or multimedia) is referred to as a DSP port or just as a port.

Note that when the status for a port is not displayed (for example, card 6 and 7 in Figure 12-5), this means that both ports from the DSP were used to configure one multimedia port, so only one configured port is present instead of two. In Figure 12-5, two ports on card 6 have been configured into 1 multimedia port (port 7), and two ports on card 7 have been configured into another multimedia port (port 8).

The port numbering on this screen is also adjusted so that no number is skipped, even if a port is blocked for a multimedia port. As a result, the port numbers reflect the total number of configured ports on the node. The port numbers shown here match the port numbers shown in the DSP Port Status screen accessed from the Logon/Status screen.

Figure 12-5
The DSP Port Status screen



* This softkey is a toggle. When in Range Mode, the softkey is [Change to Single Mode].

The following fields are displayed on the DSP Port Status screen:

- ***System Status*** See the description in the section "System Status."
- ***Alarm Status*** See the description in the section "System Status."
- ***C-D-P (location)*** This is the physical location of each DSP port on the selected node (card number - DSP - port).
- ***DSP Port Status*** This is the current state of each DSP port. The status can be one of the following:
  - ***Active*** This status indicates that the DSP port is operational and in use.
  - ***Idle*** This status indicates that the DSP port is operational but not currently in use.

- ***Faulty*** This status indicates that the system has detected an error in the DSP port.
- ***UnEquipped*** This status indicates that the DSP port is not defined in the hardware database. For more information about modifying the hardware database, see *System Administration Tools* (NTP 555-7001-305).
- ***POutOfService*** This status indicates that the DSP port is in the process of shutting down. If [Courtesy Disable Port] was used, the DSP port is still active while in this state. Once the active call is disconnected, the port status will be OutOfService.
- ***OutOfService*** This status indicates that the DSP port is no longer operational as a result of a courtesy disable or forced disable.
- ***No Resource*** This status indicates a transition state that occurs during the initial stages of software loading (after a request to enable a port). When software begins to load, the port is initially in this state, followed by Loading and then Idle, once the software has finished loading.
- ***Loading*** This status indicates that the DSP port is currently starting up after a request to enable and that the necessary software is loading.
- ***CtsyDown*** This status indicates that the DSP port is down as a result of a Courtesy Down System.
- ***PCtsyDown*** This status indicates that the DSP port is in the process of shutting down as a result of a Courtesy Down System, pending the disconnection of any active calls. The DSP port is still active while in this state. Once the active call is disconnected, the port status will be OutOfService.

If you need to enable, disable, or courtesy disable a number of DSP ports, use the [Change to Range Mode] softkey first. This only works with a contiguous range of ports. For example, it will work if you need to disable ports 3 to 7, but not if you need to disable ports 1, 3 and 7. When you toggle to range mode, this softkey changes to [Change to Single Mode].

If you are in single mode, follow Procedure 12-4. If you are in range mode, follow Procedure 12-5.

> ***Note:*** If a port is faulty and you attempt to disable it, the screen message will be the same as if you are disabling an idle port. However, the port will not be disabled. A faulty port cannot be disabled.

Procedure 12-4
Enabling and disabling DSP ports in single mode

Starting point: The Main Menu

1 Select System Status and Maintenance.

The System Status and Maintenance menu appears (Figure 12-1).

2 Select DSP Port Status.

If you have a single node system, the DSP Port Status screen is displayed. Go to step 4.

If you have a multinode system you are prompted for the node number .

3 For multinode systems, enter the number of the node on which the DSP port resides.

The DSP Port Status screen is displayed.

4 Choose step 4a to enable a DSP port, 4b to disable a DSP port, 4c to courtesy disable a DSP port, or 4d to exit the DSP Port Status screen.

a. Press [Enable Port].

You are prompted for the number of a DSP port.

Enter the DSP port number followed by <Return>.

The system may take some time to enable the DSP port. The system displays a message to inform you that the DSP port is being enabled. The message "WORKING ..." may also be displayed during this interval.

While the port is being enabled, its status will change to Loading and then to Idle.

b. Press [Disable Port].

You are prompted for the number of a DSP port.

Enter the DSP port number followed by <Return>.

The system may take some time to disable the DSP port. The system displays a message to inform you that the DSP port is being disabled. The message "WORKING ..." may also be displayed during this interval.

While the port is being disabled, its status will change to POutOfService and then to OutOfService.

c. Press [Courtesy Disable Port].

You are prompted for the number of a DSP port.

Enter the DSP port number followed by <Return>.

The system may take some time to disable the DSP port since it waits for the port to become idle before disabling it. The message "WORKING ..." may be displayed during this interval.

While the port is being disabled, its status will change to POutOfService and then to OutOfService.

d. Press [Exit] to return to the System Status and Maintenance menu.

Procedure 12-5
Enabling and disabling DSP ports in range mode

Starting point: The Main Menu

1 Select System Status and Maintenance.

The System Status and Maintenance menu appears (Figure 12-1).

2 Select DSP Port Status.

If you have a single node system, the DSP Port Status screen is displayed. Go to step 4.

If you have a multinode system you are prompted for the node number .

3 For multinode systems, enter the number of the node on which the DSP port resides.

The DSP Port Status screen is displayed.

4 Choose step 4a to enable a range of DSP ports, 4b to disable a range of DSP ports, 4c to courtesy disable a range of DSP ports, or 4d to exit the DSP Port Status screen.

a. Press [Enable Port].

You are prompted for the number of the first DSP port in the range of ports you want to enable.

Enter the number of the first DSP port in the range followed by <Return>.

You are prompted for the number of the last DSP port in the range.

Enter the number of the last DSP port in the range followed by <Return>.

The system may take some time to enable the DSP ports. The system displays a message to inform you that the DSP ports are being enabled. While the ports are being enabled, their status will change to Loading and then to Idle. The message "WORKING ..." may also be displayed during this interval.

The system displays a message to inform you of the number of ports successfully enabled, and the number of ports that could not be enabled.

b. Press [Disable Port].

You are prompted for the number of the first DSP port in the range of ports you want to disable.

Enter the number of the first DSP port in the range followed by <Return>.

You are prompted for the number of the last DSP port in the range.

Enter the number of the last DSP port in the range followed by <Return>.

The system may take some time to disable the DSP ports. The system displays a message to inform you that the DSP ports are being disabled. While the ports are being disabled, their status will change to POutOfService and then to OutOfService. The message "WORKING ..." may also be displayed during this interval.

The system displays a message to inform you of the number of ports successfully disabled, and the number of ports that could not be disabled.

c. Press [Courtesy Disable Port].

You are prompted for the number of the first DSP port in the range of ports you want to courtesy disable.

Enter the number of the first DSP port in the range followed by <Return>.

You are prompted for the number of the last DSP port in the range.

Enter the number of the last DSP port in the range followed by <Return>.

The system may take some time to disable the DSP ports since it waits for the ports to become idle before disabling them. While the ports are being disabled, their status will change to POutOfService and then to OutOfService. The message "WORKING ..." may also be displayed during this interval.

The system displays a message to inform you of the number of ports successfully courtesy disabled, and the number of ports that could not be courtesy disabled.

d. Press [Exit] to return to the System Status and Maintenance menu.

The Channel Allocation Table

The Channel Allocation Table (CAT) (Figure 12-6) should only be configured by those who are knowledgeable about programming the switch. Normally, you will not have to configure this table. When the Meridian Mail software is installed, the install technician configures the switch to match the Channel Allocation Table. This is also true when you perform a channel expansion (to add new agents). You generally do not have to modify the CAT because it is updated with the information that was provided during the expansion. However, when you move agents from one queue to another (in order to dedicate them to a particular service), you will have to modify the CAT to reflect the Primary DN with which the agent is now associated as well as the service to which it is dedicated.

The Channel Allocation Table determines how agents on the switch are associated with DSP ports on Meridian Mail. Agents are identified by a Message Desk Terminal Number and a UCD DN. Each DSP port must be associated with an existing UCD agent in the switch to handle the queuing of calls coming in to Meridian Mail and to handle dial-out features such as remote notification and delivery to non-users.

The Channel Allocation Table (Figure 12-6) also lists the maximum number of voice ports and minimum number of multimedia ports that you can configure, and how the different port types are currently allocated. The [Display Choice of Services] softkey also allows you to view the services (features) installed on your system (Figure 12-7).

Ports that are configured to support multimedia services (multimedia ports) require the use of both DSP ports supported by a DSP. The location of the first port supported by the DSP is considered the location of the multimedia port. The second physical port location supported by the DSP is considered to be blocked for the multimedia port. This is reflected in the CAT by a row following the multimedia port with the message "blocked for Multimedia

port C-D-P" where C-D-P is the "Card-DSP-Port" number of the multimedia port.

A port (or channel) may be shared by all services or dedicated to a specific service. Dedicating ports may reduce the overall efficiency of the system since dedicated ports can’t be used by any other service, even when the dedicated port is not in use. Also, when a port is dedicated to an outbound service, that service is restricted to those ports (that is, the service cannot use a port configured for "ALL" services). Therefore, most of your ports should be shared by all services.

However, depending on the level of traffic you expect certain features to generate, or perhaps because you need to ensure that a port is always free for a particular service, you may want to dedicate some ports. See the section "Configuring UCD queues and DNs" in the "Voice administration" chapter for instructions and tips on dedicating channels.

Also, the capability and type of port determines what features can be dedicated to that port. Basic service ports support Meridian ACCESS, Voice Menus, and Voice Softkey. Full service ports support all voice services. Full service multimedia ports support all services including fax services.

> ***Note:*** To dedicate lines to a particular service in a configuration involving a third-party PBX (NEC, AT&T or ROLM), you need a VoiceBridge unit.

The number of DSP ports on a system may be very large. Therefore, when you choose to view the CAT in a multinode system, you are prompted for a node number to limit the scope to one node at a time. The CAT screen then displays information for that node.

Figure 12-6
The Channel Allocation Table

```
                          System Status and Maintenance

Channel Allocation Table for Node 2 (C=Card D=DSP P=Port)

Limit; MaxVoice MinMulti; MaxFull;      - - - - - Allocated - - - - -
  12       8       2         8         M/F: 2    V/F: 6    V/B: 2

#  C-D-P  Rout. Addr   PrimaryDN ChannelDN Type   Capability   Outbound

1  5-1-1  10-1         5300      12345671  Voice  Full Basic   ACC Class:
2  5-1-2  10-2         5300      12345672  Voice  Full Basic   ACC Class:
3  5-2-1  10-3         5200      12345673  Multi  Full Basic   FOC
          blocked for Multimedia port 5-2-1.
4  6-1-1  10-4         5200      12345674  Multi  Full Basic   FOC
          blocked for Multimedia port 6-1-1.
5  6-2-1  10-5         5100      12345675  Voice  Full Basic   ALL
6  6-2-2  10-6         5100      12345676  Voice  Full Basic   ALL
7  7-1-1  10-7         5100      12345677  Voice  Full Basic   ALL
8  7-1-2  10-8         5100      12345678  Voice  Full Basic   ALL
9  7-2-1  10-9         50001111  12345679  Voice  Full Basic   OC
10 7-2-2  10-10        50001111  12345670  Voice  Full Basic   OC


Select a softkey >

 Save      Cancel                                  Display Choice
                                                    of Services
```

* Use the [Display Choice of Services] softkey to view the installed services and their acronyms.

Figure 12-7
The Channel Allocation Table (with Choice of Services displayed)

```
                         System Status and Maintenance

Channel Allocation Table for Node 2 (C=Card D=DSP P=Port)

*Choice of Services:
ALL All Services            AN   AMIS Networking        AS   Announcement Service
EM  Express Messaging       FOC  Fax Outcalling         GS   Greetings Service
ACC Meridian ACCESS         NW   Meridian Networking    OC   RN/DNU Outcalling
PM  Prompt Maintenance      RA   Remote Activation      TS   Thru-Dial Service
TR  Transcription Service   VF   Voice Forms Service    MS   Voice Menu Service
VM  Voice Messaging         VS   Voice Softkey

Limit; MaxVoice MinMulti; MaxFull;      - - - - - Allocated - - - - -
  12       8       2         8          M/F: 2    V/F: 6    V/B: 2

#  C-D-P  Rout. Addr   PrimaryDN ChannelDN    Type   Capability   Outbound

1  5-1-1  10-1         5300      12345671     Voice  Full Basic   ACC Class:
2  5-1-2  10-2         5300      12345672     Voice  Full Basic   ACC Class:
3  5-2-1  10-3         5200      12345673     Multi  Full Basic   FOC
          blocked for Multimedia port 5-2-1.
4  6-1-1  10-4         5200      12345674     Multi  Full Basic   FOC
          blocked for Multimedia port 6-1-1.
                                                                  MORE BELOW
 Select a softkey >

   Save          Cancel                                     Hide Choice of
                                                               Services
```

* The list of services displayed in this figure show all possible services for illustration purposes. Only those features that are installed on your system will be displayed on your terminal.

Note: To change the *Primary DN*, *Channel DN*, *Capability*, or *Outbound* service, you must first disable the port from the DSP Port Status screen which is accessed from the System Status and Maintenance menu. Rows that are displayed in bold type on the CAT represent disabled ports. The underlined fields and the *Capability* field for the disabled ports can be modified. The routing address can only be modified from the Tools menu ("Modify hardware") described in *System Administration Tools* (NTP 555-7001-305). To change the port type, you must use the port reconfiguration tool which is described in the *System Installation and Modification* guide (NTP 555-7001-215).

The following fields are displayed in the Channel Allocation Table:

- ***Choice of Services*** This is a list of voice or fax services and their associated acronyms.

  The following services are available only if voice menus are installed:

  - AS (Announcement Service)
  - PM (Prompt Maintenance)

- RA (Remote Activation)
- TS (Thru-Dial Service)
- MS (Voice Menu Service)

Greeting Change Service (GS) is only available if Voice Messaging (VMUIF) is installed. Express Messaging (EM) is available only if Voice Messaging (MMUI) or Hospitality are installed.

Transcription Service (TR) and Voice Forms Service (VF) are available only if the Voice Forms feature is installed.

Meridian Networking (NW), Meridian ACCESS (ACC), AMIS Networking (AN), RN/DNU Outcalling (OC), and Fax Outcalling (FOC) appear only if the feature is installed.

- ***Limit*** This is the number of physical port locations on the system from which voice and multimedia ports are derived.
- ***MaxVoice*** This is the maximum number of voice ports (basic and full) allowed on the system according to your system's keycode. This number plus the *MinMulti* number is the maximum number of ports allowed on the system.
- ***MinMulti*** This is the minimum number of multimedia ports required on the system according to your system's keycode. The system will not allow you to reduce the number of multimedia ports on the system to below the *MinMulti* value.
- ***MaxFull*** This is the maximum number of full-service ports (full-service voice or multimedia) allowed on the system according to your system's keycode.
- ***Allocated*** This field shows how the ports are currently allocated between full service multimedia, full service voice, and basic service voice.
  - **M/F** The number of full service multimedia ports on the system.
  - **V/F** The number of full service voice ports on the system.
  - **V/B** The number of basic service voice ports on the system. Basic service ports must also be voice ports.

  Note: Multimedia ports require full service capability, so basic service multimedia ports are not available.

- ***C-D-P*** This is the physical location of the DSP port in the Meridian Mail system. This number represents the card-DSP-port number. The node number is shown in the title at the top of the screen for multi-node systems. This is a read-only field.

  The number to the left of the *C-D-P* field counts the ports in configured (for example, not blocked for a multimedia port), and corresponds to the port numbers shown in the DSP Port status screen.

- ***Rout. Addr*** (Routing address). This is a read-only field specifying the location of the corresponding agent in the switch.

  This is the Message Desk Number. This number has two elements representing the message desk number and terminal number and is expressed in the format `xx-yyyy`.

  This field can be modified using the Modify hardware tool, described in *System Administration Tools* (NTP 555-7001-305).

- ***Primary DN*** This is the directory number assigned to the UCD queue that contains this agent. This is typically the 7-digit DN of the primary voice messaging queue. However, if you are dedicating this agent to a particular service, enter the DN of the service UCD queue.

  For AT&T or ROLM configurations, enter the DN of the VoiceBridge. For NEC configurations, enter the pilot number of the UCD group.

  Note: The DSP port must be disabled (use the DSP Port Status screen) before changing the Primary DN. If the port is not disabled, this is a read-only field.

- ***Channel DN*** This is the DN of the corresponding UCD agent. This DN is usually 7 digits, although this field will hold up to 8 digits.

  For configurations involving other PBXs (NEC, AT&T or ROLM), enter the DN of the analog line.

  Note 1: The DSP port must be disabled before changing the *Channel DN*. If it is not disabled, this is a read-only field.

  Note 2: The maximum length of the *Channel DN* is 8 digits, even if the SMDI link is set to 10-digit messaging.

- ***Type*** This field could show "Voice" or "Multi". "Voice" indicates a port that can provide voice services (such as, voice menus, announcements, RN/DNU outcalling, and so on). "Multi" indicates a port that can provide multimedia related services (such as, fax outcalling). A "Multi" port is configured from two port locations. As a result, the next port location is labelled as "blocked", as shown in the screen example (Figure 12-7).

- ***Capability*** This field indicates the range of services supported on this port. The two ranges are "Basic" and "Full". The services provided by each are listed as follows. Note that all basic services can also run on full service ports.

Basic	**Full**
ACC - ACCESS Enable Option	VM - Voice Messaging
AS - Announcement Service	EM - Express Messaging
MS - Voice Menu Service	AN - AMIS Networking Agent
PM - Prompt Maintenance	OC - RN/DNU Outcalling
RA - Remote Activation	GS - Greeting Services
TS - Thru-Dial Service	VF - Voice Forms Service
VS - Voice Softkey	TR - Transcription Service
	NW - Meridian Networking
	FOC - Fax Outcalling
	Plus all Basic services

  Note: RN/DNU Outcalling supports Remote Notification and Delivery to Non-User features. Fax Outcalling supports Fax-on-Demand same-call delivery and fax call-back delivery, Fax Information (FI), and Fax Item Maintenance (FIM).

- ***Outbound*** This is the service to which the DSP port and agent are dedicated. The column is titled *Outbound* because it is relevant mainly for services that make outbound calls (such as, RN/DNU Outcalling). The entry in this field should be "ALL", which indicates a shared DSP port, unless you are dedicating that port to one of the following services:

  - RN/DNU Outcalling (OC)
  - Fax Outcalling (FOC)
  - Meridian Networking (NW)
  - Meridian ACCESS (ACC)

- Voice Softkey (VS)

It is unlikely that you would find a need to dedicate a port for the Voice Softkey. However, if you did, you would need to enter VS in the *Outbound* column for that port.

Note also that it is not necessary to dedicate a port for these services in order for them to function properly. For example, a multimedia port can have the entry "ALL" in the *Outbound* column and it will still be able to process fax calls.

However, if you have decided to dedicate a port to Fax Outcalling, then you must enter FOC in the *Outbound* column and also follow the procedures for dedicating a port as described in the section "Configuring UCD queues and DNs" in the "Voice administration" chapter. The "Determining system size" chapter in the *Site and Installation Planning* guide (NTP 555-70x1-200) discusses how you can achieve optimum traffic capacity for fax calls on a multimedia port by dedicating the port to Fax Outcalling and then using only the Fax Call Back method of delivery.

If you enter ACC (Meridian ACCESS) in the *Outbound* column, a second field, *Class*, is displayed. For information and examples on how to configure ACCESS applications (for example, Meridian IVR), refer to the "Configuration examples" chapter in the *Meridian ACCESS Configuration Guide* (NTP 555-7001-315).

Note 1: To dedicate a port, you must first create a UCD queue and move one or more agents to the new queue. The agent(s) in this queue can then be dedicated to a particular service. For more information about creating UCD queues, moving agents, and dedicating agents, refer to "Configuring Meridian Mail services" on page 10-37.

Note 2: You must disable the DSP port before changing the service associated with it.

Procedure 12-6
Modifying the Channel Allocation Table

Starting point: The Main Menu

Note: *Update the Channel Allocation T able only when the system is idle or during low traffic periods.*

1 Select System Status and Maintenance from the Main Menu.

2 Select DSP Port Status.

If you have a single-node system, go to step 4.

If you have a multi-node system you are prompted to enter a node number.

3 Enter the number of the node on which the port resides.

4 Press the [Disable Port] softkey.

You are prompted for the in-service port number .

5 Enter the number(s) of the port(s) you want to disable and press <Return>.

6 Press [Exit] to return to the System Status and Maintenance menu.

7 Select Channel Allocation Table.

If you have a single-node system, the Channel Allocation T able is displayed. Go to step 9.

If you have a multi-node system you are prompted for a node number .

8 Enter the number of the node on which the port resides.

9 For each disabled port, you may modify the *Primary DN*, *Channel DN*, *Capability*, and the Service (*Outbound* column).

10 Choose step 10a to save the changes or 10b to cancel.

a. Press [Save].

The changes are saved.

On a single-node system you are returned to the System Status and Maintenance menu.

On a multi-node system you are prompted for another node number. Go to step 8 if you need to reallocate ports on other nodes. If you are done with the CA T, use the [Cancel] softkey to return to the System Status and Maintenance menu.

b. Press [Cancel] to cancel any changes made to the node.

On a single-node system you are returned to the System Status and Maintenance menu.

On a multi-node system you are prompted for another node. Go to step 8 if you have to reallocate ports on another node. Otherwise, press [Cancel] again to cancel the prompt for another node and return to the System Status and Maintenance menu.

11 Go to the DSP Port Status screen and enable any ports that you put out of service.

Disk Maintenance

The Disk Maintenance option is only available if Disk Shadowing is installed on the system. Disk shadowing is an optional feature.

If you have the Disk Shadowing feature, disks are added to Meridian Mail in pairs. When new data is written to disk, both drives in a pair are updated at the same time with the same information. If one of the drives in a pair fails, it can be removed from service and replaced without loss of data or interruption of service.

When a disk fails due to any sort of SCSI error, the system takes it out of service (puts it in "No Access" state) and generates a SEER. The shadowed disk continues to function and there is no service interruption. However, the failed disk should be replaced as soon as possible. You may also have to replace (or repair) a disk that has reported a large number of recovered errors. In the second case, you will have to take the disk out of service manually before replacing it. After a disk has been replaced or repaired, you will have to perform a disk synchronization in order to bring the paired disks in line with each other.

Procedure 12-7
Replacing a failed disk

1 Disable the drive (if not already in No Access state).

This disables the drive and puts it in No Access so that it can be replaced or repaired. See Procedure 12-8.

2 Replace the failed drive.

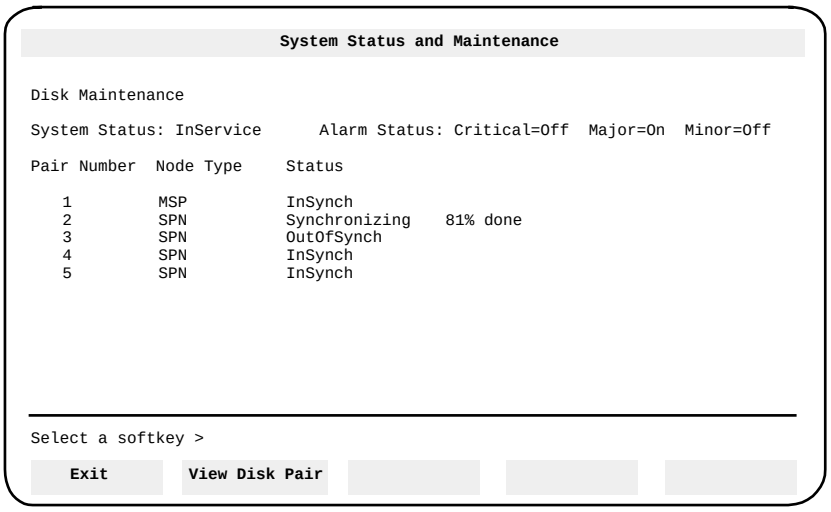
See the chapter titled "Installing the disk, power supply , tape, and printed circuit packs" in the Installation and Maintenance Guide (NTP 555-70x1-250).

3 Resynchronize the disks. See Procedure 12-9.

The Disk Maintenance screen

The Disk Maintenance screen (Figure 12-8) shows the status of each disk pair in the system. The three possible states for a disk pair are "InSynch", "Synchronizing," and "OutOfSynch". If a SEER has alerted you to the fact that the system has taken a disk out of service, check the Disk Maintenance screen to determine which pair is out of synch.

Figure 12-8
The Disk Maintenance screen



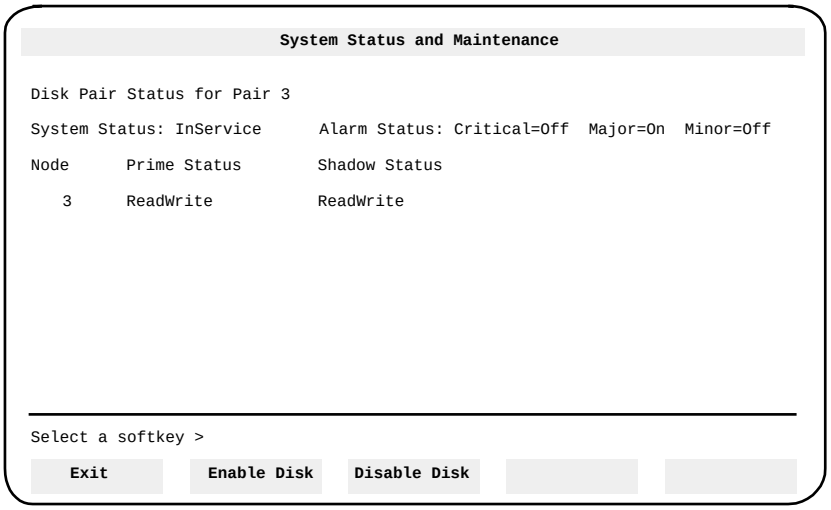
The following fields are displayed on this screen:

- ***System Status*** This field displays the current system status. See the section "System Status" beginning on page 12-4 for a description of possible system states.
- ***Alarm Status*** This field indicates whether or not there are any Critical, Major or Minor alarms. See the section "System Status" beginning on page 12-4 for a description of possible alarm states.
- ***Pair Number*** The number of each disk pair in the system.
- ***Node Type*** The type of node on which the pair resides.

- ***Status*** This is the synchronization status. A disk pair can be in one of the following states:
  - ***InSynch*** This state indicates that both disks are operational and in synch with each other.
  - ***Synchronizing*** This state indicates that the disks are currently synching (i.e., after pressing [Enable] in the Disk Pair Status screen). The system also indicates the percentage of synching done so far.
  - ***OutOfSynch*** This state indicates that one of the disks is NoAccess and consequently out of synch with its shadowed pair. This happens if the system puts a bad disk in No Access state, or if you disable the disk in order to replace or repair it.

When you press the [View Disk Pair] softkey, the Disk Pair Status screen (Figure 12-9) is displayed.

Figure 12-9
The Disk Pair Status screen



The following fields are displayed on this screen:

- ***System Status*** This is the current system status. See the section "System Status" beginning on page 12-4 for a description of possible system states.

- ***Alarm Status*** This field indicates whether there are any critical, major or minor alarms. See the section "System Status" beginning on page 12-4 for a description of possible alarm states.
- ***Node*** This is the node on which the disk resides.
- ***Prime Status*** This field indicates the status of the primary disk. A disk may be in one of the following states:
  - ***ReadWrite*** This state indicates that the disk is currently being read and written to. A disk that is in this state is operating normally.
  - ***NoAccess*** This state indicates that the disk is not being read or written to. This indicates that the disk has been disabled by the system or by the administrator (with the [Disable] softkey).
  - ***SynchSource*** This state indicates that the disk is the source of a disk synchronization during a disk synch.
  - ***SynchDest*** This state indicates that the disk is the destination of a disk synchronization during a disk synch.
- ***Shadow Status*** This field indicates the status of the shadowed disk. A disk may be in one of the following states:
  - ***ReadWrite*** This state indicates that the disk is currently being read and written to.
  - ***NoAccess*** This state indicates that the disk is not being read or written to. This indicates that the disk has been disabled by the system or by the administrator (with the [Disable] softkey).
  - ***SynchSource*** This state indicates that the disk is the source of a disk synchronization during a disk synch.
  - ***SynchDest*** This state indicates that the disk is the destination of a disk synchronization during a disk synch.

If one of your disks is faulty and you need to replace it or service it, disable disk shadowing for that disk first (Procedure 12-8). If you have replaced a failed disk, follow Procedure 12-9 to resynchronize the replacement drive.

Procedure 12-8
Disabling disk shadowing

Starting point: The Main Menu

1 Select System Status and Maintenance.

2 Select Disk Maintenance.

3 Press the [View Disk Pair] softkey.

You are prompted for a pair number .

4 Enter the number of the pair you want to disable. The Disk Pair Status screen appears (Figure 12-9). The [Exit] softkey on this screen returns you to the Disk Maintenance screen.

5 Press the [Disable] softkey.

You are prompted whether or not you want to disable primary disk synchronization.

6 Enter **yes** to disable synchronization of the primary disk or **no** to disable synchronization of the shadowed disk.

For example, if the primary disk is faulty and you need to replace it, enter **yes**. If it is the shadowed disk that is faulty, enter **no**.

The system disables disk shadowing between the pair .

Procedure 12-9
Synching a disk

Starting point: The Main Menu

1 Select System Status and Maintenance.

2 Select Disk Maintenance.

3 Press the [View Disk Pair] softkey.

You are prompted for a pair number .

4 Enter the number of the pair you want to synch. The Disk Pair Status screen appears (Figure 12-9). The [Exit] softkey on this screen returns you to the Disk Maintenance screen.

5 Press the [Enable] softkey.

The disk synchronization is started. The synchronization will take at least 10 minutes, depending on the amount of data you have stored on these disks.

The system determines the source of the synch by choosing the disk that is in ReadWrite mode. The status of this disk will change to SynchSource during the synchronization. The status of the destination disk will change to SynchDest during the synchronization. When the synchronization is completed, the status for both disks changes to ReadWrite.

System event and error reports (SEERs)

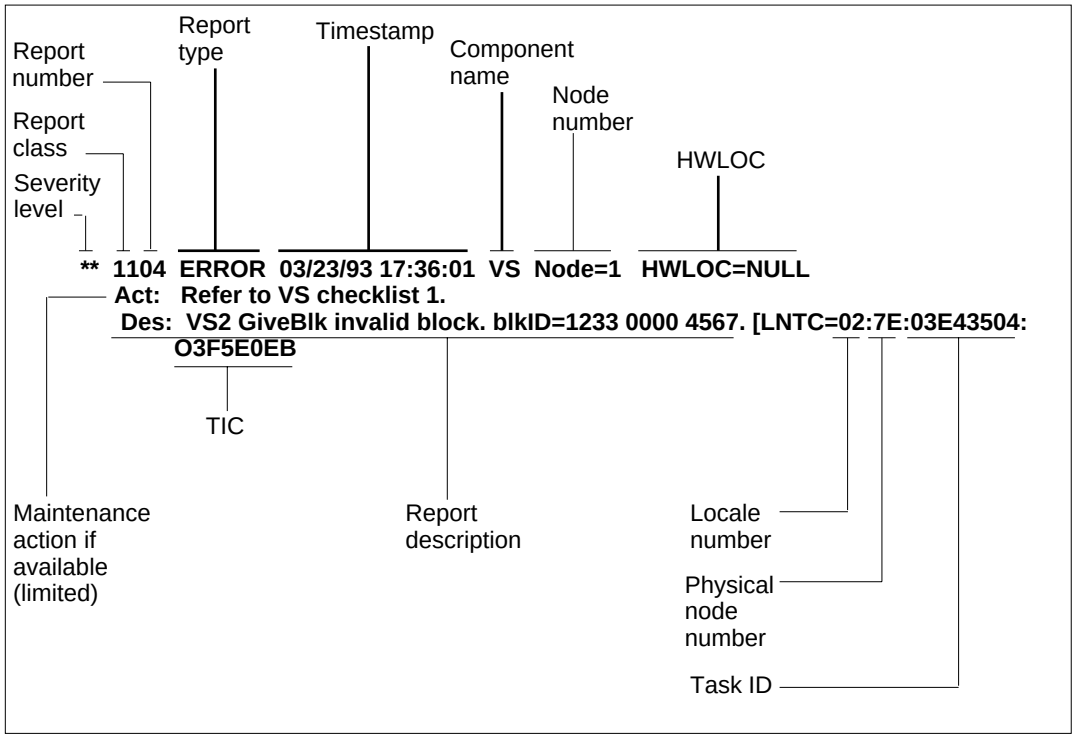
System event and error reports (SEERs) collect statistics on every system event and error reported by Meridian Mail system software components. The reports provide information about the SEER class, SEER number, the date and time that the SEER was generated, and a description of the event or error that occurred at that time.

Figure 12-10 shows a typical SEER that would be printed with a maintenance action category. For more details on SEERs and for a list of SEERs, refer to *Maintenance Messages (SEERs)* (NTP 555-7001-510).

SEERs are mostly used by maintenance personnel for isolating system faults and repairing hardware and software problems. However, you should be able to read, interpret, and assess the severity of events and errors to determine if they are regular events (such as a system audit), errors which you can correct, or if it is necessary to alert support personnel. Once you become familiar with SEERs it may also be possible to identify potential problems in their early stages before they become critical errors.

In order to help you judge how serious a system problem might be, SEERs have been classified according to various severity levels. These classifications are based on the impact of the operation that has failed. This reduces the risk of neglecting real problems that have been buried amongst a lot of minor problems or regular system events. When retrieving SEER information, you can therefore filter out all but the most severe problems in order to deal with them quickly.

Figure 12-10
Parts of a SEER



The SEER severity level is indicated to the left of the SEER as follows: *** = Critical, ** = Major, * = Minor, and Inf = Info. These severity levels are described as follows:

- ***Critical (***)*** This level indicates any service-affecting problem. A critical problem requires immediate attention, usually from a qualified technician. Examples of critical errors are system reboots, a major base feature not operating, hardware failure (where the system failed to recover from the failure), system capacity reduced below a threshold, software configuration problems, a full volume, or a disk drive error.

- ***Major (**)*** This level indicates any service-threatening problem. Such problems do not require immediate attention, but will require attention from an administrator or technician to prevent it from becoming a critical problem. A major problem may be allowed to persist up to 24 hours. Examples of major errors are hardware failures from which the system has successfully recovered, unrecovered hardware problems in noncritical components such as tape drives or voice cards, malfunctions of a minor feature such as the recording of spoken names or administrative functions, a nearly full volume, a disk drive error (when disks are shadowed), or excessive minor problems.
- ***Minor (*)*** This level indicates a problem that has no impact on the system or users of the system. No immediate attention is required. The fault can be allowed to exist for some time. However, an excessive accumulation of minor problems can in itself become a major problem.
- ***Info (Inf)*** This level indicates a normal system event. Knowledge of these events is useful because they indicate occurrences such as invalid administrator logon attempts, system time changes, disabled user mailboxes (due to password expiration/violation), successful backups, and the forwarding of nonusers to voice messaging.

Each SEER is also classified according to one of the following types which indicates the level of expertise required to solve the problem, or whether the SEER is simply indicating a normal system event.

- ***Error*** This type indicates an error which requires the attention of a trained technician.
- ***Admin*** This type indicates an error which can probably be solved by an administrator. If you cannot solve the problem, call a trained technician.
- ***System*** This type indicates a normal event that should be noted. For example, a successful audit or an operational measurement collection. This type of SEER does not sound an alarm.

Generating SEER reports

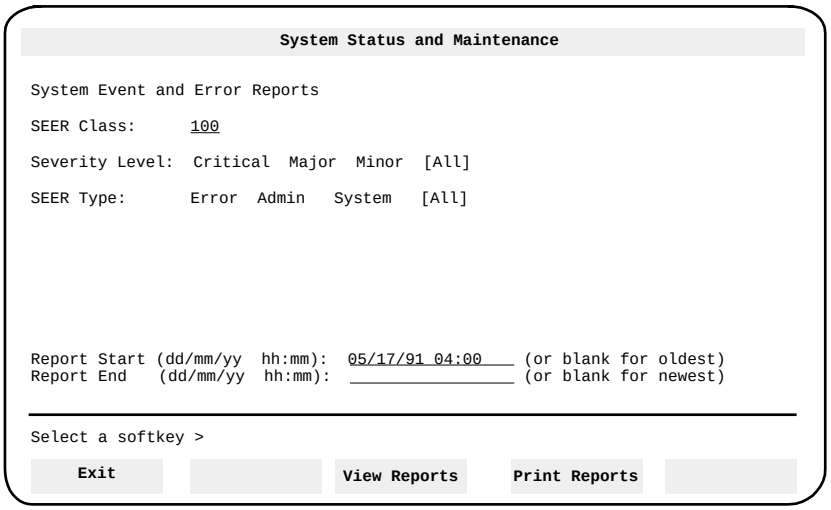
The System Event and Error Reports screen (Figure 12-11) allows you to set parameters for the type of report you want to generate. In this screen, you are able to specify the range of SEERs that you want included in the report by indicating the class and severity level of the SEERs you wish to monitor. You can also specify the period of time that the report should

cover (by entering a start and end date and time). Once the report has been generated according to the criteria you have specified in this screen, you can either view it or print it out.

Note 1: Meridian Mail filters SEERs at different levels for printing to the SEER printer. This level can be set so that only those SEERs that you consider important are displayed. SEER filtering is discussed in the "Introduction" to *Maintenance Messages (SEERs)* (NTP 555-7001-510). To reset the SEER filtering level, contact your Regional Support Center (RSC). SEER filtering is changed using the SELEVEL utility, discussed in *System Administration Utilities* (NTP 555-7001-306).

Note 2: SEERs can also be printed automatically (that is, as they occur) by enabling SEER printing in the General Options screen.

Figure 12-11
The System Event And Error Reports screen



The System Event and Error Reports screen contains the following fields:

- ***SEER Class*** This field allows you to specify the class of SEERs that you want to view or print. The SEER class is the code which identifies the type of event or error being reported. There are over 40 classes, each pertaining to a particular software component. Explanations for these codes are given in *Maintenance Messages (SEERs)* (NTP 555-7001-510). If you want to retrieve SEERs from all classes, leave this field blank.
- ***Severity Level*** The selection you make in this field determines the SEERs that are displayed in the report by allowing you to selectively view SEERs according to their severity. For a description of the severity levels, see the overview at the beginning of this section.
  - ***Critical:*** Only critical SEERs are retrieved.
  - ***Major:*** Major and critical SEERs are retrieved.
  - ***Minor:*** Minor, Major and Critical SEERs are retrieved.
  - ***All:*** SEERs of all severity levels (including Info) are retrieved.
- ***SEER Type*** This field allows you to select the type of SEERs that will be retrieved. Your options are "Error," "Admin," "System," and "All".
  - When Error is selected, only error-type SEERs are retrieved.
  - When Admin is selected, error and admin SEERs are retrieved.
  - When System is selected, error, admin and system SEERs are retrieved.
  - When All is selected, all SEER types are retrieved.
- ***Report Period Start*** This determines the day and time at which the report starts. If this field is left blank, the report starts with the oldest SEER data currently stored in the buffer.
- ***Report Period End*** This determines the day and time at which the report ends. If this field is left blank, the report will include SEER data up to the last (most recent) entry currently stored in the buffer. If neither the start or end day and time are specified, all SEER data currently stored in the buffer will be included in the report.

Viewing SEER reports

Once you have filled in the System Event and Error Reports screen, you can either view the report on screen or print it. If you choose to view the report, the screen illustrated in Figure 12-12 is displayed.

Figure 12-12
The SEER Report

```
                          System Status and Maintenance


   SEER Period from 9/25/93 01:00 to End of SEER data.

   Error  Date Time    Type    Severity Node   Location, Action, Description

   40- 6  9/26 04:00   System    Inf     1    Null
Des:     ms_Server: Bill Table Audit Successfully. 0
   11-50  9/26 04:04   Debug     Inf     1    Null
Act:     Close the file opened by the client specified in the SEER.
Des:     VS1 Stale File Version: root=416 Read Client RTId=7E00 0000 100E 3D11
   11-50  9/26 04:20   Debug     Inf     1    Null
Act:     Close the file opened by the client specified in the SEER.
Des:     VS1 Stale File Version: root=416 Read Client RTId=7E00 0000 100E 3D11
   33-60  9/26 04:30   System    Inf     1    Null
Des:     OM Collection Started
   33-60  9/26 04:30   System    Inf     1    Null
Des:     OM Usage Info Collected for 25/09/93 0
   11-50  9/26 04:36   Debug     Inf     1    Null
Act:     Close the file opened by the client specified in the SEER.
Des:     VS1 Stale File Version: root=416 Read Client RTId=7E00 0000 100E 3D11


  Select a softkey>
    Exit                                              Next Page*
```

* Appears when the information fills more than one screen.

SEER reports contain the following read-only fields:

- ***SEER Period*** This indicates the time period that the report covers. This is determined by the entries that were made in the System Event and Error Reports screen. If no start and end date were entered there, the report displays all SEER data that is currently stored in the buffer.

- ***Error*** This identifies the SEER. The first number indicates the report class (which identifies a particular software component). The second number indicates the report number (which specifies the report within the class, numbered from 0 to 99). This classification system is described in the "Introduction" of *Maintenance Messages (SEERs)* (NTP 555-7001-510). If no class was specified in the System Event and Error Reports screen, SEERs from all classes will be included in the report.
- ***Date*** This indicates the date that the event or error occurred in the system.
- ***Time*** This indicates the time that the event or error occurred in the system.
- ***Type*** This indicates the SEER type (Error, Admin or System).
- ***Severity*** This indicates the SEER severity level (‘***’ = Critical, ‘**’ = Major, ‘*’ = Minor, and Inf = Info).
- ***Node*** This indicates the node where the event error occurred.
- ***Location*** This indicates the system number, node, card, DSP, and port where the problem or event occurred, if applicable (for example, 0-1-3-2-1). If there is no DSP, then only four numbers are shown, with the fourth digit being the port number (for example, 0-1-3-1). If this information is not applicable, the word "Null" appears in this field.
- ***Action*** This gives a recommended action to correct the problem identified by the SEER. This field is only available for SEER classes 11, 14, 25, and 66.
- ***Description*** This gives a brief explanation of the event or the cause for the error.

An alternative method of obtaining SEER information is to monitor the Meridian Mail SEER printer, if there is one, thus allowing you to view SEERs as they occur. To have SEERs print as they occur, SEER printing must be enabled in the General Options screen (it is by default). Although the format of the report is different from that used by the administration terminal, most of the information is the same (such as the class, number, description, and date and time).

In some instances you may also see additional information at the end of the message such as

RC xxxx

where xxxx is a number signifying a Return Code. These codes provide further information about the SEER and can be found in Appendix A of *Maintenance Messages (SEERs)* (NTP 555-7001-510).

Serv. File <filename>

where the filename refers to a voice service ID.

Procedure 12-10
Viewing and printing SEERs

Starting point: The Main Menu

1 Select System Status and Maintenance.

The System Status and Maintenance menu appears (Figure 12-1).

2 Select System Event and Error Reports.

The System Events and Error Reports screen appears (Figure 12-1 1).

3 Enter the class of SEERs that you want to retrieve. If you want to retrieve all SEER classes, leave the *Class* field blank.

4 Select a SEER type. (To view all types of SEERs, select "ALL".)

5 Select a severity level. (To view SEERs at all severity levels, select "ALL".)

6 If you wish to specify a start and end time for the reporting period, enter the required values in the *Report Start* and *Report End* fields.

7 Choose step 7a to view the report on the terminal, 7b to print the report, or 7c to return to the main menu.

a. Press [View Reports].

The report is displayed (Figure 12-12).

Press [Next Page] to view subsequent pages of the report.

b. Press [Print Reports].

You are prompted to make sure your printer is ready and on-line.

Press [Continue Printing] to continue printing, or use [Cancel Printing] at any time to stop printing. There may be some delay before control is returned to the terminal because the system waits for the printer to stop printing.

c. Press [Exit].

The System Status and Maintenance menu appears.

Chapter 13: Operational measurements

Introduction

The Operational Measurement (OM) reports allow administrators and Northern Telecom support staff to study how a Meridian Mail system is being used. These reports may be used to determine if a change in the system is required to improve the level of service provided by Meridian Mail. For example, if overall traffic on the system is higher than was originally anticipated, a channel expansion may be necessary.

OM reports also show which features are being used a lot, and which features are not being used at all. OM reports can also reveal potential technical problems with the system, such as low disk space (the amount of disk space affects Meridian Mail's ability to store messages and perform its features).

The remainder of this chapter describes the OM reports and how to use these reports to identify system problems. Sample reports (with a full description of the fields in each report) are also included in this chapter.

OM traffic reports

The OM traffic reports show how much the system is being used. That is, the reports identify the number of calls processed, and the number of times a user logs in to Meridian Mail or accesses particular features such as voice messaging, voice menu applications, and outcalling. The following traffic reports are available:

- Voice Services Summary
- Voice Messaging Detail
- Channel Usage Detail
- Voice Menu Detail (if installed)

- Networking Detail (if installed)
- AMIS Networking Detail (if installed)
- Outcalling Detail (if installed)
- Fax Delivery Detail (if installed)
- Disk Usage Detail
- Hospitality Statistics (if Hospitality is installed)
- Guest Console Statistics (if Hospitality is installed)

The traffic reports are described in more detail later in this chapter.

OM user usage reports

The OM user usage reports monitor how specific users employ voice messaging, Meridian Networking (if installed), and AMIS Networking (if installed and networking). Data is broken down to show activity on a daily basis. User usage reports display the following daily summary statistics about each user:

- the number of times a user has logged on
- the number of times callers have connected to a user's mailbox through the Express Messaging and Call Answering services
- the total connect time for all user logons, express messaging, and call answering sessions
- the number of messages received through the Express Messaging and Call Answering services
- the number of messages created during logon
- the total message length (for all messages created and received by a user)
- the disk space used by the user's messages and greetings
- the total number of all economy, standard, and urgent AMIS and Meridian Networking messages sent by the user
- the total length of all economy, standard, and urgent AMIS and Meridian Networking messages sent by the user

The user usage reports are described in more detail later in this chapter.

Using OM to detect or investigate system problems

You can use OM reports to monitor how the system is being used. For example, you can use these reports to determine which features are being used, and which are not, and if the use of the system matches what the expectations were when the system size was being determined. If the system is busier than was anticipated, then you may need to expand the system.

Similarly, OM reports can also be used to identify potential system problems, and possibly the cause of the problem. Although you should always use input from the users of the system to help determine if there is a problem, OM reports provide more definite data to work with.

For example, if callers or users complain that they cannot access the Meridian Mail system, channels may be tied or disk space may be low. OM reports can help you determine if the problem is with system capacity or inefficient usage. Some of the potential problems that can be detected through OM reports are discussed in the subsections that follow.

Disk space low

If the voice space used on a disk volume is consistently over your disk usage warning level, then disk space is getting low. Steps should be taken to reduce the voice space used. See the *Voice Space Used* column and the "Report Analysis" section for the Disk Usage Detail report.

Channels busy

The Channel Usage Detail report shows the number of calls and voice mail usage (in CCS) per channel. If the number of calls is high or the average message length is exceptionally long, the channels may be too busy to handle all calls coming in. As a result, users may not be able to access Meridian Mail. Several of the "Report Analysis" sections that follow the sample reports refer to analyzing or dealing with high traffic problems.

Inefficient usage

The Voice Services Summary report provides an overview of how much all your Meridian Mail features are being used. If you notice that some features are not being used at all, this may indicate that the users are not aware of the feature (or don’t know how to use it), or that the feature is not required. The users may require more training. Use broadcast messages to give brief pointers or to inform users of available training courses or material.

Unauthorized usage

If the thru-dial feature is being accessed more frequently during "off hours" or if the average length of the thru-dial sessions is long, this may indicate that unauthorized users (that is, hackers) are accessing your Meridian Mail system in order to use the thru-dial feature (for example, to make long distance calls). If you notice unusual use of the thru-dial feature, review the dialing restrictions for thru-dial (see the *Voice Menus Application Guide* for details [NTP 555-7001-325]). Also, if you are using an access password for thru-dial, change the access password and continue to monitor the thru-dial usage. See the Voice Services Summary report for the number of thru-dial sessions and the average session lengths during specific time periods.

Using OM as a billing tool

As an accounting and billing tool, Operational Measurements is used to generate the daily user billing files (for local activity). Use the User Usage reports to compile data for billing. If you have the AdminPlus feature, use AdminPlus to compile data for billing.

If your organization does not bill users of Meridian Mail, you may not need to use the User Usage component of Operational Measurements. However, it can also be used for tracking problems/history or for security reasons (for example, who is logging on and receiving messages).

Using OM as a capacity planning tool

As a capacity planning tool, Operational Measurements is used to generate traffic reports that you subsequently analyze to determine whether your system requires an upgrade either in disk storage, channel capacity, or perhaps in the number of nodes (should the number of users on your system approach one of the limits discussed in the *Meridian Mail General Description* (NTP 555-7001-101)). If your organization’s use of Meridian Mail is fairly stable, you need only use the traffic measurement component of Operational Measurements on an infrequent basis to verify that the system’s resources are adequate for your needs.

Disk capacity

Because operational measurement data must be stored in a fixed amount of disk space, it is periodically overwritten by new data. You must ensure that you view or print any vital information before it is overwritten (the Operational Measurement Options screen defines how long data is stored). You must also ensure that operational measurement data does not exceed the available storage capacity. Note also that all systems store two days of billing data (this is not an option), as indicated in the example on this page.

In order to calculate your projected storage requirements, you must determine the number of days that you wish to store OM data before it is overwritten. This value is entered on the Operational Measurement Options screen (see page 13-9).

The amount of storage required for each operational measurement can be estimated from Table 13-1. Once you have this information, compute the storage as shown in the example as follows:

Total storage	=	2 x Billing Data Cost (2 days stored by default) + number of traffic days x 1% + number of user usage days x cost of user usage days
Example		24-port 26-hour system with 1500 users, and 31 user usage days, and 8 days of traffic stored. Total storage = (2x5%) + (8x1%) + (31x0.38%) = 30%

The total storage cannot exceed 100% or you are likely to run out of disk space. Should your calculations yield a result greater than 100%, reduce the number of days traffic and/or user usage data is stored, and repeat your calculations. The values presented in Table 13-1 are based on typical parameters for various Meridian Mail configurations. Should your system deviate markedly in any of these assumed traffic patterns, you will need to experiment to determine what your system can accommodate.

Table 13-1
Storage requirements for operational measurements

System type	Number of ports	Number of users	Billing data cost	User usage data cost
Option 11: 2, 5, 10 hr	6	250	1% per day	0.06% per day
Option 11: 24 hr	12	650	2% per day	0.14% per day
1 node: 5, 11 hr	12	500	2% per day	0.12% per day
1 node: 24, 36, 54 hr	12	500	2% per day	0.10% per day
2 node: 26 hr	24	1500	5% per day	0.38% per day
2 node: 54, 84, 114 hr	24	1500	5% per day	0.32% per day
3 node:	32	2000	4% per day	0.28% per day
4 node:	48	3500	5% per day	0.40% per day
5 node:	64	5000	6% per day	0.50% per day
SPM/MSM	192	15000	5% per day	0.35% per day

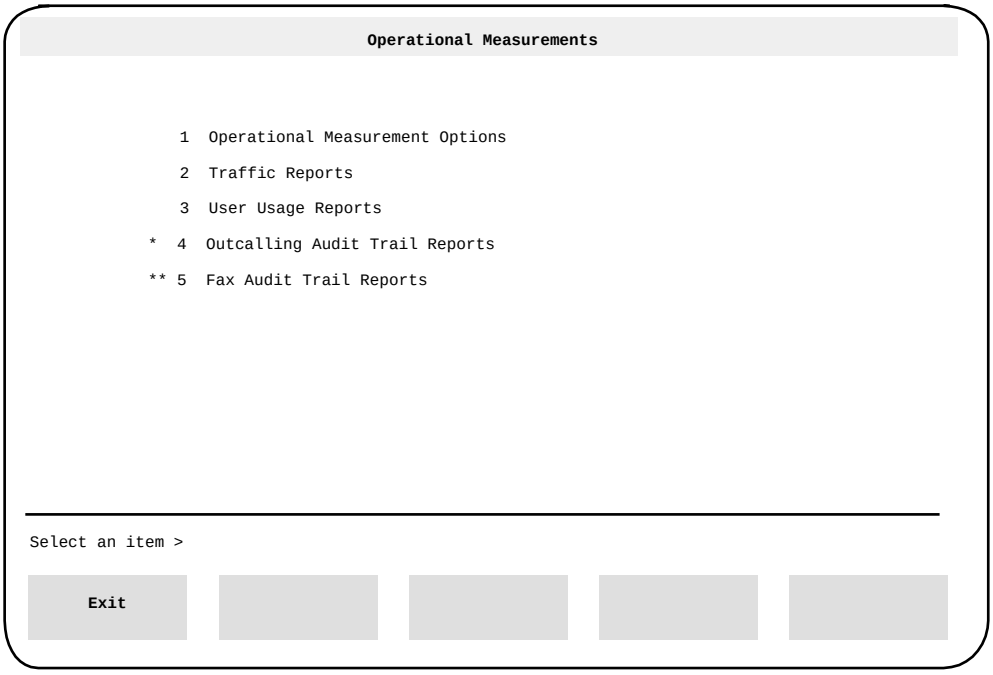
In Table 13-1, the Billing Data Cost and User Usage Data Cost refers to the percentage of VS1 text space used. The values in Table 13-1 are based on the following assumptions:

- The system is in use 12 hours per day, at an average of 50% of peak traffic.
- The average session holding time is 40 seconds (that is, the port or channel is busy for 40 seconds).
- The voice menu traffic is 10% of the voice messaging traffic.

The Operational Measurements menu

The items listed in the Operational Measurements menu (Figure 13-1) allow you to access screens that are used to view parameters related to the collection and storage of data, and to view and print traffic reportsand user usage reports.

Figure 13-1
The Operational Measurements menu



* This line appears only if Outcalling is installed.

** This line appears only if Fax on Demand is installed.

Procedure 13-1
Using the Operational Measurements menu

Starting point: The Main Menu

1 Select Operational Measurements.

The Operational Measurements menu appears (Figure 13-1).

2 To choose an item, enter its number and press <Return>.

See the following sections later in this chapter for details:

<1> "Operational Measurement Options" (collection parameters)

<2> "Traffic reports" (for viewing and printing reports)

<3> "User Usage reports" (for viewing and printing reports)

<4> "Collecting outcalling audit trail data "

<5> "Collecting fax audit trail data "

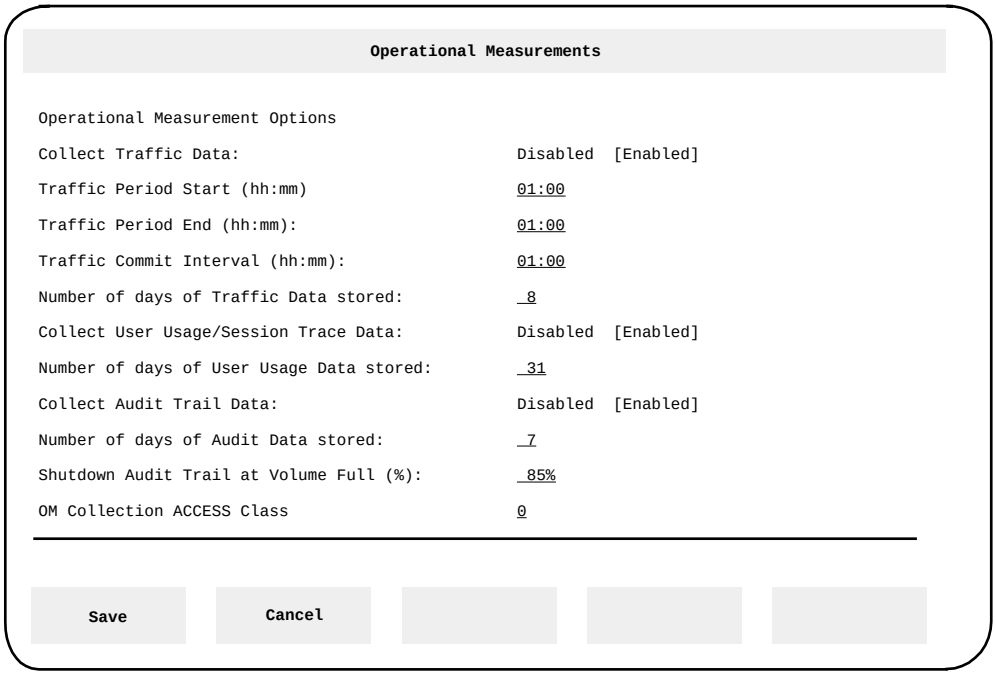
3 Press [Exit] to return to the Main Menu.

Operational Measurement Options

Operational Measurement Options (Figure 13-2) define how system and user statistics are collected. This includes the time traffic data collection begins and ends every day, how often collected traffic statistics are written to disk, and whether or not traffic data, user usage data, or audit trail data is collected. Also included is how many days of data are stored for traffic, user usage data and audit trail reports, and the percentage at which audit trail data collection will automatically be disabled.

> ***Note:*** Because Operational Measurements are kept on hard disk, they are periodically overwritten (as determined by the number of days you specified they be kept on disk). It is important that you view or print these reports before the system overwrites them with new information.

Figure 13-2
The Operational Measurement Options screen



The following fields are displayed:

- ***Collect Traffic Data*** When this field is "Enabled" a statistical record of voice messaging and other voice services, voice channel traffic, Meridian Networking and AMIS Networking message traffic, and disk space usage will be collected and stored on disk. The default is "Enabled".

- ***Traffic Period Start (hh:mm)*** This is for the time at which data begins to be collected, based on the 24-hour clock. The valid range is from 00:00 to 23:30. You may only enter values in half-hour increments, for example, 01:00, 01:30; 02:00, 02:30, etc. The default is 01:00.

- ***Traffic Period End (hh:mm)*** This is for the time at which data stops being collected, based on the 24-hour clock. The valid range is from 00:00 to 23:30. You may only enter values in half-hour increments, for example, 01:00, 01:30; 02:00, and 02:30. To continuously collect traffic data, set the *Period Start* equal to the *Period End* (that is, *Period Start* = 01:00 and *Period End* = 01:00). In this manner, data will be collected 24 hours a day. The default is "01:00".

- ***Traffic Commit Interval (hh:mm)*** The value in this field determines how often the collected traffic statistics are written to the hard disk within the defined traffic period. The default is "01:00". The valid range is from 00:00 to 23:30. For example, if *Collect Traffic Data* is set to "Enabled" and

  Traffic Period Start = 8:00 am,
  Traffic Period Stop = 5:00 pm,
  Traffic Commit Interval = 1 hour and 30 minutes,

  traffic data is collected between 8:00 a.m. and 5:00 p.m. daily, and traffic reports are written to the hard disk every 1 hour and 30 minutes during this period. The first report is written out at 9:30 a.m. and the last one is written out at 5:00 p.m.

  Commit intervals should be entered in half-hour increments and equally divisible into the period range. The smallest allowed interval is 30 minutes. However, a one hour interval will provide similar granularity of data and will require only half as many writes to disk (resulting in less disk usage) as the 30 minute interval.

Note: The traffic commit interval can be set to 24 hours. However, an interval greater than 2 hours is not recommended because the accumulated numbers may be too large to be accommodated by the fields in the report screens. If a number is too large, ">999" is displayed in the field to indicate overflow. Furthermore, any data that is not written to disk is lost if a system reboot occurs.

- ***Number of days of Traffic Data stored*** This field determines the number of days that traffic data is maintained before being overwritten by new traffic data. For example, if this field is set to 8, on the 9th day you will not be able to view traffic data collected on the first day as it will have been overwritten, but you will be able to view the data from the remaining eight days. The valid range is from 1 to 8 days. The default is 8. The old traffic data is removed from the disk at 1:20 am each day. The data for the current day is not included in the number of days of traffic data stored.
- ***Collect User Usage/Session Trace Data*** This field controls the collection of both user usage data and session trace data. Session trace data includes detailed voice messaging session statistics. The session statistics are kept for two days, regardless of how long you define user usage data to be stored. Session reports can be accessed using the Session Trace tool (see *System Administration Tools* (NTP 555-7001-305)). The default for this field is "Enabled".
- ***Number of days of User Usage Data stored*** This field controls the number of days of user usage data which is kept on the hard disk before it is overwritten. The range is from 1 to 63. The default is 31.
- ***Collect Audit Trail Data*** When this field is set to "Enabled" Outcalling or Fax Audit Trail reports are generated by the system. These reports can be used to obtain information about a specific outcalling or fax call-back session. The reports give you either summary or detailed information about the number of calls, the start time and duration of calls, the numbers called, and details of the call status. The default is "Enabled". See the section "Collecting outcalling audit trail data" for more information.
- ***Number of Days of Audit Data stored*** This field is used if *Collect Audit Trail Data* is set to "Enabled". This field indicates the number of days the audit trail data will be stored on disk before being overwritten. The number of days can range from 1 to 63, with a default of 7.

- ***Shutdown Audit Trail at Volume Full (%)*** This field is used if *Collect Audit Trail Data* is set to "Enabled". When the volume on which audit trail data is stored meets this percentage, collection of audit trail data is disabled. (Note that this is a percentage of text space, not voice space.) The default is 85%.
- ***OM Collection ACCESS Class*** This field indicates the class number of the ACCESS application for which Operational Measurements should be collected. The valid range for this number is 0 to 8999. It is primarily intended to be used to collect messenger desktop access of Meridian Mail ports.

Procedure 13-2
Setting Operational Measurement parameters

Starting point: The Main Menu

1 Select "Operational Measurements".

The Operational Measurement Options screen appears (Figure 13-2).

2 Set the parameters as required.

3 Choose step 3a to save the changes or 3b to cancel.

a. Use [Save].

The changes are saved and the Operational Measurements menu is redisplayed.

Note: Any saved changes force all traffic data to be committed at the time of the save, regardless of the interval and period specified. This action will also create an irregular time period (the time up to the save) which will appear on the traffic reports. Also, a SEER is issued to indicate that the changes have taken effect.

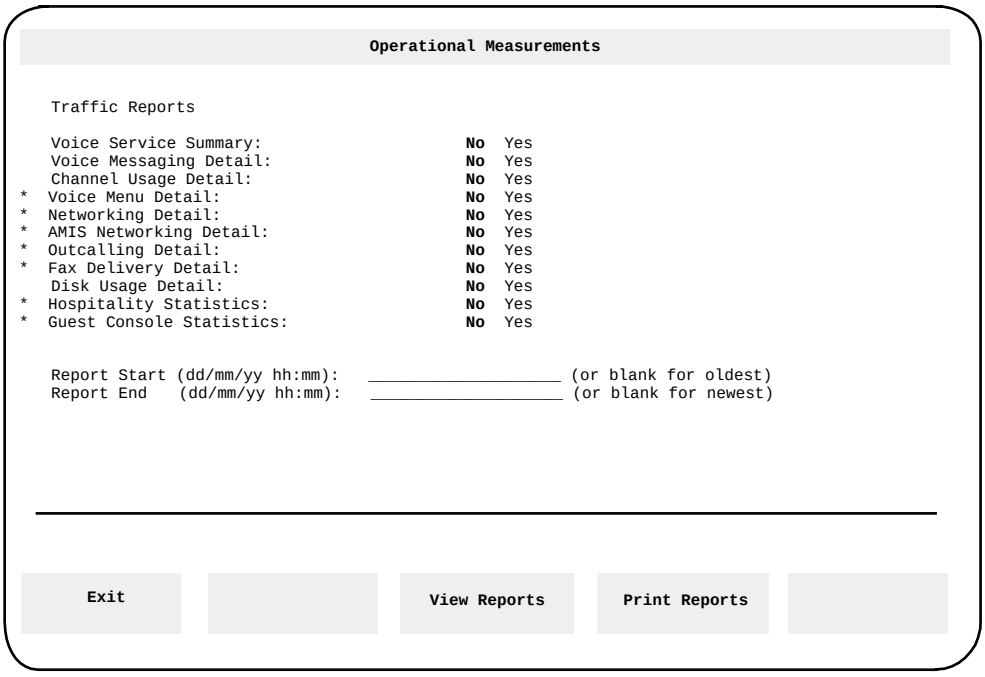
b. Use [Cancel].

Any changes you have made are discarded; the Operational Measurements menu is redisplayed.

Traffic reports

The Traffic Reports screen appears when the item "Traffic Reports" is selected from the Operational Measurements menu.

Figure 13-3
The Traffic Reports screen



* Indicates optional features. The report will not appear if the feature is not installed.

Each line in the Traffic Reports screen represents a specific type of report. These reports are described briefly here:

- ***Voice Services Summary*** This report displays statistics such as the number of accesses, average session length, and voice mail usage in CCS (centa call seconds) for the services that are installed on the system.
- ***Voice Messaging Detail*** This report displays statistics for voice messaging usage. This includes information about the number of messages created in various categories, average message lengths, session lengths, and the number of internal and external calls.

- ***Channel Usage Detail*** This report displays statistics, including the number of incoming and outgoing calls and CCS (centa call seconds, or hundred call seconds), for each channel.
- ***Voice Menu Detail*** This line appears only if the Voice Menus feature is installed. This report displays the number of times a voice menu, announcement, or fax item was accessed. This report also shows the number of times that each menu item in the accessed voice menu application has been used within the specified reporting period. This report is available only if the Voice Menus or Fax on Demand feature is installed.
- ***Networking Detail*** This line appears only if Meridian Networking is installed. This report displays information about the number of economy, standard, urgent, non-delivery notification, and acknowledged networking messages sent and received at the remote sites, as well as connection statistics.
- ***AMIS Networking Detail*** This line appears only if AMIS Networking is installed. This report displays information about the number of non-delivery notifications (NDNs), economy, standard and urgent messages sent and received by the system, as well as connection statistics.
- ***Outcalling Detail*** This line appears only if Outcalling is installed. The Outcalling Detail report displays statistics for Remote Notification and Delivery to Non-Users activity.
- ***Fax Delivery Detail*** This line appears only if Fax on Demand is installed. This report displays statistics on the number of fax delivery requests, successful connections, retries, unreachable calls, and waiting times.
- ***Disk Usage Detail*** This report summarizes how much voice space and text space have been used for each storage volume.
- ***Report Start (dd/mm/yy hh:mm)*** When requesting reports, this field allows you to specify the date and time at which the report should begin. The value you enter is based on the 24-hour clock. The valid range is from 00:00 to 23:59 (12:00 midnight to 11:59 p.m.). If this field is left blank, the default-the start of available data-is used.

- ***Report End (dd/mm/yy hh:mm)*** This field determines the date and time at which the report should end. The value entered in this field, based on the 24-hour clock, can be set from 00:00 to 23:59. If this field is left blank, the default-the end of the available data-is used.

Procedure 13-3
Viewing and printing traffic reports

Starting point: The Operational Measurements screen

1 Select Traffic Reports.

The Traffic Reports screen appears (Figure 13-3).

2 Select the reports you wish to view.

3 (This step is optional.) Specify start and stop times for the report period by entering the values in the *Report Start* and *Report End* fields.

4 Choose step 4a to view the reports on the terminal, 4b to print the reports, or 4c to cancel.

a. Press [View Reports].

The selected report screens are displayed (see the following pages for descriptions of each report).

When you select the various reports screens, you will see <Next Report> and <Exit> softkeys at the bottom of the screen. <Next Report> lets you exit from the current report screen to the next report screen, while <Exit> lets you exit from all the report screens back to the Traffic Reports screen.

Use [Next Page] to view subsequent pages of the current report.

b. Press [Print Reports].

You are prompted to ensure the printer is ready and on-line.

Use [Continue Printing] to print the reports, or use [Cancel Printing] at any time to cancel printing.

There may be some delay before control is returned to the screen because it waits for the printer to stop printing.

c. Press [Exit].

The Operational Measurements menu is redisplayed.

How to interpret OM reports

Many of the OM reports refer to the CCS value (centa call seconds per hour, or hundred call seconds per hour). The formula for calculating the CCS is

$$CCS = \frac{60\ minutes}{interval\ (in\ minutes)} \times \frac{total\ call\ seconds}{100\ seconds}$$

The first part of the formula compensates for intervals which are not one-hour intervals. For example, 320 total call seconds during a half-hour interval produces the following CCS:

$$CCS = \frac{60\ minutes}{30\ minutes} \times \frac{320\ seconds}{100\ seconds} = 2 \times 3.2 = 6.4 \approx 6$$

If the interval is one hour, the first part of the formula can be ignored. For example, 320 total call seconds over a one-hour interval produces the following CCS:

$$CCS = \frac{60\ minutes}{60\ minutes} \times \frac{320\ seconds}{100\ seconds} = 1 \times 3.2 = 3.2 \approx 3$$

When interpreting the OM reports, also keep the following points in mind:

- Look not only at the counts for each service but also at the relationship between the counts for different services.

  For example, both express messaging and call answering features allow messages to be left in the system. Therefore, both counts should be taken into consideration when looking at the total number of incoming messages during a particular time period.

- Know the size of the system - both channels and disk capacity.

  Smaller systems will be much more sensitive to high peg counts and durations than larger systems.

- Know how the organization using the system operates.

Many of the counts and durations will have a direct relationship on how the organization uses the system as part of its overall operation (for example, voice messaging only?, auto attendant?, menus?, etc.). If you don't know how the organization functions, find someone within the organization who does, and interpret the information together. That person will provide the necessary knowledge about how the organization works, and you can provide the information about the system.

- Make sure you have taken any unusual operational activity into consideration.

  For example, is it a national holiday? or election day? or was there a major news event recently? Such unusual activities may cause an abnormal usage of your system which will distort the figures.

- Many reports relate to one another.

  For instance, the voice services summary report provides a summary of the voice menus, fax, and announcement traffic, but the voice menus detail report provides much more detail about these particular services. Know what reports a system can produce, and know which ones relate to each other. Read through each report and move back and forth though the information making sure you have optimized the interpretation and analysis process.

- Consult the users of the system to gain further insight into a report's findings.

  Find out how the system is working for the users and if they have any problems to report. Some apparent system problems may be the result of improper usage of the system (perhaps due to lack of training or awareness of certain system features).

- Consider how long a feature or service has been in operation.

  When something is new, it may generate more traffic than normal as a result of human curiosity, or it may generate less traffic due to unfamiliarity with the new feature, so the initial figures may be distorted.

- If you are working on numerous Meridian Mail systems, remember that each Meridian Mail system is unique.

Make sure you apply all the previously described points separately to each system.

Voice Service Summary report

The Voice Service Summary report provides statistics for each of the voice services installed in your system (Figure 13-4). The total number of times a user dialed a service (number of accesses), and the average length of each access are given.

Figure 13-4
Voice Service Summary report screen

Operational Measurements

Voice Service Summary

Interval	Start-End	Service Name	Number of Accesses	Average Length (in seconds)	Voice Mail Usage (in CCS)
04/22	09:00-10:00	Thru-Dial	53	7	4
		Voice Menus	301	12	36
		Voice Messaging	1022	65	664
		Call Answering	1437	29	416
		AMIS	0	0	0
		Meridian ACCESS	0	0	0
		Express Messaging	86	49	42
		Voice Announcements	31	111	34
		Networking	0	0	0
		Voice Administration	0	0	0
		Voice Prompt Admin	0	0	0
		Time of Day Control	0	0	0
		Post Checkout	0	0	0
		Delivery to Non-User	0	0	0
		Remote Notification	26	42	11
		Remote Activation	0	0	0
		Voice Forms	0	0	0
		Transcription Service	0	0	0
		Fax Same Call	5	300	15
		Fax Call Back	5	300	15
		Fax Info Service	5	42	2
		Fax Maint Service	1	300	3

Select a softkey >

Exit | **Next Report** | | **Next Page*** |

* The "Next Page" softkey appears when the information fills more than one screen.

The following read-only fields are displayed:

- ***Interval Start-End*** Data is divided into intervals. The length of the interval depends on the entry made in the *Traffic Commit Interval* field in the Operational Measurement Options screen. The number of intervals displayed depends on the entries made in the *Traffic Period Start* and *Traffic Period End* fields in the Operational Measurement Options screen. For example, if data is collected 24 hours a day (from 01:00 to 01:00), and the commit interval is one hour, the report will divide the data into 24 intervals for each day included in the report. The amount of data displayed in this report depends on the *Report Start* and *Report End* entries that were made in the Traffic Reports screen. If no report start and end dates and times were given, all data currently stored on disk are displayed.

- ***Service Name*** This field displays the name of the service that was accessed.

- ***Number of Accesses*** This field displays the number of calls (peg count) made to the corresponding service.

  Note that if a call continues past the interval, the access is only counted in the second interval (when the call is completed), although the call length is properly divided between the two intervals. For example, if a call starts 10 minutes before the end of an interval, that 10 minutes of call length is counted in that interval. If the same call continues for 5 minutes into the next interval, the 5 minutes is counted in the second interval. The number of accesses is increased by 0 in the first interval and by 1 in the second interval. The call is pegged in this way to match the way calls are tracked by the switch.

  If a call that spans two intervals is the only call to that service in those intervals, the number of accesses in the first interval would be 0 while the number of accesses in the second interval would be 1.

  Note: The number of Thru-Dial accesses includes accesses to Voice Service Thru-Dial (automated attendants), Call Service Thru-Dial, and Logon Thru-Dial.

- ***Average Length (in seconds)*** This field displays the average length of the corresponding voice service sessions during the specified interval.

- ***Voice Mail Usage (in CCS)*** This field displays the amount of time that a Meridian Mail service was active in the defined interval. The value is given in CCS (hundred call-seconds), a traffic measurement statistic. One CCS is equal to 100 seconds of call connection time per hour. The CCS is based on the total number of call seconds, not the average length multiplied by the number of accesses.

Report analysis

The second line in the sample report shows that 301 calls, with an average length of 12 seconds, were placed to the Voice Menu service for a total of 3612 seconds (301 x 12). This equates to 36 CCS (hundred call-seconds) in the one hour interval. The CCS count is computed for the one hour interval as follows:

$$CCS = \frac{3612\ seconds}{100\ seconds} = 36.12 \approx 36$$

Use the summary report, including the CCS values, to get an overall sense of which services are generating the most traffic and which are generating little or no traffic. Also consider the following points:

- If a feature is not being used, it may mean that it is not working properly, or that the users are not aware of the feature and therefore do not use it.

  After the administrator notices a low (or no) usage of a particular feature, it is up to the administrator to then do additional research to determine if there is a technical problem with the feature, or if it simply is not being used, or if it is normal for the usage to be low for the observed time period.

- If a feature is generating an unusually high amount of traffic, you may encounter system performance problems such as no free channels.

  Run the report that goes with that service, if there is one, for more information. As the administrator, you may need to do more research beyond checking the OM reports to learn more about the nature of the problem and possibly come up with a solution. For example, you need to determine if the high traffic level was due to some unusual event that affected your organization (if so, the high traffic would not be expected to continue).

If the high traffic for a particular feature is expected to continue, one solution may be to dedicate a channel to the feature so that the feature does not tie up the whole system. Refer to the section "Configuring UCD queues and DNs" for more details on dedicating channels. Another solution is to expand the system if overall traffic for the whole system is higher than what was originally anticipated for the system.

- Another area to check is the average length for Voice Menu and Announcement accesses (see the Voice Menu Detail report).

  If the average length is long, review your menus and announcements to see if they can be shortened or rearranged for more efficient use. For example, for menus place the popular items first so that users do not need to stay on the line as long before the item they want is presented. If a menu has a long average length and it accesses an announcement, try to shorten the announcement.

- If the number of Call Answering accesses is high, check the logon count versus the number of times Call Answering has been accessed (the Voice Messaging Detail report gives the logon count).

  If the logon count is low compared to the number of Call Answering accesses, this means that users are accumulating several messages before logging on to listen to them. Too many accumulated messages lowers the amount of available disk space to the point where overall system performance may be affected.

- If users are having trouble logging in to Meridian Mail at a certain time, check the level of traffic for that time period.

  You may have found your heavy traffic period or *busy hour*. If there is no way you can reduce the traffic during that time period, you may need to expand your system.

- If you have an unusually high number of thru-dial accesses, this may be a sign of hackers present on your system.

If you suspect hackers are accessing the thru-dial feature, first check how the thru-dial service is set up to see if the OM data are unusual. For example, if thru-dial is part of a menu service that executives use to call in and access thru-dial capability, then you can expect the outgoing calls to be lengthy. If your research still suggests the possible presence of hackers, review the dialing restrictions for thru-dial (see the *Voice Menus Application Guide* for details (NTP 555-7001-325)). Also, if you are using an access password for thru-dial, change the access password and continue to monitor the thru-dial usage.

Dedicating a channel

If you choose to dedicate a channel to a particular service, first consider the following points and review them with a system engineer before making a final decision. Dedicating a channel reduces the overall traffic capacity of a system.

- How many channels are on the system?

  A small system would experience a significant impact from the removal of even one channel for specific services.

- How many users are on the system?

  A large number of users make greater demands on all channels. Again, removing a channel may impact services.

- Does the organization experience high peak traffic periods?

  During low traffic periods, traffic reports may indicate that a channel can be spared. However all channels may be necessary during peak periods if the traffic is high at those times.

- Is the service with the dedicated channel going to receive enough demand to make dedicating a channel worth the cost to the rest of the system?

- Is the assignment temporary or permanent?

  If the assignment is temporary and during a low traffic period, then the removal of the channel may not greatly affect the system. If the assignment is permanent, then the removal of the channel will have some impact.

For complete details on dedicating a channel, refer to the section "Configuring UCD queues and DNs" in the "Voice Administration" chapter.

Voice Messaging Detail report

The Voice Messaging Detail report (Figure 13-5) provides information about logon sessions, call answering sessions, and messages composed during logon sessions. If data is unavailable for a given statistic, N/A (not available) is displayed instead of a value. For example, if the interval is 1 minute long, the system may interpret that interval as having zero length, so no data is available. A 1-minute interval may be created if you update and save the OM options, which forces all traffic data to be written to disk at that point and which results in an irregular interval.

If a value is too large to fit in a field, >999 is displayed.

Figure 13-5
The Voice Messaging Detail report

```
                              Operational Measurements

Voice Messaging Detail

                    Number       Number of     Session   Messages      Message
                    of Calls     Sessions      Length    Created       Length
Interval Start-End  Int  Ext     EM/Ans  Log  Avg  Max  EM/Ans Log    Avg  Max

10/28  09:00-10:00   18   0        2     16   238  470    0     2     20    25
10/28  10:00-11:00   12   2        5      9   310  310    1    32     14    14
10/28  11:00-12:00   17   1        1     17   478  624   1     20     20    20

 Select a softkey >

   Exit          Next                          Next Page*
                Report
```

* The "Next Page" softkey appears when the information fills more than one screen.

The following fields are displayed:

- ***Interval Start-End*** Data is divided into intervals. The length of the interval depends on the entry made in the *Traffic Commit Interval* field in the Operational Measurement Options screen. The number of intervals displayed depends on the entries made in the *Traffic Period Start* and *Traffic Period End* fields in the Operational Measurement Options screen. For example, if data is collected 24 hours a day (from 01:00 to 01:00), and the commit interval is one hour, the report will divide the data into 24 intervals for each day included in the report. The amount of data displayed in this report depends on the *Report Start* and *Report End* entries that were made in the Traffic Reports screen. If no report start and end dates and times were given, all data currently stored on disk are displayed.
- ***Number of Calls*** This field shows the number of voice messaging, call answering, or express messaging calls made. More specifically,
  - ***Int*** This display indicates the number of calls made from inside the switch during the specified interval.
  - ***Ext*** This display indicates the number of calls made from outside the switch during the specified interval.
- ***Number of Sessions (EM/Ans and Log)*** This is the number of sessions in the interval.
  - ***EM/Ans*** This display indicates the number of sessions used for express messaging and call answering services.
  - ***Log*** This display indicates the number of time users logged into their mailboxes during the interval.

  The sum of the values in these two columns should equal the sum of the two *Number of Calls* values. To determine the number of messages that were actually received or created during these sessions, check the *Messages Created* fields.
- ***Session Length (Avg and Max)*** This field indicates the average length and maximum length (in seconds) of call answering, express messaging, and logon sessions for the interval.
- ***Messages Created (EM/Ans and Log)*** This field indicates the number of messages created during the interval.

- ***EM/Ans*** This display indicates the number of messages left during express messaging and call answering services.
- ***Log*** This display indicates the number of messages that were created (using the compose, forward, or reply command) during the interval.

- ***Message Length (Avg and Max)*** This field indicates that this is the average length and maximum length (in seconds) of messages received and created during the interval. Since message length impacts disk storage, use this information to determine if enough disk space has been provisioned for voice messages.

Report analysis

The first line in the sample report shows that eighteen calls were placed to Meridian Mail. Sixteen were logon sessions (for example, to compose, forward, or listen to messages). Two calls accessed Express Messaging or Call Answering feature (an attempt to leave a message at another mailbox). If the number of sessions does not equal the number of calls, there is a problem with your system.

The number of EM/Ans sessions should match or be close to the number of EM/Ans messages created. When there are more EM/Ans sessions than EM/Ans messages created (as in the sample report), this means that during an Express Messaging session, or after reaching the Call Answering greeting, users are hanging up without leaving a message, or they are pressing 0 to transfer to an attendant (resulting in Express Messaging or Call Answering sessions but no messages created). If the disparity between the two numbers is high, the users may need some training on the use of Express Messaging and Call Answering. Also, users should review their greetings. If greetings are unfriendly or if instructions are too complex, this may be causing users to hang up without leaving a message.

On this report, watch for high numbers of calls and long messages. Too many calls in a short period of time will tie up channels and prevent others from accessing Meridian Mail. If the high number of calls is from internal logon sessions and the level of voice space used is not high (see Disk Usage Detail report), consider ways to reduce the number of logon sessions. If the channel tie-up is from outside callers, then you probably don’t want to discourage the callers, so you may need to expand your system.

Channel Usage Detail report

Channel Usage Detail reports (Figure 13-6) detail about channel activity for incoming and outgoing calls, including average session lengths and CCS (hundred call-seconds) statistics.

Figure 13-6
Channel Usage Detail report

Operational Measurements

Channel Usage Detail

Interval	Start-End	Channel	Number of Incoming Calls	Number of Outgoing Calls	Incoming Avg Length (in seconds)	Outgoing Avg Length (in seconds)	Voice Mail Usage (in CCS)
04/22	09:00-10:00	1	44	0	42	0	18.5
		2	43	0	47	0	20.2
		3	40	0	49	0	19.6
		4	46	0	40	0	18.4
		5	48	1	35	30	17.1
		6	47	1	39	31	18.6
		7	45	1	38	30	17.4
		8	47	2	36	33	17.6
		9	43	0	47	0	20.2
		10	46	0	40	0	18.4
		11	44	0	42	0	18.5
		12	49	0	40	0	19.6

Select a softkey >

Exit | **Next Report** | | **Next Page*** |

* The Next Page softkey appears when the information fills more than one screen.

The following fields are displayed:

- ***Interval Start-End*** Data is divided into intervals. The length of the interval depends on the entry made in the *Traffic Commit Interval* field in the Operational Measurement Options screen. The number of intervals displayed depends on the entries made in the *Traffic Period Start* and *Traffic Period End* fields in the Operational Measurement Options screen. For example, if data is collected 24 hours a day (from 01:00 to 01:00), and the commit interval is one hour, the report will divide the data into 24 intervals for each day included in the report. The amount of data displayed in this report depends on the *Report Start* and *Report End* entries that were made in the Traffic Reports screen. If no report start and end dates and times were given, all data currently stored on disk is displayed.
- ***Channel*** This field indicates the channel being monitored.
- ***Number of Incoming Calls*** This field indicates the number of calls incoming during the interval.
- ***Number of Outgoing Calls*** This field indicates the number of calls outgoing during the interval.
- ***Incoming Avg Length (in seconds***) This field indicates the average length of incoming calls during the interval.
- ***Outgoing Avg Length (in seconds)*** This field indicates the average length of outgoing calls during the interval.
- ***Voice Mail Usage (in CCS)*** This field represents the amount of time in terms of CCS (hundred call-seconds) that a Meridian Mail channel was active in the defined interval. CCS is a traffic measurement statistic. One CCS is equal to 100 seconds of call connection time per hour. The value is displayed in the nearest one tenth of a CCS (for example, 11.0).

  Note: There is a similar *Voice Mail Usage* field in the Voice Services Summary screen (Figure 13-4). However, because the two fields measure usage differently (one in terms of channels and the other in terms of voice services), there may be small differences between the two fields if you calculate the totals for the displayed values.

Report analysis

The CCS for each channel gives an indication of how busy each channel is. With Call Distribution (UCD), the traffic (measured in CCS) should be evenly distributed across all channels over a lengthy period (for example, 12 hours).

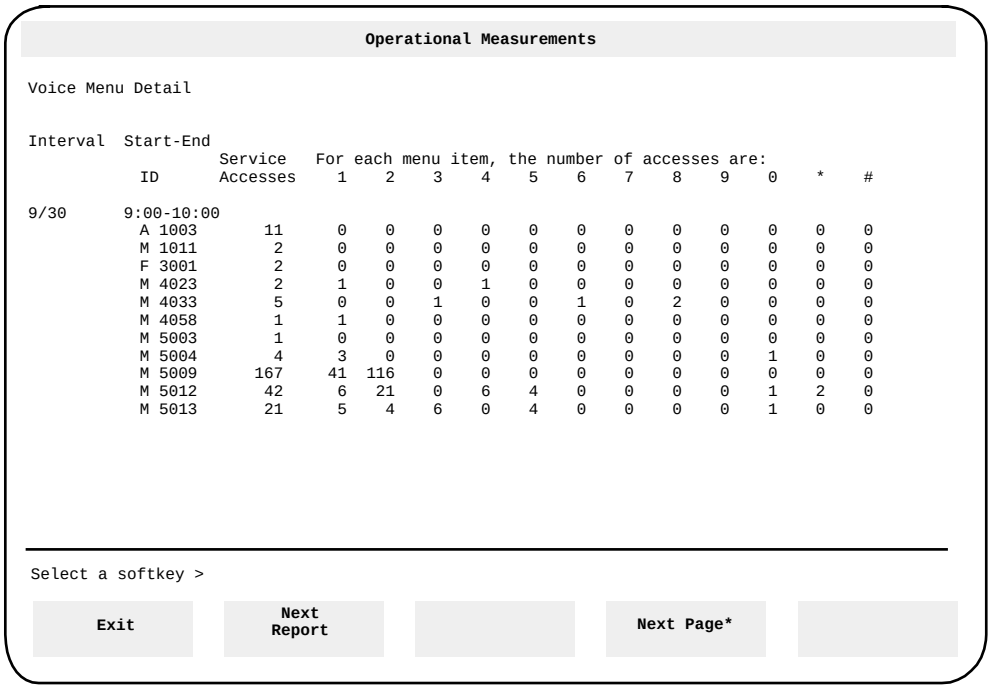
Channels with short durations will have a higher number of calls than channels with long durations, but the average amount of traffic (for example, CCS) for each nondedicated channel should be similar. If the traffic is not evenly distributed, check if all channels are working properly. If a channel has no traffic at all for the entire period of the report, this may indicate that the channel is out of service. If any channels are dedicated to a particular service, the number of calls for the dedicated channels may differ significantly from the number of calls on the other channels.

If users are having trouble accessing Meridian Mail (for example, callers are getting ringback or busy signal), check if the dedicated channel appears to have a much fewer calls than other channels. If so, you may be better off removing the dedication and opening the channel to all services. A busy system cannot afford to have any channels that are not sharing the full load on the system.

Voice Menu Detail report

This report (Figure 13-7)is available only if Voice Menus or Fax on Demand is installed on your system. The Voice Menu Detail report records the number of times that each menu option in a voice menu application was used during the reporting period. This report details all accesses, direct or indirect, to voice menus, announcements, and fax items. Direct accesses occur when a user dials the DN of the menu, announcement, or fax item. Indirect accesses occur when a service is accessed from another service through a menu selection.

Figure 13-7
The Voice Menu Detail report



```
                              Operational Measurements

Voice Menu Detail


Interval  Start-End
                  Service   For each menu item, the number of accesses are:
            ID    Accesses    1    2    3    4    5    6    7    8    9    0    *    #

9/30      9:00-10:00
            A 1003       11    0    0    0    0    0    0    0    0    0    0    0    0
            M 1011        2    0    0    0    0    0    0    0    0    0    0    0    0
            F 3001        2    0    0    0    0    0    0    0    0    0    0    0    0
            M 4023        2    1    0    0    1    0    0    0    0    0    0    0    0
            M 4033        5    0    0    1    0    0    1    0    2    0    0    0    0
            M 4058        1    1    0    0    0    0    0    0    0    0    0    0    0
            M 5003        1    0    0    0    0    0    0    0    0    0    0    0    0
            M 5004        4    3    0    0    0    0    0    0    0    0    1    0    0
            M 5009      167   41  116    0    0    0    0    0    0    0    0    0    0
            M 5012       42    6   21    0    6    4    0    0    0    0    1    2    0
            M 5013       21    5    4    6    0    4    0    0    0    0    1    0    0

Select a softkey >

Exit | Next Report | | Next Page* |
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* The Next Page softkey appears when the information fills more than one screen.

- ***Interval Start-End*** Data is divided into intervals. The length of the interval depends on the entry made in the *Traffic Commit Interval* field in the Operational Measurement Options screen. The number of intervals displayed depends on the entries made in the *Traffic Period*

Start and *Traffic Period End* fields in the Operational Measurement Options screen. For example, if data is collected 24 hours a day (from 01:00 to 01:00), and the commit interval is one hour, the report will divide the data into 24 intervals for each day included in the report. The amount of data displayed in this report depends on the *Report Start* and *Report End* entries that were made in the Traffic Reports screen. If no report start and end dates and times were given, all data currently stored on disk are displayed.

- ***ID*** This is the ID number of the voice menu, announcement, or fax item. Voice menus are indicated by the letter M followed by the ID number. Announcements are preceded by an A. Fax items are preceded by an F.
- ***Service Accesses*** This is the number of times the menu, announcement, or fax item was accessed (either directly or indirectly) during the measurement period.
- ***For each menu item, the number of access are*** This is the total number of times that each menu option was used during the measurement period. For stand-alone announcements and fax items, all frequencies are 0. If announcements or fax items are accessed through a voice menu, then there is an access count if a caller presses 0 to revert to the attendant. The number of accesses for the individual menu items may not add up to the number of accesses for the menu itself (Service Accesses) because some callers will hang up after reaching the menu if they do not want to choose any of the menu options, or if they want to talk to a live person.

  Similarly, calls from rotary dial phones that are able to directly access a menu will be counted in the *Service Accesses* column but not in the number of accesses for individual menu items since the rotary dial phone does not have the touch tone capability required to select a menu item.

Report analysis

This report provides a detailed breakdown of which menu items, announcements, or fax items are actually being accessed, and a sense of the traffic that each menu or announcement or fax item is generating.

While reviewing the report, consider the following points:

- If the menu items that are at the end of the menu (for example, item 8 or 9) are being accessed more frequently than earlier items, you may wish to reorganize the menu so that the popular items are presented first.

  This structure prevents users from having to wait through all the earlier options before hearing the one the way want, thus reducing the call length.

- If a particular service is generating a high volume of traffic, find out if there is any call blockage (that is, users unable to access the system).

  If announcements or menus are causing call blockage, see if the information can be provided in some other way other than through Meridian Mail (for example, through hard-copy memos, bulletin boards.) If the service is a definite requirement and its usage cannot be decreased, then your system may require a channel expansion.

- If a menu item has few or no accesses, the reason may be a lack of training or awareness regarding those items, or that those items are simply not required.

  If you find that certain menu items, announcements, or fax items are not required, either remove them or replace them with a more useful menu item, announcement, or fax item. Be sure to rerecord the greetings and menu choices to reflect the changes.

- Whether the traffic is high or low for a particular voice menu, announcement, or fax item, consult the users to determine if there was some unusual reason for the change in traffic.

  If the high or low traffic is expected to return to acceptable levels, no adjustment may be necessary to the system.

For a proper analysis of this report, have a printed copy of the voice menus, announcements, and fax items in front of you to refer to.

Networking Detail report (for Meridian Networking)

This report is available only on systems with Meridian Networking installed. The Networking Detail report (Figure 13-8) displays traffic totals for each active site within the Meridian Mail network. Statistics are shown for the number of messages received at each site from other network sites and the messages delivered to network sites. Statistics are also displayed for network usage and failures.

Figure 13-8
The Meridian Networking Detail report

```
                                  Operational Measurements

  Networking Detail

  Interval Start-End
          Messages              Messages Delivered                                  Failures
          Received      Eco  Std  Urg  NDN  Ack  Failed       Network Usage     No  Not   Prot
  Site    (from site)   (---------to site------) to send     Att  Suc  Time     Res Reach Error
                                                                       (min)

  09/30   10;00-11:00
  111     100           10   10    5    0    0       0         2    1  2:32      6   12    0
  112     100            0    0    2    0    0       0         4    2  4:04      0    0    0
  09/30   11:00-12:00
  112     25            10   10    5    0    0       0         0    0  0:00      6    0   12

  ______________________________________________________________________________________
  Select a softkey >

     Exit           Next                          Next Page*
                   Report
```

* Appears when the information fills more than one screen.

The following fields are displayed:

- ***Interval Start-End*** Data is divided into intervals. The length of the interval depends on the entry made in the *Traffic Commit Interval* field in the Operational Measurement Options screen. The number of intervals displayed depends on the entries made in the *Traffic Period Start* and *Traffic Period End* fields in the Operational Measurement Options screen.

For example, if data is collected 24 hours a day (from 01:00 to 01:00) and the commit interval is 1 hour, the report will divide the data into 24 intervals for each day included in the report. The amount of data displayed in this report depends on the *Report Start* and *Report End* entries that were made in the Traffic Reports screen. If no report start and end dates and times were given, all data currently stored on disk are displayed.

- ***Site*** This is the site ID to which the row of data applies.
- ***Messages Received*** This field indicates the number of messages received by the local site from the specified remote site.
- ***Messages Delivered*** This is the number of messages delivered from the local site to the identified remote site. This statistic is further subdivided into the following categories based on the type of message:
  - ***Eco:*** These are messages that have been classed as economy.
  - ***Std:*** These are messages that have been classed as standard.
  - ***Urg:*** These are messages that have been classed as urgent.
  - ***NDN:*** These are non-delivery notification messages sent by the system to users whose messages could not be delivered (as the result of a "Failed to Send").
  - ***Ack:*** These are acknowledgements returned by Networking to indicate that a message (that was tagged for acknowledgement) was read by the Meridian Mail user at the remote site.
  - ***Failed to send:*** This indicates messages that were not sent. This indicates that the system experienced many failures and could not deliver the message to the remote site within the stale-dating threshold (see the "Meridian Networking administration" chapter in the *Networking Services Administration Guide* (NTP 555-7001-335) for information about stale-dating). They are effectively "lost" and must be recomposed and resent.
- ***Network Usage*** This statistic indicates the number of networking calls placed by the local site to the specified remote site during the specified interval. It is further broken down into the following categories:
  - ***Att*** This indicates the number of attempted calls.
  - ***Suc*** This indicates the number of successful calls.

  - ***Time (min)*** This indicates the total amount of time (in minutes) used by networking calls to the specified remote site.

- ***Failures*** A failure refers to a single unsuccessful attempt to send a networking message. Networking will attempt to send these messages the next time it is scheduled to send messages to the remote site. If a message experiences many failures, and is not delivered within a certain period of time, it will be reported in the *Failed to send* field.

  - ***No Res*** (no resources) This failure means that the modems or voice ports could not be accessed by Networking to send these messages to the remote site.
  - ***Not Reach*** (not reachable) This failure means that the remote site could not be accessed.
  - ***Prot Error*** (protocol error) This failure means that the connection was made to the remote site, but message delivery was prevented by a protocol error.

Report analysis

This report provides a detailed breakdown of the proprietary networking usage on the system. While viewing the reports, consider the following:

- If the number of NDNs delivered or the number of "Failed to Send" messages is high, there may be a problem with your networking setup.

  See the *Networking Installation* guide (NTP 555-7001-214) for details on the proper setup of the networking feature.

- If the number of urgent networking messages sent is high compared to the number of standard or economy messages, the networking feature may be tieing up channels.

  If this is a problem, you may want to change the networking parameters. See the *Networking Services Administration Guide* (NTP 555-7001-335) for details on changing networking parameters.

- The number of "Failed to Send" messages should be the same as the number of NDNs delivered.

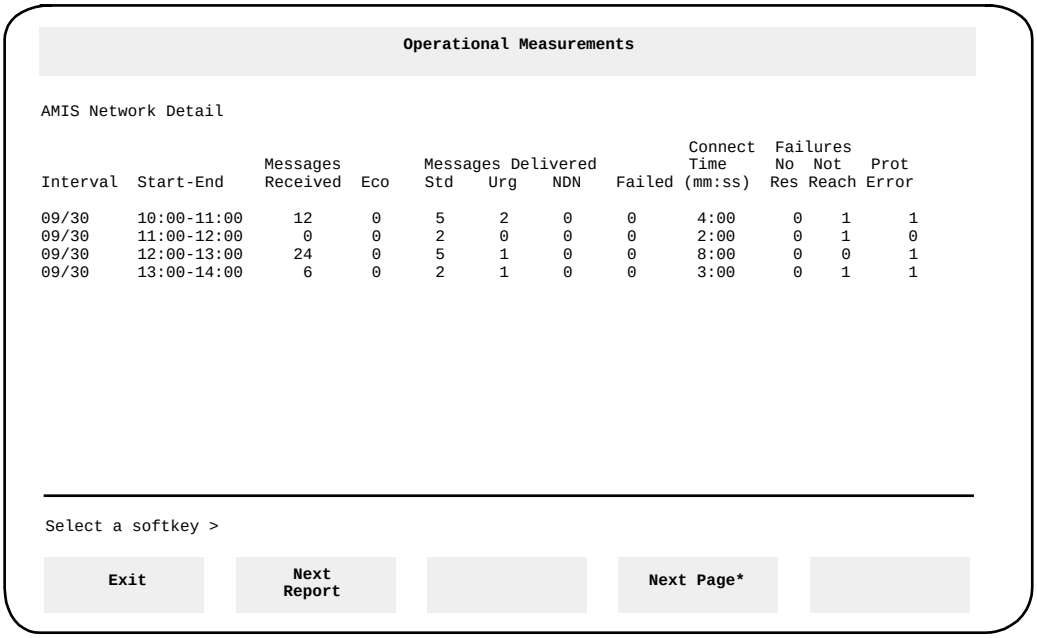
  If the number of "Failed to Send" messages is higher than the number of NDNs delivered, then the system may not be always informing users that their messages were not delivered. If this happens, there may be a problem with your system.

For a proper analysis of this report, have a diagram or the network in front of you to refer to.

AMIS Networking Detail

This report is available only on systems with AMIS Networking capability. The AMIS Network Detail report (Figure 13-9) displays traffic totals for your site. Statistics are shown for the number of AMIS messages received at your site and delivered to other sites, the connect time, and the number of failures for each time interval displayed in the report.

Figure 13-9
The AMIS Network Detail report



Operational Measurements

AMIS Network Detail

Interval	Start-End	Messages Received	Eco	Messages Delivered Std	Urg	NDN	Failed	Connect Time (mm:ss)	Failures No Res	Not Reach	Prot Error
09/30	10:00-11:00	12	0	5	2	0	0	4:00	0	1	1
09/30	11:00-12:00	0	0	2	0	0	0	2:00	0	1	0
09/30	12:00-13:00	24	0	5	1	0	0	8:00	0	0	1
09/30	13:00-14:00	6	0	2	1	0	0	3:00	0	1	1

Select a softkey >

Exit | **Next Report** | | **Next Page*** |

* The Next Page softkey appears when the information fills more than one screen.

The following fields are displayed:

- ***Interval Start-End*** Data is divided into intervals. The length of the interval depends on the entry made in the *Traffic Commit Interval* field in the Operational Measurement Options screen. The number of intervals displayed depends on the entries made in the *Traffic Period Start* and *Traffic Period End* fields in the Operational Measurement Options screen. For example, if data is collected 24 hours a day (from 01:00 to 01:00), and the commit interval is one hour, the report will divide the data into 24 intervals for each day included in the report. The amount of data displayed in this report depends on the *Report Start* and *Report End* entries that were made in the Traffic Reports screen. If no report start and end dates and times were given, all data currently stored on disk are displayed.
- ***Messages Received*** This field indicates the number of AMIS messages that were received at the local site during the time interval indicated.
- ***Messages Delivered*** This field indicates the number of AMIS messages (originating from the local site) that were delivered to other voice messaging systems during the interval indicated. This statistic is further subdivided according to the type of message.
  - ***Eco*** This indicates the number of messages, tagged as economy, that were delivered to other AMIS sites during the specified interval.
  - ***Std*** This indicates the number of messages, tagged as standard, that were delivered to other AMIS sites during the specified interval.
  - ***Urg*** This indicates the number of messages, tagged as urgent, that were delivered to other AMIS sites during the specified interval.
  - ***NDN*** (Non-delivery Notification) This indicates the number of NDN messages sent by the system during the specified interval.
  - ***Failed*** This indicates the number of unsent messages. These messages experienced a series of failures and could not be sent before the timeout period.

- ***Connect Time (mm:ss)*** This number indicates the total amount of time (in minutes) used by AMIS Networking calls during the time interval indicated.
- ***Failures*** This indicates the number of AMIS messages that were not successfully delivered to other AMIS sites due to specific resource problems. This statistic is further subdivided into the types of problems that may prevent messages from being delivered:
  - ***No Res*** (No resources) This means that a modem or voice port could not be accessed to send these messages to another AMIS site.
  - ***Not Reach*** (Not reachable) This means that the remote AMIS site could not be accessed.
  - ***Prot Error*** (protocol error) This means that the connection was made to the remote AMIS site, but message delivery was prevented by a protocol error.

Report analysis

This report provides a detailed breakdown of the AMIS Networking usage on the system. While viewing the reports, consider the following:

- If the number of NDNs delivered or the number of "Failed to Send" messages is high, there may be a problem with your networking setup.

  See the *Networking Installation* guide (NTP 555-7001-214) for details on the proper setup of the networking feature.
- If the number of urgent networking messages sent is high compared to the number of standard or economy messages, the networking feature may be tieing up channels.

  If this is a problem, you may want to change the networking parameters. See the *Networking Services Administration Guide* (NTP 555-7001-335) for details on changing networking parameters.
- The number of "Failed to Send" messages should be the same as the number of NDNs delivered.

  If the number of "Failed to Send" messages is higher than the number of NDNs delivered, then the system may not be always informing users that their messages were not delivered. If this happens, there may be a problem with your system.

For a proper analysis of this report, have a diagram of the network in front of you to refer to.

Outcalling Detail

This report is available only if Outcalling is installed on your system. The Outcalling report details outcalling activity for the remote notification and delivery to non-users services (Figure 13-10).

Figure 13-10
The Outcalling Detail report

Operational Measurements

Outcalling Detail (Remote Notification and Delivery to Non-User)

		Number of New Requests		Number of Attempts New Request		Retries		Number of Successes		Wait Time	
Interval	Start-End	RN	DNU	RN	DNU	RN	DNU	RN	DNU	Avg (sec)	Max (sec)
2/08	13:00-14:00	0	0	0	0	0	0	0	0	0	0
2/08	14:00-15:00	1	0	1	0	0	0	1	0	259	259
2/08	15:00-16:00	4	0	1	0	0	0	0	0	0	0
2/08	16:00-17:00	1	1	0	1	0	0	0	0	0	0

Select a softkey >

Exit | **Next Report** | | **Next Page*** |

* The Next Page softkey appears when the information fills more than one screen.

The report displays the following fields:

- ***Interval Start-End*** Data is divided into intervals. The length of the interval depends on the entry made in the *Traffic Commit Interval* field in the Operational Measurement Options screen. The number of intervals displayed depends on the entries made in the *Traffic Period Start* and *Traffic Period End* fields in the Operational Measurement Options screen. For example, if data is collected 24 hours a day (from 01:00 to 01:00), and the commit interval is one hour, the report will divide the data into 24 intervals for each day included in the report.

  The amount of data displayed in this report depends on the *Report Start* and *Report End* entries that were made in the Traffic Reports screen. If no report start and end dates and times were given, all data currently stored on disk are displayed.

- ***Number of New Requests*** This field indicates the total number of new requests that were made for outcalling services during the interval.

  - ***RN*** This indicates the number of new requests for the remote notification service.
  - ***DNU*** This indicates the number of new requests for the delivery to non-user service.

- ***Number of Attempts*** This indicates the total number of remote notification and delivery to non-user attempts made during the interval.

  - ***New Requests*** This number represents the number of attempts that have been made to answer the new requests for RN and DNU. If the number of attempts does not equal the *Number of New Requests* (see the previous field), the system is not keeping up with outcalling requests and more channels may need to be allocated to outcalling.
  - ***Retries*** This number represents the number of times that the remote notification and delivery to non-users services have retried calls because one of the following occurred at the destination number:
    - the number was busy (RN and DNU)
    - there was no answer (RN and DNU)
    - the phone or pager was answered but no messages were retrieved (RN)

- the required DTMF confirmation was not given (DNU)

- ***Number of Successes*** This indicates the number of successful remote notifications and messages successfully delivered to non-users that have occurred during the interval.

  RN successes are measured in terms of user login. In other words, an RN call is considered successful if the user logs on to his or her mailbox when the notification is received (on the same call as the notification). If the user receives the notification, hangs up and then logs into his or her mailbox, this is not counted as a success since the user terminated the notification call without logging in.

  Note: For remote notification to a pager, RN calls are never counted as successful in reports because the paging service cannot log on to the mailbox. A better measure of the effectiveness of RNs to pagers is to compare the number of RN retries to RN attempts. However, bear in mind that an RN retry does not necessarily mean the RN attempt to the paging service failed, it only signifies that the user did not log on within the retry interval.

  A DNU call is considered successful if the called party answers the call (and DTMF confirmation is given if required).

- ***Wait Time*** These values are an indication of how long it takes for the outcalling agent to acquire a channel to outcall to the specified DN.

  - ***Avg (sec):*** This is the average amount of time, based on all outcalling attempts made during the interval, that it took the outcalling agent to acquire the resources necessary to make the outcall.

  - ***Max (sec):*** This number represents the outcalling attempt that took the longest amount of time to acquire the resources necessary to make the outcall.

Report analysis

In the sample report, there is minimal use of the outcalling features. There could be several reasons for this, including

- The users do not know how to use the service.

  If so, train all outcalling users on how to use the service.

- The users are unaware that the service exists.

  If so, inform the users of the service and provide training if necessary.

- The users don't need to use the service.

  Consult the users to determine if they really do not need the service. Delete the service from the mailbox of those users who confirm that they do not need the outcalling service.

- There is a technical problem with the service.

  Have the problem investigated and fixed.

If the number of retries is high, the reason may be one of the following:

- The destination number was busy.
- There was no answer at the destination.
- The user at the destination answered the call but did not retrieve the message.

If users are consistently not retrieving messages, the users may not be aware of how to properly use the outcalling service; or there could be a technical problem preventing users from retrieving the messages. Consult the users to find out if the problem is with the system, or with the users.

The number of new attempts should equal the number of new requests. If the number of new requests is greater than the number of new attempts, then the system is not keeping up with the demand for outcalling RN or DNU. The system may need more channels.

If the wait time is high, this also indicates a need for more channels. The wait time indicates how long the outcalling agent has to wait for a free channel.

The number of successes should equal the number of attempts. If the numbers are not equal, then:

- There may be a problem with the destination phone/pager.
- Although Meridian Mail may not have any outcalling restrictions, the switch might.

  For example, long distance dialing may be restricted.

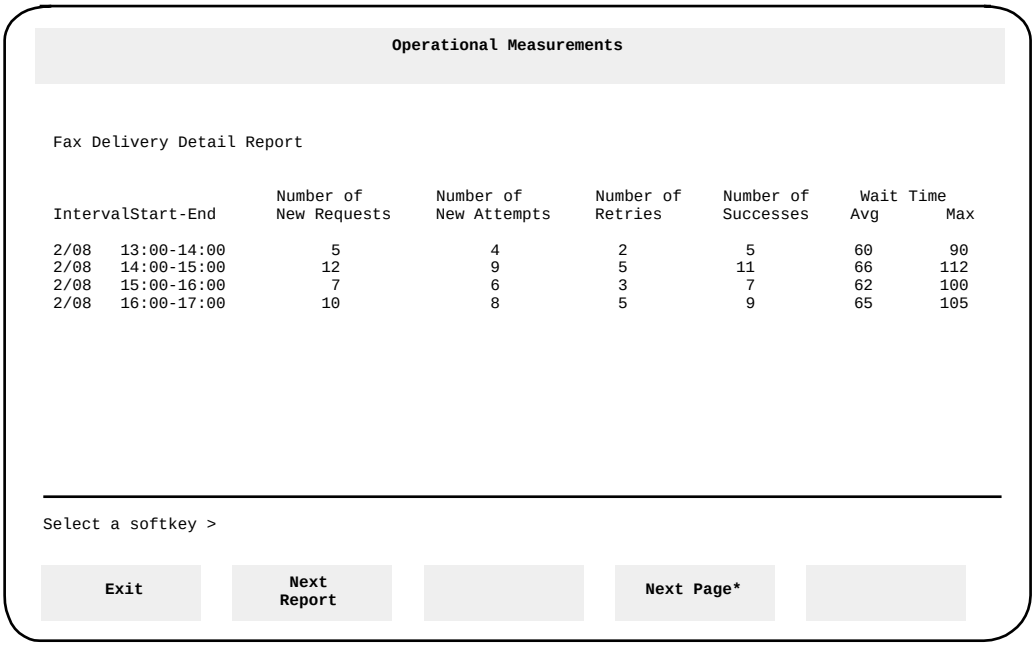
- The outcalling feature may have been set up incorrectly by either the administrator or the user.
- If the channels were tied up for a long time, the retry timeouts may have expired.

  If the wait times are high, then this is probably what happened. You may need to dedicate channels to outcalling (or increase the number of channels dedicated to outcalling).

Fax Delivery Detail

This report is available only if Fax on Demand is installed on your system. The Fax Delivery Detail report details activity for the fax services (Figure 13-11).

Figure 13-11
The Fax Delivery Detail report



Operational Measurements

Fax Delivery Detail Report

Interval	Start-End	Number of New Requests	Number of New Attempts	Number of Retries	Number of Successes	Wait Time Avg	Wait Time Max
2/08	13:00-14:00	5	4	2	5	60	90
2/08	14:00-15:00	12	9	5	11	66	112
2/08	15:00-16:00	7	6	3	7	62	100
2/08	16:00-17:00	10	8	5	9	65	105

Select a softkey >

Exit | Next Report | | Next Page* |

* The Next Page softkey appears when the information fills more than one screen.

The report displays the following fields:

- ***Interval Start-End*** Data is divided into intervals. The length of the interval depends on the entry made in the *Traffic Commit Interval* field in the Operational Measurement Options screen. The number of intervals displayed depends on the entries made in the *Traffic Period Start* and *Traffic Period End* fields in the Operational Measurement Options screen. For example, if data is collected 24 hours a day (from 01:00 to 01:00), and the commit interval is one hour, the report will divide the data into 24 intervals for each day included in the report.

  The amount of data displayed in this report depends on the *Report Start* and *Report End* entries that were made in the Traffic Reports screen. If no report start and end dates and times were given, all data currently stored on disk are displayed.
- ***Number of New Requests*** This indicates the total number of new requests that were made for the Fax Call Back services during the interval.
- ***Number of New Attempts*** This indicates the number of attempts made to process new requests for Fax Call Back services during the interval.
- ***Number of Retries*** This indicates the number of attempts made to process old requests for Fax Call Back services during the interval because one of the following occurred at the destination number:
  - The number was busy.
  - There was no answer.
  - The fax was not received at the destination.
- ***Number of Successes*** This indicates the number of successful Fax Call Backs during the interval.
- ***Wait Time (Avg)*** This indicates the average amount of time, based on all Fax Call Back attempts made during the interval, that the Fax outcalling agent (FOC) needed to acquire the resources necessary to make the call.
- ***Wait Time (Max)*** This number represents the Fax Call Back attempt that took the longest amount of time during the interval to acquire the resources necessary to make the call.

Report analysis

If there is minimal use of the fax outcalling features, there could be several reasons for this, including

- The users do not know how to use the service.

  If so, train all fax outcalling users on how to use the service.

- The users are unaware that the service exists.

  If so, inform the users of the service and provide training if necessary.

- There's a technical problem with the service.

  Have the problem investigated and fixed.

If the number of retries is high, the reason may be one of the following:

- The destination number was busy.
- There was no answer at the destination.
- A transmit error prevented the fax from being received.

The number of new attempts should equal the number of new requests. If the number of new requests is greater than the number of new attempts, then the system is not keeping up with the demand for fax outcalling. The system may need more multimedia channels.

If the wait time is high, this also indicates a need for more channels. The wait time indicates how long the fax outcalling agent has to wait for a free channel.

The number of successes should equal the number of attempts. If the numbers are not equal, then

- There may be a problem with the destination fax device.
- Although Meridian Mail may not have any outcalling restrictions, the switch might.

  For example, long distance dialing may be restricted.

- The fax outcalling feature may have been set up incorrectly by either the administrator or the user.
- If the channels were tied up for a long time, the retry timeouts may have expired.

If the wait times are high, then this is probably what happened. You may need to dedicate channels to fax outcalling (or increase the number of channels dedicated to fax outcalling).

Disk Usage Detail report

The Disk Usage Detail report provides information on disk space usage on the voice storage volumes (Figure 13-12).

Figure 13-12
The Disk Usage Detail report

Operational Measurements

Disk Usage Detail

IntervalStart-End	Volume Name	Voice Volume Size (hh:mm)	Voice Space Used (%)	Text Space Used (%)
09/30 10:00-11:00	VS1	1;51	33	47
	VS202	33:15	33	17
	VS203	25:45	10	30
	VS204	25:45	10	30
09/30 11:00-12:00	VS1	1:51	33	47
	VS202	33:15	33	17
	VS203	25:45	10	30
	VS204	25:45	10	30
09/30 12:00-13:00	VS1	1:51	33	47

Select a softkey >

Exit	Next Report		Next Page*	

* The Next Page softkey appears when the information fills more than one screen.

The following fields are displayed:

- ***Interval Start-End*** Data is divided into intervals. The length of the interval depends on the entry made in the *Traffic Commit Interval* field in the Operational Measurement Options screen. The number of intervals displayed depends on the entries made in the *Traffic Period Start* and *Traffic Period End* fields in the Operational Measurement Options screen. For example, if data is collected 24 hours a day (from 01:00 to 01:00), and the commit interval is one hour, the report will divide the data into 24 intervals for each day included in the report.

  The amount of data displayed in this report depends on the *Report Start* and *Report End* entries that were made in the Traffic Reports screen. If no report start and end dates and times were given, all data currently stored on disk are displayed.

- ***Volume Name*** This shows the name of the user volume (for example, VS2, VS202, VS203, and so on). Volumes are sections on Meridian Mail disks.

- ***Voice Volume Size (hh:mm)*** This shows the amount of disk space that has been used. This is displayed in hours and minutes. One hour of voice storage is equivalent to 8.5 megabytes.

- ***Voice Space Used (%)*** This indicates the percentage of disk space used at the end of the interval.

- ***Text Space Used (%)*** This indicates the percentage of disk space used at the end of the interval.

Report analysis

The voice space used will fluctuate, especially if your system has an automatic read-message deletion feature enabled. However, if the voice space used percentage is consistently over your disk usage warning level, then steps should be taken to reduce the amount of voice space used.

As the system administrator, you can reduce the voice space used by deleting unnecessary mailboxes and ensuring that distribution lists are up to date. If these unnecessary or unused mailboxes are on distribution lists, they may be storing messages sent using outdated distribution lists. With no one logging on to delete the messages, the messages continue to accumulate and use up more disk space. You can also encourage users to delete their messages more frequently, or even reduce the allowable maximum message length (see the "Voice administration" chapter).

To lower voice space used, you can also review all voice menus, voice forms, and voice announcements to see if their size can be reduced. For example, unused menu items can be removed. You can also consult the user usage reports to identify users with excessive storage. This might happen if a user stops accessing his or her mailbox (for example, if the user is on vacation), but callers continue to leave messages.

If voice space used is high on some volumes but low on others, you may need to move high-usage subscribers to low usage volumes in order to balance system resources. If the voice space used on all volumes is high, you may need to expand your system.

> ***Note:*** If the system generates a SEER 1103, print this Disk Usage report immediately. This SEER indicates that your system has reached physical or virtual capacity. Check that the nightly audit is functioning. Remove files on the volume in question. If the operation involved VS1, remove directory entries or OM files. The effect of corrective actions may be delayed until the night audit is run. Consider redistributing users on multiple nodes, turning on automatic message deletion, or buying a storage upgrade.

Text space used should not fluctuate greatly day-to-day, although it will vary over time. Any large fluctuations or significant steady increases in the text space used should be reported to your technical support organization.

User Usage reports

The User Usage report provides statistics for local voice messaging usage on a per-user basis. If AMIS Networking or Meridian Networking is installed, then the report also displays users' daily networking activity. Fill in the User Usage report screen (Figure 13-13) to specify the criteria by which data is to be retrieved in the report.

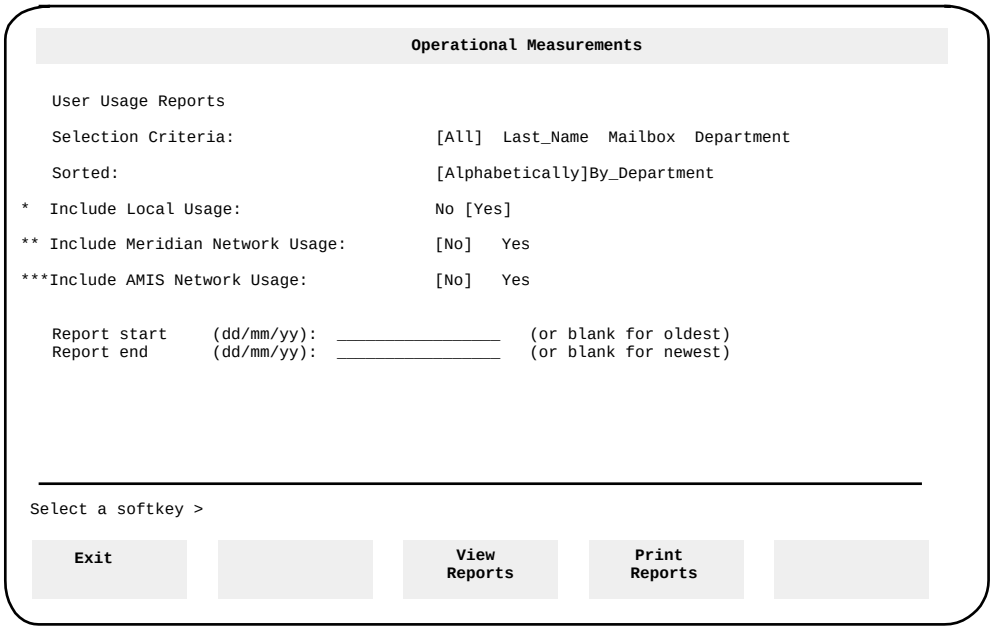
> ***Note:*** Check the Operational Measurement Options screen to make sure that the collection of user usage data is enabled.

The following fields are displayed:

- ***Selection Criteria*** The options that are offered represent search parameters. Any statistics matching your selection will be displayed in the report. Your choices are
  - ***All*** User usage data for all local users will be displayed in the report.

- ***Last_Name*** When this option is selected, you are prompted for the last name of the subscriber whose data you want to view. If the last name is not found, use the Find Users feature in User Administration to verify that the name exists in the system. You may use wildcard characters ("+", "?," or "_") to retrieve a group of users.

Figure 13-13
The User Usage Reports screen



* Appears only if Meridian Networking or AMIS Networking is installed.
** Appears only if Meridian Networking is installed.
*** Appears only if AMIS Networking is installed.

- ***Mailbox*** When this option is selected, you are prompted for the mailbox number of the user whose data you want to view. You may use wildcard characters ("+" or "_") to retrieve a range of mailboxes. If the mailbox number is not found, use the Find Users feature in User Administration to verify that the mailbox number exists in the system.

- ***Department*** When this option is selected, you are prompted for a department name. All users associated with that department will be displayed in the report. The entry you make must correspond to an existing entry in the system. You may use wildcard characters ("+," "?," or "_") to retrieve a group of departments.

  Note: When searching by department, users with blank department fields will not be displayed.

- ***Sorted*** If your selection criteria is "All Users," you can choose to sort the user data alphabetically, according to user names, or according to department names.

  Note: When sorting by department, users with blank department fields will not be displayed.

- ***Include Local Usage*** This field is displayed if Meridian Mail Networking and/or AMIS Networking are enabled. (If networking is not installed, the report only displays local usage.) When this field is set to "Yes," the report will include user usage data for local voice messaging. This includes information about the number of express messaging and logon sessions the user had during the specified interval, the number of messages that were created during the express messaging and logon sessions and the total length of those messages, the amount of time that the user was connected to Meridian Mail, and the amount of disk space used by those messages. The default is "Yes."

- ***Include Meridian Network Usage*** This field is displayed if Meridian Mail networking is enabled. When this field is set to "Yes," the report will include user usage data for Meridian networking activity. This information includes the number of economy, standard and urgent messages that user created during the specified interval as well as the total length of the messages created (for each of the three types of messages). The default is No.

- ***Include AMIS Network Usage*** This field is displayed if AMIS Networking is enabled. When this field is set to "Yes," the report will include user usage data for AMIS Networking activity. This information includes the number of economy, standard, and urgent messages that users created during the specified interval as well as the total length of the messages created (for each of the three types of messages). The default is No.

- ***Report start (dd/mm/yy)*** This is the date on which the selected reports are to start. If *Report Start* predates the earliest available date, the report starts with the earliest available date. Leave this field blank to retrieve reports for the earliest available data.
- ***Report end (dd/mm/yy)*** This is the date on which the selected reports are to end. If *Report End* exceeds the latest available period, the report ends with the last available period. Leave this field blank to report on the most recent data.

Procedure 13-4
Viewing User Usage Reports

Starting point: The Operational Measurements main menu screen, User Usage Reports, selected

The User Usage Reports screen is displayed (Figure 13-13).

1 Choose the selection criteria by which you want to retrieve data.

2 If the selection criteria is "All" select how you want the data to be sorted: alphabetically (by user name) or by department name.

3 Select the type of data you want to view: local usage, Meridian Networking or AMIS Network usage. You can select all three if required.

4 If you wish to specify a start and stop time for the reporting period, enter the required values in the *Report Start* and *Report End* fields.

5 Choose step 5a to view the reports, 5b to print the reports, or 5c to exit or cancel.

a. Use [View Reports].

The selected report screens are displayed (see the following pages for descriptions of each report).

Use [Next Page] to view subsequent pages of the report; use [Exit] to return to the User Usage Reports screen.

b. Use [Print Reports].

You are prompted to make sure your printer is ready and on-line.

Use [Continue Printing] to print the reports, or use [Cancel Printing] at any time to cancel printing. There may be some delay before control is returned to the screen because it waits for the printer to stop printing.

c. Use [Exit].

The Operational Measurements menu is redisplayed.

Viewing user usage reports

When you view the report on the terminal or from a printout, the data is arranged as shown in Figure 13-14. This figure shows all types of user usage data (local, Meridian Networking, and AMIS Networking).

Figure 13-14
The Voice Messaging User Usage report

```
                                User Usage Reports

Last Name    First Name      Department      Mailbox               COS
Smith        David           T20             2255                   1

Local Usage:
          Number of          Connect      Number of       Message      Disk
          Sessions           Time         Messages        Length       Used
Date      EM/Ans Logon       (mm:ss)    EM/AnsLogon       (mm:ss)      (mm:ss)
02/12/90   10     4          4:00          9     2         6:30         4:30
02/13/90    8     3          3:12          8     3        12:35         5:30
-------------------------------------------------------------------------
Total      18     7          7:12         17     5        19:05


Meridian Networking Usage:
          Number of    Total     Number of    Total     Number of    Total
          Economy      Length    Standard     Length    Urgent       Length
Date      Messages     (mm:ss)   Messages     (mm:ss)   Messages     (mm:ss)
02/12/90   12          4:12          10        2:30         6         4:10
02/13/90    8          2:23           7       11:40         0         0:00
          ------------------------  ---------------------- -----------------
Total      20          6:35          17       14:10         6         4:10


AMIS Networking Usage:
          Number of    Total     Number of    Total     Number of    Total
          Economy      Length    Standard     Length    Urgent       Length
Date      Messages     (mm:ss)    Messages    (mm:ss)   Messages     (mm:ss)
02/12/90   10          3:10           1        1:30         0         0:00
02/13/90   10          1:20           7        5:10         0         0:00
          ------------------------  ---------------------- -----------------
Total      20          4:30           8        6:40         0         0:00


-------------------------------------------------------------------------------
Last Name        First Name       Department       Mailbox          COS
Roeg             Nick             Marketing        2929             1

Local Usage:
          Number of          Connect      Number of       Message      Disk
          Sessions           Time         Messages        Length       Used
Date      EM/Ans Logon       (mm:ss)    EM/AnsLogon       (mm:ss)      (mm:ss)
02/12/90    2     1          1:35          2     0         3:12         2:10

 Select a softkey >

     Exit                                                  Next Page*
```

* The Next Page softkey appears when the information fills more than one screen.

The following fields appear:

- ***Last Name*** This field indicates the user's last name.
- ***First Name*** This field indicates the user's first name.
- ***Department*** This field indicates the user's department name.
- ***Mailbox*** This field indicates the user's mailbox number.
- ***COS*** This field indicates the class of service number assigned to the user.

The following fields appear for Local Usage:

- ***Date*** This field indicates the date of the reporting interval.
- ***Number of Sessions*** This is the number of express messaging, call answering, and logon sessions that occurred during the interval. To check the number of messages that were actually received or created during these sessions, check the *Number of Messages* field.
  - ***EM/Ans*** This display refers to the total number of sessions created by express messaging or call answering calls to this mailbox. The number of abandoned calls (where no message is left) can be calculated by subtracting the Number of EM/Ans Messages from the Number of EM/Ans Sessions.
  - ***Logon*** This display refers to the number of times the user logged into the mailbox for any reason.

  If the number of logons is zero, you might want to check the *Time of Last Logon* field in the View/Modify Local Voice User screen. If a considerable amount of time has passed since the last successful logon, you may want to contact the user to see if he or she is having any problems logging on. For example, the user may not know how to log on and retrieve messages (especially if this is a new user) or the user may have forgotten the mailbox password and has stopped trying to log on.
- ***Connect Time (mm:ss)*** This is the length of time that the user was connected to the Voice Messaging service on the given date.

- ***Number of Messages*** This is the number of messages that the user received and created on the given date.
  - ***EM/Ans*** This display refers to the number of messages left in the user's mailbox by both the Express Messaging and Call Answering services. The number of abandoned calls (where no message is left) can be calculated by subtracting the Number of EM/Ans Messages from the Number of EM/Ans Sessions.
  - ***Logon*** This display refers to the number of messages that the user created on the report date.
- ***Message Length (mm:ss)*** This is the total time (in minutes and seconds) of all call answering messages received and messages created by the user or deposited in the user's mailbox on the given date.
- ***Disk Used (mm:ss)*** This is the amount of storage used by the user (measured in minutes and seconds) on the given date. This includes storage for greetings and personal verifications (spoken name recordings).

The following fields appear for Meridian and AMIS Networking usage:

- ***Date*** This field indicates the date of the reporting interval.
- ***Number of Economy Messages*** This field indicates the number of economy messages that the user created on the given date.
- ***Total Length (mm:ss)*** This field indicates the total length (in minutes and seconds) of all networking messages created by the user on the given date and tagged as economy.
- ***Number of Standard Messages*** This field indicates the number of standard messages that the user created on the given date.
- ***Total Length (mm:ss)*** This field indicates the total length (in minutes and seconds) of all networking messages created by the user on the given date and tagged as standard.
- ***Number of Urgent Messages*** This field indicates the number of urgent messages that the user created on the given date.
- ***Total Length (mm:ss)*** This field indicates the total length (in minutes and seconds) of all networking messages created by the user on the given date and tagged as urgent.

Report analysis

If the EM/Ans numbers are high and the logon count is low, the user may be accumulating too many messages before checking the mailbox and thereby contributing to a low disk space problem. If disk space is already low (see the Disk Usage Detail report), you may need to make the user more aware of the importance of not accumulating messages.

If disk space is low, also monitor the length of messages closely. If messages are too long for some users, you may wish to shorten their storage limit to encourage the users to empty their mailboxes more frequently (see the "User Administration" chapter). You can also alter the maximum message length parameter (see the "Class of Service Administration" chapter) to deter callers from leaving long messages.

Collecting outcalling audit trail data

Outcalling audit trail statistics allow you to monitor how users are using the remote notification and delivery to non-user features. There are two outcalling audit trail reports that you can generate: a summary report and a detail report. Each report provides outcalling data for a certain period of time (as specified by you).

The summary report provides the following information:

- the user’s name
- the user’s mailbox number
- the type of call (DNU or RN)
- the call status (such as answered or busy)

The detail report provides the following information:

- the user’s name
- the user’s mailbox number
- the time at which the transaction started
- the duration of the transaction
- the specific outcall process
- the device (pager, phone, pager service) and the target number
- the channel DN of the channel that was used to place the outcall

- the number of retries

Enable the collection of outcalling audit trail data

Audit trail data collection is enabled in the Operational Measurement Options screen (Figure 13-15). There are two other parameters that you will have to specify in this screen. Follow procedure 13-5.

Identify how many days audit trail data should be stored

The *Number of Days of Audit Data Stored* field determines how long the collected audit trail data will be stored on disk before being overwritten. The number of days can range from 1 to 63. The default is 7.

Identify when collection of audit data should stop if the volume is almost full

This is a volume management parameter which will help you keep the volume on which audit trail data is stored from becoming completely full. Identify the percentage at which you want the collection of audit trail data to stop. For example, if the *Shutdown Audit Trail at Volume Full (%)* field is set to 80%, and the volume on which audit data is stored reaches 80% capacity, audit trail data collection will be disabled. If this number is set to 100%, collection of data will not stop until the volume is completely full. This is not recommended. (Note that this is a percentage of text space, not voice space.)

The default is 85%.

Procedure 13-5
Enabling audit trail data collection

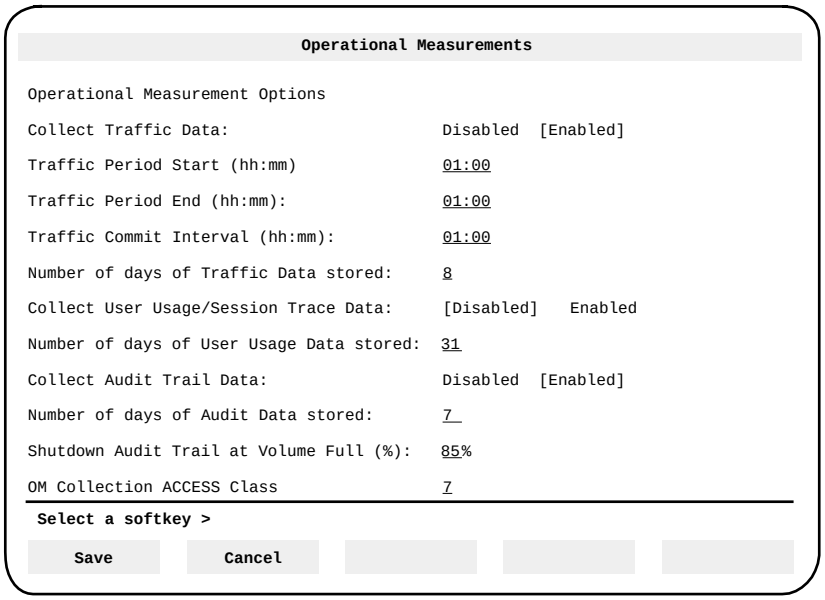
Starting point: The Main Menu.

1 Select Operational Measurements.

2 Select Operational Measurement Options.

The Operational Measurement Options screen is displayed. Three fields on the screen (Collect Audit T rail Data, Number of days of Audit Data stored, and Shutdown Audit T rail at Volume) are used to enable audit trail data collection.

Figure 13-15
The Operational Measurement Options screen



3 Set the field *Collect Audit Trail Data* to "Enabled" if currently disabled ("Enabled" is the default.)

4 Specify the number of days that audit trail data should be stored on disk.

Note: Detailed field descriptions are provided on the preceding pages.

5 In the *Shutdown Audit Trail at Volume Full (%)* field, enter the percent full at which collection of audit trail data should stop.

The default is 85%.

6 To save the current configuration, go to step 6a. To exit without saving, go to step 6b.

a. Press [Save].

The outcalling data is saved and you are returned to the Operational Measurements menu.

b. Press [Cancel].

Any changes you have made are not saved and you are returned to the Operational Measurements menu.

Generating an Outcalling Audit Trail Report

The Outcalling Audit Trail Report screen (Figure 13-16) is accessed from the Operational Measurements menu. This is a report selection screen in which you specify the type of report you want to retrieve (summary or detail) as well as the duration of the report period.

The summary report shows each outcall (RN or DNU) that was made during the reporting interval along with the user that made the call, the user's mailbox number, the target number and the status of the call. It shows only completed (answered) calls.

The detail report provides a more thorough account of each outcall request, including the start time and duration of the call, the DN of the channel that was used to place the call and the number of retries (if any). It shows all outcalls, both successfully completed and unsuccessful.

You must specify whether you want to generate a report for a particular user, mailbox number, phone number, or all. You can either generate a report that includes all of the information currently stored on disk for that user (mailbox number or phone number) or generate a shorter report for a specific time period. The report can either be viewed on your terminal or printed.

Procedure 13-6
Generating an outcalling audit trail report

Note: Field descriptions are provided on page 13-59.

1. Select Operational Measurements.
2. Select Outcalling Audit Trail Report.

   The Outcalling Audit Trail Report screen (Figure 13-16) is displayed.
3. Specify the report type (summary or detail).
4. Specify the selection criteria (name, mailbox, target phone number or all).
5. Fill in the field that corresponds to the selection criteria you chose.
6. Enter the report start and end times.

   If these fields are left blank, all outcalling data that is currently stored on disk will be retrieved.

7 Choose step 7a. to view the reports on the terminal and 7b. to print the reports

a. Press [View Reports].

The first outcalling audit trail report is displayed.

If you selected "Summary", see the section "The Summary Outcalling Audit Trail Report". If you selected "Detail", see the section "The Detail Outcalling Audit T rail Report".

b. Press [Print Reports].

You are prompted to ensure the printer is ready and on-line.

Press [Continue Printing] to print the report or [Cancel] if you do not want to print the report.

If you selected [Continue Printing], a [Cancel] softkey is displayed which can be used to cancel printing once printing has started.

There may be some delay before control is returned to the screen because it waits for the printer to stop printing.

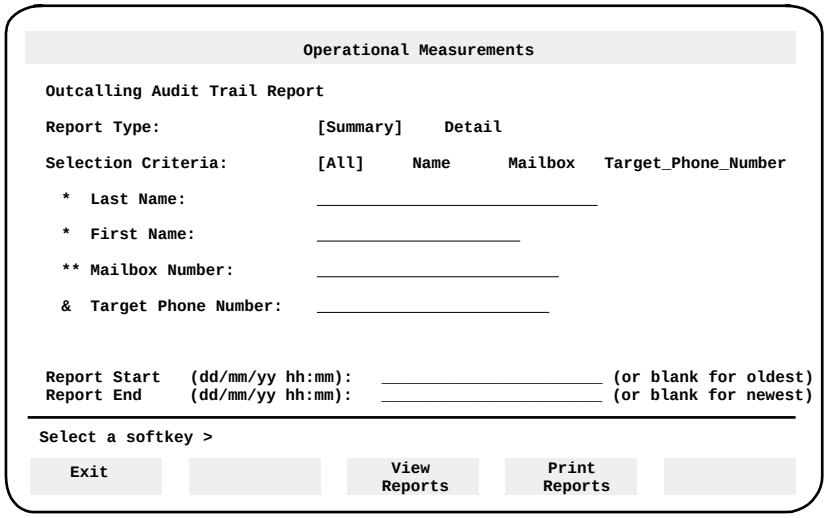
8 If you are viewing the report, press [Next Page] to view the next page of the report.

When the last page has been displayed, a prompt appears indicating it is the end of the report.

9 Press [Exit].

You are returned to the Outcalling Audit T rail Report screen.

Figure 13-16
The Outcalling Audit Trail Report



* The Name fields appear only when the Selection Criteria is "Name".
** The Mailbox field appears only when the Selection Criteria is "Mailbox".
& The Target Phone Number field appears only when the Selection Criteria is "Target_Phone_Number".

The following fields are displayed on the Outcalling Audit Trail Report screen:

- ***Report Type*** Your options are "Summary" and "Detail". A summary report shows only completed calls. A detail report shows all actions, such as "Submission", both successful and unsuccessful.
- ***Selection Criteria*** All entries in the database can be viewed or you can view data for a specific user, mailbox number, or phone number.

  Note: If NMS is installed, you may enter a mailbox number for a voice user at another location, prefixed by the appropriate location code. However, if Meridian Networking is installed, you cannot use a remote user's mailbox number as a search criterion.
- ***Last Name*** This field is displayed if *Selection Criteria* is set to "Name". If you want to view outcalling data for a particular user, enter that user's last name (and first name in the next field as there may be more than one user with the same surname). This field accepts all characters, except "+," "?," and "_" (underscore).

- ***First Name*** This field is displayed if *Selection Criteria* is set to "Name". If you want to view outcalling data for a particular user, enter that user's full first name (as well as the last name in the previous field). This field accepts all characters, except "+," "?," and "_" (underscore).
- ***Mailbox*** This field is displayed if *Selection Criteria* is set to "Mailbox". To view outcalling data for a specific mailbox, enter the full mailbox number. This field accepts numeric data only.
- ***Target Phone Number*** This field is displayed if *Selection Criteria* is set to "Target Phone Number". To view outcalling data for a particular target phone number or pager number (the number entered in the *Target DN* field in the outcalling schedule), enter the full number in this field. This field accepts numeric data only.
- ***Report Start/End*** Enter the start date and time and end date and time to indicate the reporting period.

The Summary Outcalling Audit Trail Report

The Summary Outcalling Audit Trail Report (Figure 13-17) is displayed if you selected "Summary" as the report type.

Figure 13-17
The Summary Outcalling Audit Trail Report

```
                          Operational Measurements

Outcalling Audit Trail from 01/10/90 to end of data.

Date (dd/mm/yy)
 Name            Mailbox Number
  Start   Duration  Target Phone Number           Type   Call Status
  (hh:mm) (mmm:ss)

10/01/90
 Smith, J        7550
  12:40   1:10      98292962                     DNU    Answered
  12:45   0:05      98292962                     DNU    No DTMF Conf.
  13:45   0:18      8051-345643                  RN     Answered


10/02/90
 Jones, D        7091
  8:52    0:02      8052                         RN     Answered
  8:57    0:06      8052                         RN     Disabled


 Select an item >

    Exit                                                Next Page*
```

*This softkey is displayed if data fills more than one screen.

The summary report displays the following information:

- ***Date*** This displays the date the call was made.
- ***Name*** This displays the name of the Meridian Mail user who initiated the call.
- ***Mailbox Number*** This displays the mailbox that originated the call.
- ***Start Time*** This displays the time at which the call was made.
- ***Duration*** This displays the length of the call in minutes and seconds.

- ***Target Phone Number*** This is the number called. A maximum of 30 digits can be displayed in this field. For calls placed to paging services (such as SkyPager), the PIN number is also displayed (for example, in 8051-345643, the last 6 digits are the PIN number). If the full number is longer than 30 digits, the first few digits in the paging service phone number will be truncated.
- ***Type*** This field displays the Outcalling service that was used: either remote notification or delivery to non-user.
- ***Call Status*** This field displays the result of the call.
  - ***Answered*** This display indicates that the destination number was answered and the message was heard by the called party.
  - ***RN Disabled*** This display indicates that the called party answered and pressed 3 to disable RN.
  - ***No DTMF Confirmation*** This display indicates that the called party did not press 2 to hear a DNU message (not relevant if DTMF confirmation is not required).
  - ***Not Played*** This display indicates that the called party disconnected before the DNU message was played.

The Detail Outcalling Audit Trail Report

The Detail Outcalling Audit Trail Report (Figure 13-18) is displayed if you selected "Detail" as the report type.

Figure 13-18
The Detail Outcalling Audit Trail Report

```
                              Operational Measurements

Outcalling Audit Trail from 10/10/90 to end of data.

Date (dd/mm/yy)
 Name                Mailbox Number
Transaction      Start  Duration     Device/Target Phone Number       Channel Retry
(hh:mm)          (hh:mm)(mmm:ss)                                        DN
 Request #       Outcall Process     Call Status      Outcall Action

10/02/90
 Howe G.             3000
15:10            15:10                                                      0
 #****           RN Submission                        Continue
15:10            15:10                                                      0
 #1137           RN Validation                        Continue
15:10            15:10  0:15         Phone/555-7050                2004      0
 #1137           RN Call Results     Answered         Remove, user logged in




Select a softkey >

    Exit                                                    Next
                                                            Page
```

In addition to the information displayed in the summary report, the detailed report contains the following information:

- ***Transaction Time*** This indicates the time at which the audit trail record was stored.
- ***Start Time*** This indicates the time at which the current outcall process started.
- ***Duration Time*** This indicates the length of the call.
- ***Device/Target Phone Number*** This indicates the type of device called followed by the phone/pager number. The device will be one of the following:
  - Phone
  - ToneP (tone pager)

- Voice (voice pager)
- NumPa (numeric pager)
- PaSrv (pager service)

If the device is a paging service, the paging service phone number, followed by the pager identification number (PIN) will be displayed. The maximum length for this field is 30 digits. If this limit is exceeded, the first few digits of the paging service phone number will be truncated.

- ***Channel DN*** This indicates the DN associated with the voice channel used.
- ***Retry*** This shows the number of retries that have been made at the time of the attempt. This field is incremented by one whenever
  - A DN is busy and is retried.
  - Multiple target DNs are defined and they have all been tried and either not answered or answered with no login.
- ***Transaction Request Number*** This is a unique number identifying the (RN or DNU) request.
- ***Outcall Process*** This shows the type of audit trail entry. This could be
  - ***Submission*** This type indicates that a request has been made for an Outcalling service.
  - ***Recovery*** This type indicates that messages for outcalling have been detected and submitted after a system reboot.
  - ***Cancellation*** This type indicates that during recovery, requests for outcalling have been detected, but have been cancelled since they are no longer valid.
  - ***Logout/Admin*** This type indicates that one of two conditions has occurred. The first possibility is that a user has logged out with unannounced messages left in their mailbox. Normally, if a user is listening to a message when a new message comes in, the new message is announced after the user has finished listening to the other message. However, if the user hangs up before the message has finished playing, the new message will not be announced. (In this situation, the user will continue to be notified of messages.) The second possibility is that you have modified a user's account while there were unread messages in the user's mailbox.

- ***Validation*** This type indicates a checking process just before a call was/is made.
- ***Call Results*** This type indicates information regarding the *Call Status* and *Outcall Action* in the adjacent fields to the right.

- ***Call Status*** This is a general statement of the results of a call. The possibilities are
  - ***Busy*** The RN or DNU target DN was busy. A retry attempt will be scheduled if the busy and no answer retries have not been exhausted.
  - ***Answered*** An outcall to an RN or DNU target DN was placed. The RN call was answered but the user did not log in on the same call to listen to the message. Remote notification will be rescheduled if the answered retries have not been exhausted. The DNU call was answered and the message was successfully delivered.
  - ***No Answer*** An outcall to an RN or DNU target was placed and the call was not answered. A retry attempt will be scheduled if the no answer retries have not been exhausted.
  - ***No DTMF Conf*** An outcall to a DNU target DN was placed. The call was answered but the caller did not provide the required DTMF confirmation (in other words, he or she did not press 2 to hear the message). DNU will be rescheduled if the answered retries have not been exhausted.
  - ***Reorder*** During an outcall, the target DN was dialed, and a reorder tone was detected. The primary reasons for a reorder tone are: an invalid DN was called, there were no resources to complete the call, or there were access restrictions that the DN violated. The call attempt will be treated as a busy attempt, and a retry attempt will be scheduled if the busy and no answer retries have not been exhausted.
  - ***Resource Delay*** The outcall was not completed because the line on which the call was to be made was taken away due to an incoming call which was given priority. The outgoing call is retried on a different channel. If this is a persistent problem, reserve channels for outcalling and make sure no line DNs terminate on them.

- ***Incomplete*** The outcall could not be completed. The call attempt will be treated as a busy attempt, and a retry attempt will be scheduled if the busy and no answer retries have not been exhausted. If there is an accompanying SEER, follow the action described in the *Maintenance Messages (SEERs)* guide (NTP 555-7001-510).
- ***RN Disabled*** During an RN attempt, the target DN was dialed, the call was answered and 3 was pressed to disable remote notification. There will be no further RNs for this user until the user logs into his or her mailbox.
- ***Not Played*** During a DNU attempt, the target DN was dialed, the call was answered and disconnected before DNU could play its message. If the answered retries have not been exhausted, DNU will retry using the answered retry limits and intervals.
- ***Illegal Window*** A user attempted to send a DNU message. The message became stale during an illegal time window and could not be delivered. (The stale date parameter defaults to 36 hours. If a message cannot be delivered within this time, a message becomes stale.) The user receives a non-delivery notification.
- ***Stale Date*** A user attempted to send a DNU message. The message was not delivered immediately (either because it was sent during a restricted time period or the call was not answered and was, therefore, rescheduled). The message became stale during a permitted time period and could not be delivered. (The stale date parameter defaults to 36 hours. If a message cannot be delivered within this time, a message becomes stale.) The user receives a non-delivery notification.
- ***Sit Tone*** During an outcall, the target DN was dialed, and a sit tone was detected. A sit tone is usually a series of tones followed by a voice message, indicating that this DN is invalid. This causes remote notification for this user to be turned off by disabling all of his or her remote notification schedules. The administrator or user should define a new valid DN and reenable remote notification for the user. DNU is cancelled for the message and the user receives a non-delivery notification (NDN).

- ***Bad Called DN*** During an outcall, the target DN was dialed, and a bad called DN was detected by the local switch. (In other words, the target DN is invalid for some reason.) This causes remote notification for this user to be turned off by disabling all of his or her remote notification schedules. The administrator or user should define a new valid DN and reenable remote notification for the user. DNU is cancelled for the message and the user receives a non-delivery notification (NDN).

- ***Outcall Action*** This field indicates the action performed on the request. The possibilities are
  - ***Continue*** The validation has been passed and a call attempt is to be made.
  - ***Remove, retry limit reached*** After the call, the retry was not rescheduled because the retry limit had been reached.
  - ***Remove, another RN exists*** The validation step determined that the user has logged on since the last RN attempt and the retry was cancelled.
  - ***Reset*** A problem was encountered retrieving information. Requests will be discarded and recovered from disk.
  - ***Delayed 1*** A channel could not be obtained on which to call out, and an attempt will be made later to obtain one.
  - ***Delayed 2*** A channel was obtained but it was taken away before the call was made. An attempt will be made to retry later.
  - ***Defer*** Another call attempt has been scheduled. RN calls to pagers are always rescheduled because the user may fail to receive the page. (However, if the user logs on before the next retry, the retry will be cancelled.)

Collecting fax audit trail data

Fax audit trail statistics allow you to monitor how users are using the Fax on Demand features. There are actually two fax audit trail reports that you can generate: a summary report and a detail report. Each report provides fax data for a period (as specified by you).

The summary report provides the following information:

- the name of the application

- the billing DN
- the called DN
- the call status (answered, busy, and so on)

The detailed report provides the following information:

- the name of the application
- the billing DN
- the time at which the transaction started
- the duration of the transaction
- the calling DN
- the DN of the channel that was used to place the outcall
- the number of retries
- the specific outcall process
- the call status (answered, busy, and so on)
- the outcall action (for example, transmitted)

Before you can generate a fax audit trail report, you must enable the collection of audit trail data. The following steps are necessary to enable audit trail data collection and generate a report:

1 Enable audit trail data collection.

  This is done in the Operational Measurement Options screen.

2 Specify the characteristics of the report you want to generate in the Fax Audit Trail Report screen. This includes
  - specifying the report type (summary or detail)
  - specifying whether you want to view data for a specific billing DN or called DN or for all DNs
  - specifying the period of time that the report should cover (for example, the past 3 hours, the past 2 days)

3 View or print the report and analyze it.

Generating a Fax Audit Trail Report

The Fax Audit Trail Report screen (Figure 13-19) is accessed from the Operational Measurements menu. This is a report selection screen in which you specify the type of report you want to retrieve (summary or detail) as well as the duration of the report period.

The summary report shows each fax outcall that was made during the reporting interval along with the calling DN and the status of the call. The detail report provides a more thorough account of each outcall request, including the DN of the channel that was used to place the call and the number of retries (if any).

You must specify whether you want to generate a report for a particular user, mailbox number, phone number, or all. You can either generate a report that includes all of the information currently stored on disk for that billing DN or called DN, or generate a shorter report for a specific time period. The report can either be viewed on your terminal or printed.

Procedure 13-7
Generating a fax audit trail report

Starting point: The Main Menu

1. Select Operational Measurements.
2. Select Fax Audit Trail Report.

   The Fax Audit Trail Report screen (Figure 13-19) is displayed.
3. Specify the report type (Summary or Detail).

   See the following pages for field descriptions.
4. Select the selection criteria (Billing_DN, Called DN, or All).
5. Enter the report start and end times.

   If these fields are left blank, all outcalling data that is currently stored on disk will be retrieved.
6. Use [View Reports], [Print Reports], or [Cancel] if you do not want to view reports at this point.

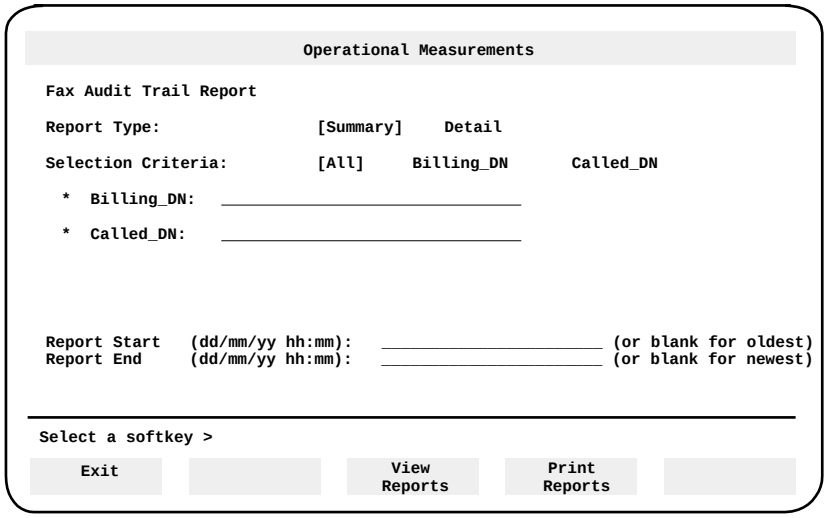
   The first fax audit trail report is displayed or printed.

   See the next section, "The Summary Fax Audit Trail Report."
7. Use [Next Page] to view the next page of the report.

   When the last page has been displayed, a prompt appears indicating it is the end of the report.
8. Use [Exit].

You are returned to the Fax Audit T rail Report screen.

Figure 13-19
The Fax Audit Trail Report



* Only one of these fields will be displayed, depending on the Selection Criteria. See the field descriptions below.

The following fields are displayed on the Fax Audit Trail Report:

- ***Report Type*** Your options are "Summary" and "Detail". The detail report displays more information.
- ***Selection Criteria*** All entries in the database can be viewed or you can view data for a specific billing DN or called DN.
- ***Billing DN*** This field limits the report to fax deliveries associated with a particular billing DN. This DN can be 0 to 31 digits.
- ***Called DN*** This field limits the report to fax deliveries associated with a particular called (destination) DN. This DN can be 0 to 31 digits.
- ***Report Start/End*** Enter the start and end date and time to indicate the period of time that should be included in the report.

Procedure 13-8
Printing the Fax Audit Trail Report

Starting point: The Main Menu

1 Select Operational Measurements.

The Operational Measurements menu appears.

2 Select Fax Audit Trail Report.

The Fax Audit Trail Report appears (Figure 13-19).

3 Change the selection criteria as desired.

4 Ensure that the printer is on-line and has paper.

5 Use [Print Reports]. (Ensure that the printer is on-line.)

A new set of softkeys are displayed: [Cancel Printing] and [Continue Printing].

6 Use [Continue Printing] to print the report or [Cancel] if you do not want to print the report.

If you selected [Continue Printing], a [Cancel] softkey is displayed which can be used to cancel printing once printing has started.

You are returned to the Operational Measurements menu.

The Summary Fax Audit Trail Report

The Summary Fax Audit Trail Report (Figure 13-20) is displayed if the report type is "Summary".

Figure 13-20
The Summary Fax Audit Trail Report

```
                          Operational Measurements

Fax Audit Trail from  9/23/93 to end of data.

Date (dd/mm/yy)
 Description          Billing DN
  Start   Duration  Called DN                Call Status
  (hh:mm) (mmm:ss)

9/23/93
 FID 2222             3656
  17:37      0:37   4018051                    No Carrier
  17:40      0:37   4018051                    Transmit Error
  17:44      2:45   4018051                    Transmitted

 Select an item >

    Exit                                                  Next Page*
```

*This softkey is displayed if data fills more than one screen.

The summary report displays the following information:

- ***Date*** This indicates the date the call was made.
- ***Description*** This indicates the name (acronym) of the application.
- ***Billing DN*** This indicates the billing DN that originated the call.
- ***Start Time*** This indicates the time at which the call was made.
- ***Duration*** This indicates the length of the call in minutes and seconds.
- ***Called DN*** This indicates this destination DN for the fax delivery.
- ***Call Status*** This indicates this field displays the result of the call.
  - ***Transmitted*** This state indicates that fax transmission completed without error.
  - ***Transmit Error*** This state indicates that the fax transmission started but was not completed successfully.

- ***No Carrier*** This state indicates that the fax transmission was not started because the call was not answered, or was answered, but not by a compatible fax device.

The Detail Fax Audit Trail Report

The Detail Fax Audit Trail Report (Figure 13-21) is displayed if the report type is "Detail".

Figure 13-21
The Detail Fax Audit Trail Report

```
                              Operational Measurements

Fax Audit Trail from  9/23/93 to end of data.

Date (dd/mm/yy)
 Description                  Billing DN
Transaction      Start  Duration     Called DN              Channel DN    Retry
(hh:mm)          (hh:mm)(mmm:ss)
 Request #       Outcall Process  Call Status     Outcall Action

9/23/93
 FID 2222                     3656
17:37            17:37                                                    0
#*****           Submission       Transmitted     Continue
17:37            17:37  0:37          4018051                2802         0
#00000           Call             No Carrier      Defer
17:40            17:40  0:37          4018051                2802         1
#00000           Call             Transmit Error  Defer
17:44            17:44  2:45          4018051                2802         2
#00000           Call             Transmitted     Remove


Select a softkey >

    Exit                                                      Next
                                                              Page
```

In addition to the information displayed in the summary report, the detailed report contains the following information:

- ***Transaction Time*** This is the time at which the delivery should have taken place.
- ***Start Time*** This is the time at which the current outcall process started.
- ***Duration Time*** This is the length of the call.
- ***Called DN*** This is the destination DN for the fax delivery.
- ***Channel DN*** This is the DN that was used to originate the call.

- ***Retry*** This is the number of retries that have been made at the time of the attempt. This field is incremented by one each time a DN is retried.
- ***Request #*** This is the number of the transaction request.
- ***Outcall Process*** This is the type of audit trail entry. This could be
  - ***Submission*** This type indicates that a request has been made for an Outcalling service.

    Instead of "Submission" you may also see "Recovery".
  - ***Recovery*** This type indicates that faxes for outcalling have been detected and submitted after a system reboot.
  - ***Validation*** This type indicates a checking process just before a call was/is made.
  - ***Call Results*** This type indicates information regarding the *Call Status* and *Outcall Action* in the adjacent fields.
- ***Call Status*** This field indicates the status of the call attempt. The possibilities are
  - ***Transmitted*** This state indicates that the fax transmission completed without error.
  - ***Transmission Error*** This state indicates that the fax transmission was started but not successfully completed.
  - ***No Carrier*** This state indicates that the fax transmission was not started because the call was not answered, or was answered, but not by a compatible fax device.
  - ***Illegal Window*** This state indicates that the fax became stale during an illegal time window and could not be delivered. (The stale date parameter defaults to 36 hours. If a message cannot be delivered within this time, a message becomes stale.)
  - ***Stale Date*** This state indicates that the fax was not delivered immediately (either because it was sent during a restricted time period or the fax was not transmitted and was, therefore, rescheduled). The fax became stale during a permitted time period and could not be delivered. (The stale date parameter defaults to 36 hours. If a fax cannot be delivered within this time, a fax becomes stale.)

- ***Bad Called DN*** This state indicates that during an outcall, the target DN was dialed, and a bad called DN was detected by the local switch. (In other words, the target DN is invalid for some reason.) The callback fax is not delivered and is removed.
- ***Resource Delay*** This state indicates that the outcall was not completed because the line on which the call was to be made was taken away due to an incoming call which was given priority. The outgoing call is retried on a different channel. If this is a persistent problem, reserve channels for outcalling and make sure no line DNs terminate on them.
- ***Incomplete*** This state indicates that the outcall could not be completed. The call attempt will be treated as a busy attempt, and a retry attempt will be scheduled if the busy and no answer retries have not been exhausted. If there is an accompanying SEER, follow the action described in the *Maintenance Messages (SEERs)* guide (NTP 555-7001-510).

- ***Outcall Action*** This field indicates the action performed on the request. The possibilities are
  - ***Continue*** This action indicates that the validation has been passed and a call attempt is to be made.
  - ***Remove, retry limit reached*** This action indicates that after the call, the retry was not rescheduled because the retry limit had been reached.
  - ***Remove*** This action indicates that the fax was successfully delivered.
  - ***Reset*** This action indicates that a problem was encountered retrieving information. Requests will be discarded and recovered from disk.
  - ***Delayed 1*** This action indicates that a channel on which to call out could not be obtained. Will retry later.
  - ***Delayed 2*** This action indicates that a channel was obtained, but it was taken away before the call was made. Will retry later.
  - ***Defer*** This action indicates that another call attempt has been scheduled.

Chapter 14: Class of service administration

Overview

A Class of Service (COS) is a template that contains information about the capabilities that a user has and the values that are assigned to specific parameters. It is essentially a method of classifying users according to their needs. When you add a user to the system, you must specify the Class of Service to which he or she belongs. This method of classifying users replaces the user models method used in previous releases.

Before adding users, you should therefore carefully consider the user types which you need to represent with COSs. The following examples will give you an idea of the kinds of COSs you can create.

For example, for a Centrex system you might need to create one COS for secretaries, one for executives, and a standard one for all other employees. If employees in certain departments are found to have different needs, you could create one for Accounting, Engineering, Administration and so on.

For a residential system you might need a Standard COS with only basic call answering features enabled, a Deluxe COS that provides additional chargeable features or a larger mailbox (in terms of storage space), a Family COS that provides users with the Family Mailbox feature, and a DialPulse COS for those users that do not have touch-tone phones. The COSs that you end up creating will depend entirely on the types of users that you will be adding to the system.

If, once you have created your COSs and added users, you realize that you need to give a particular group of users some additional capabilities, you don’t have to change each individual user. You only need to change the settings in the COS and all of the users assigned to that COS will automatically pick up the changes.

If, at some point in the future, an individual user requests additional functionality (or even reduced functionality) or greater mailbox storage capacity, you can do one of two things: reassign the user to another COS that meets his or her needs, or create a personal COS for that user (if no existing COSs are adequate). Personal COSs are described in more detail in the following section.

CAUTION
Do not perform class of service administration during nightly DR audit
At 3:30 a.m. every day, an audit of the DR directory is performed. Do not perform any class of service administration during this audit. Depending on how unbalanced the system is, this audit can take anywhere from 10 minutes (if the system has not been modified since the last audit) to 3 hours (if there have been many changes, such as a lot of users or services being added or modified).

COS types

There are two different types of COS: the system COS and the personal COS.

The system COS

Up to 15 system COSs can be defined. When adding a user, you will assign him or her to one of these COSs or to a Personal COS if necessary.

The personal COS

The personal COS is a special class. This class allows you to deal with those users who require capabilities that do not fit in with any existing COS. Mailboxes with a personal COS remain independent of changes made to other COSs.

Keep in mind, however, that as the number of personal COSs increases, the task of maintaining your classes of service and users will become more difficult since all system COSs and personal COSs will have to be managed.

In addition to the (up to) 15 system COSs, the personal COS will always be available when adding a user.

Administrator responsibility

To define and use COSs, you will

1 Select Class of Service Administration from the Main Menu.

2 Define the system COSs.

3 Return to the Main Menu.

4 Select General Administration, General Options.

The General Options screen is described in the "General administration" chapter.

5 Enter the class of service numbers in the Class of Service Selection fields to make those COSs available when creating or modifying mailboxes.

6 Add users to the system, assigning each user to a COS. This is described in the chapter "User administration."

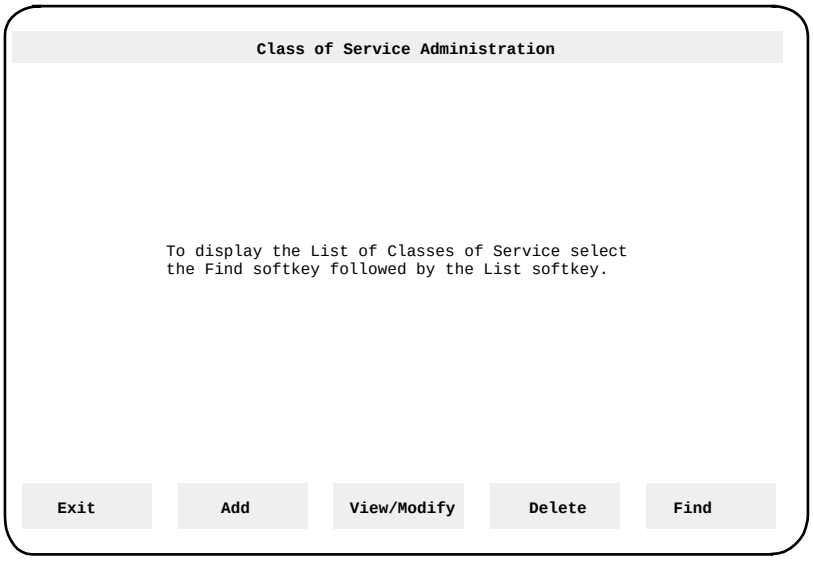
Defining classes of service

Class of Service Administration appears as the last item on the Main Menu. When selected, you will encounter a series of screens that you will use to define, modify and delete COSs.

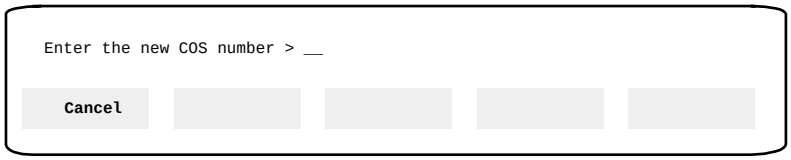
Note: If you are logged on at a Multiple Administration Terminal (MAT), the screens that are shown in this chapter are read-only. Some are not available at all (such as Add Class of Service or Delete Class of Service). Class of Service Administration is provided on MATs as a reference tool only, to assist you when adding users.

When Class of Service Administration is selected from the Main Menu, the following screen (Figure 14-1) is displayed.

Figure 14-1
The Class of Service Administration screen

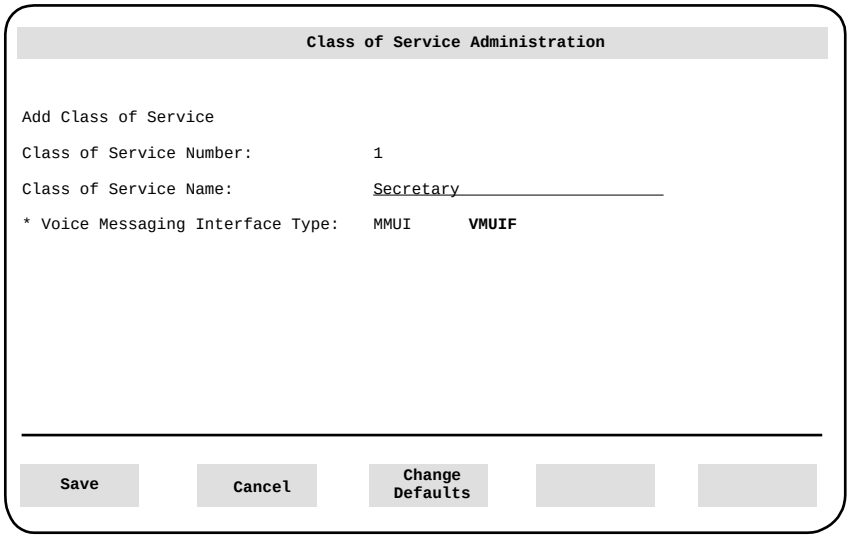


To add a Class of Service, press the [Add] softkey. You are prompted to enter the COS number.



After a valid COS number is entered (a number between 1 and 15), the Add Class of Service screen (shown in Figure 14-2) is displayed.

Figure 14-2
The Add Class of Service screen



* This field is displayed only if VMUIF is installed.

The following fields are displayed:

- ***Class of Service Number*** This is a read-only field. It is prefilled with the number you entered to access this screen.
- ***Class of Service Name*** This is the name of the class of service. This field is mandatory. The COS definition cannot be saved if this field is blank. The COS name can be up to 30 characters in length. Do not use the following characters when entering a name: "+", "_", or "?".
- ***Voice Messaging Interface Type*** This is the interface type to be used by the users belonging to this COS. This field is read-only. It will be set to the interface that is installed on the system.

Besides the fields previously described, the new COS is assigned a set of default values that can be changed by using the [Change Defaults] softkey. This step is described as part of the "Adding a class of service" procedure. (See Step 5 in Procedure 14-1.)

Procedure 14-1
Adding a class of service

Starting point: The Main Menu

1 Select Class of Service Administration.

The [Exit], [Add], [View/Modify], [Delete], and [Find] softkeys are displayed.

2 Press the [Add] softkey.

You are prompted for the class of service number .

3 Enter a number between 1 and 15.

The Add Class of Service screen is displayed.

4 Give the class of service a name.

5 To save the definition at this point with default values for the remaining COS parameters, go to step 5a. To discard the definition, go to step 5b. To continue defining the class of service, go to step 5c.

a. Press [Save].

The information entered so far is saved and you are prompted to add another COS.

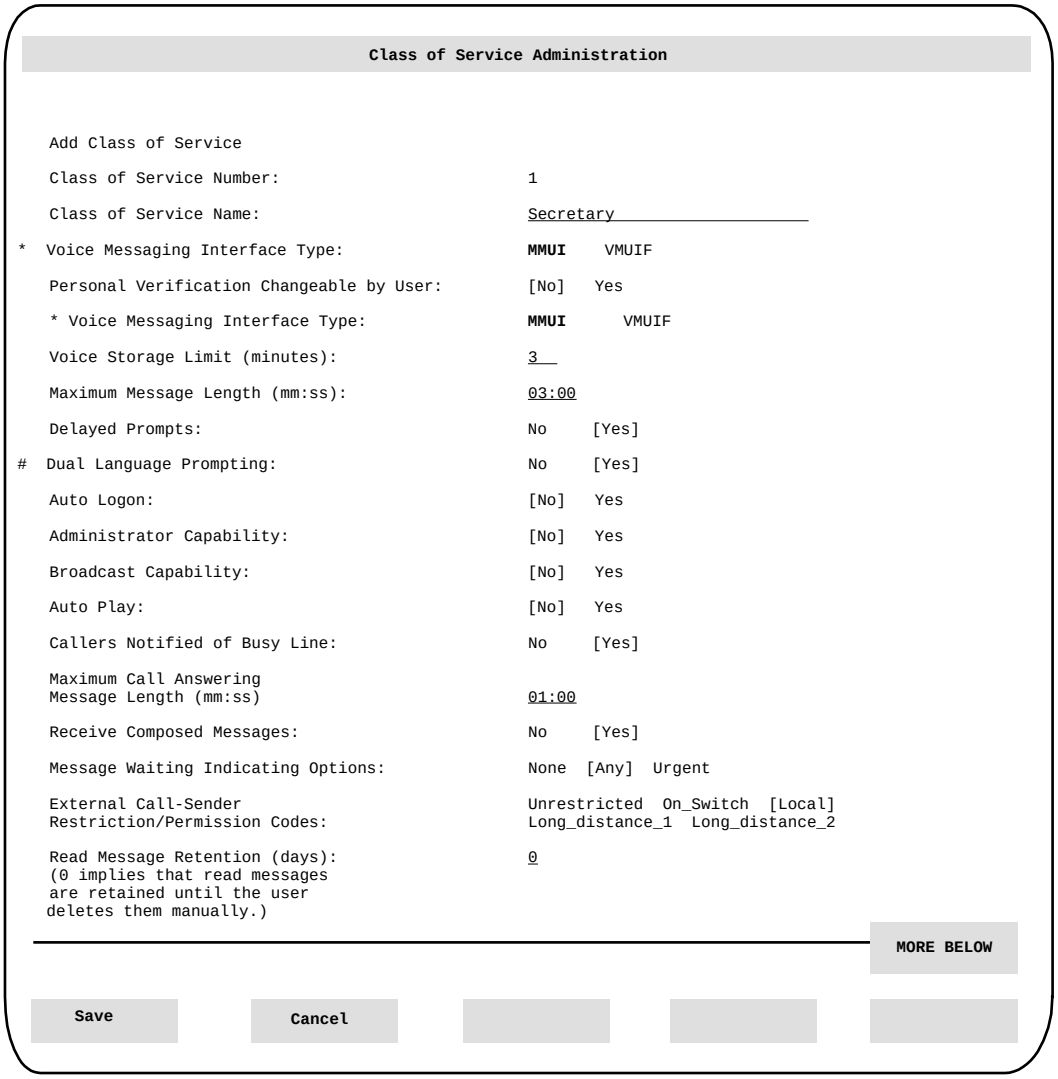
b. Press [Cancel].

Any information entered in the Add Class of Service screen is discarded and the class of service softkeys screen is displayed.

c. Press [Change Defaults].

The remainder of the Class of Service screen is displayed. (See Figure 14-3 if the interface type is MMUI or Figure 14-4 if the interface is VMUIF.) The interface type can be checked in the General Options screen.

Figure 14-3
The Add Class of Service screen (change defaults for MMUI)



```
                        Class of Service Administration


   Add Class of Service

   Class of Service Number:                      1

   Class of Service Name:                        Secretary

*  Voice Messaging Interface Type:               MMUI    VMUIF

   Personal Verification Changeable by User:     [No]   Yes

   * Voice Messaging Interface Type:             MMUI      VMUIF

   Voice Storage Limit (minutes):                3

   Maximum Message Length (mm:ss):               03:00

   Delayed Prompts:                              No     [Yes]

#  Dual Language Prompting:                      No     [Yes]

   Auto Logon:                                   [No]   Yes

   Administrator Capability:                     [No]   Yes

   Broadcast Capability:                         [No]   Yes

   Auto Play:                                    [No]   Yes

   Callers Notified of Busy Line:                No     [Yes]

   Maximum Call Answering
   Message Length (mm:ss)                        01:00

   Receive Composed Messages:                    No     [Yes]

   Message Waiting Indicating Options:           None  [Any]  Urgent

   External Call-Sender                          Unrestricted  On_Switch  [Local]
   Restriction/Permission Codes:                 Long_distance_1  Long_distance_2

   Read Message Retention (days):                0
   (0 implies that read messages
   are retained until the user
   deletes them manually.)

                                                                  MORE BELOW

   Save          Cancel
```

* This field is displayed only if MMUI is installed.
* This field is displayed only if VMUIF is installed.
\# This field is displayed only on multilingual systems.

Figure continued on next page

Figure 14-3 (continued)
The Add Class of Service screen (change defaults for MMUI)

```
                    Class of Service Administration                 MORE ABOVE

   Add Class of Service

   Send Messages to External Users:                  [No]      Yes

   Retain Copy of Sent Messages:                     [No]      Yes

## Delivery to Non-User Capability:                  No        [Yes]

*  Delivery to Non-User                              Unrestricted  On_Switch  [Local]
   Restriction/Permission Codes:                     Long_distance_1  Long_distance_2

*  Send Messages via DNU if Mailbox Not Found:       [No]      Yes

*  DNU DTMF Confirmation Required:                   [No]      Yes

## Remote Notification Capability:                   No        [Yes]

** Remote Notification                               Unrestricted  On_Switch  [Local]
   Restriction/Permission Codes:                     Long_distance_1  Long_distance_2

** Remote Notification Keypad Interface:             No        [Yes]

** Remote Notification Retry Limits and Frequency:
      Busy         Retry Limit:     3_               Retry Interval (hh:mm):00:05
      No Answer    Retry Limit:     10               Retry Interval (hh:mm):00:15
      Answered     Retry Limit:     1_               Retry Interval (hh:mm):00:05

** RN Business Days:                Sunday           [No]      Yes
                                    Monday           No        [Yes]
                                    Tuesday          No        [Yes]
                                    Wednesday        No        [Yes]
                                    Thursday         No        [Yes]
                                    Friday           No        [Yes]
                                    Saturday         [No]      Yes

#  Receive AMIS Open Network Messages:               [No]      Yes

#  Compose/Send AMIS Open Network Messages:          [No]      Yes

#! AMIS Open Network                                 Unrestricted  On_Switch  [Local]
   Restriction/Permission Codes:                     Long_distance_1  Long_distance_2

   Extension Dialing                                 Unrestricted  On_Switch  [Local]
   Restriction/Permission Codes:                     Long_distance_1  Long_distance_2

   Custom Revert                                     Unrestricted  On_Switch  [Local]
   Restriction/Permission Codes:                     Long_distance_1  Long_distance_2

   Save          Cancel
```

```
*  These fields are displayed only if Delivery to Non-Users Capability is Yes.
** These fields are displayed only if Remote Notification Capability is Yes.
#  These fields are displayed only if AMIS Networking is installed.
!  This field is displayed only if Compose/Send AMIS Open Network Messages is Yes.
## These fields are displayed only if Outcalling is installed.
```

Figure 14-4
The Add Class of Service screen (change defaults for VMUIF)

Class of Service Administration

Add Class of Service

Class of Service Number:	15
Class of Service Name:	DTMF
Voice Messaging Interface Type:	[MMUI] **VMUIF**
Maximum Number of SubMailboxes:	0
Voice Storage Limit (minutes):	3
Maximum Message Length (mm:ss):	03:00
Maximum Personal Greeting Length (mm:ss):	01:00
Delayed Prompts:	No [Yes]
Dial Pulse Support:	[No] Yes
Auto Logon:	[No] Yes
Login from Call Answering:	No [Owner]
Lockout Duration (hh:mm): (00:00 implies no mailbox reset)	00:00
Broadcast Capability:	[No] Yes
Callers Notified of Busy Line:	No [Yes]
Receive Messages for Call Answering:	No [Yes]
Maximum Call Answering Message Length (mm:ss)	01:00
Receive Composed Messages:	No [Yes]
Message Waiting Indication Options:	None [Any] Urgent
Skip to First New Message:	[No] Yes
Announce Caller:	[No] Yes
Replay Header with Message:	No [Yes]
Call Sender:	[No] Yes
External Call Sender Restriction/Permission Codes:	Unrestricted On_Switch [Local] Long_distance_1 Long_distance_2

MORE BELOW

Save **Cancel**

Figure continued on next page

Figure 14-4 (continued)
The Add Class of Service screen (change defaults for VMUIF)

```
                              Class of Service Administration                    MORE ABOVE

   Add Class of Service
   Read Message Retention (days):                    10
   ("0" implies that read messages
   are retained until the user
   deletes them manually.)

   Compose Capability:                               [No]      Yes

   Send Messages to External Users:                  [No]      Yes

!! Treatment for Unsent Messages if the
   User Disconnects during Compose:                  Send      [Delete]

## Delivery to Non-User Capability:                 No        [Yes]

*  Delivery to Non-User                             Unrestricted  On_Switch  [Local]
   Restriction/Permission Codes:                    Long_distance 1  Long_distance_2

*  Send Messages via DNU if Mailbox not Found:      [No]      Yes

*  DNU DTMF Confirmation Required:                  [No]      Yes

## Remote Notification Capability:                 No        [Yes]

** Remote Notification                             Unrestricted  On_Switch  [Local]
   Restriction/Permission Codes:                    Long_distance 1  Long_distance_2

** Remote Notification Retry Limits and Frequency:
      Busy         Retry Limit:     3               Retry Interval (hh:mm):00:05
      No Answer    Retry Limit:     10              Retry Interval (hh:mm):00:15
      Answered     Retry Limit:     1               Retry Interval (hh:mm):00:05

** RN Business Days:                Sunday          [No]      Yes
                                    Monday          No        [Yes]
                                    Tuesday         No        [Yes]
                                    Wednesday       No        [Yes]
                                    Thursday        No        [Yes]
                                    Friday          No        [Yes]
                                    Saturday        [No]      Yes

#  Receive AMIS Open Network Messages:              [No]      Yes

#  Compose/Send AMIS Open Network Messages:         No        [Yes]

#! AMIS Open Network                                Unrestricted On_Switch  [Local]
   Restriction/Permission Codes:                    Long_distance 1  Long_distance_2

   Custom Revert                                    Unrestricted  On_Switch [Local]
   Restriction/Permission Codes:                    Long_distance 1  Long_distance_2

   Save          Cancel
```

```
*  These fields are displayed only if Delivery to Non-Users Capability is Yes.
!! This field is displayed only if Compose Capability is set to Yes.
** These fields are displayed only if Remote Notification Capability is Yes.
#  These fields are displayed only if AMIS Networking is installed.
!  This field is displayed only if Compose/Send AMIS Open Network Messages is Yes.
## These fields are displayed only if Outcalling is installed.
```

Defining the basic class of service fields

Fields that are specific to either MMUI or VMUIF are indicated as such.

- ***Class of Service Number*** This field is prefilled with the COS number you were prompted for after pressing the [Add] softkey (see Figure 14-2). You cannot modify this number in this screen.
- ***Class of Service Name*** This field defaults to the name entered in the first Add Class of Service screen. This field is mandatory. The COS definition cannot be saved if this field is blank. The COS name can be up to 30 characters in length although only the first ten characters are displayed on the List of Classes of Services screen (Figure 14-9). Do not use the following characters when entering a name: "+", "_", or "?".
- ***Voice Messaging Interface Type*** This field defaults to the selection made in the first Add Class of Service screen. This field is read-only. It is displayed only if VMUIF is installed.
- ***Personal Verification Changeable by User*** (MMUI only) If this field is set to "No", only the administrator is allowed to record personal verifications for users belonging to the COS. If this field is set to "Yes", users can record their own personal verifications from their telephone sets. The latter option is generally desirable since callers prefer to hear the voice of the person they are calling. The default is "No".
- ***Maximum Number of SubMailboxes*** (VMUIF only) A value other than zero in this field means that submailbox capability is enabled for this COS. Submailboxes allow each member of a household to have their own personal mailbox, all of which are accessible from a single DN. A value of "0" implies that submailbox capability is disabled. If enabled, between 1 and 8 submailboxes are permitted. The default is 0.

  If a user requests additional submailboxes (and the total exceeds the maximum number configured here), you will have to reassign the user to another COS that has a sufficient number of submailboxes.

  Note: Once you have entered a value in this field and assigned users to this COS, this field becomes read-only and you cannot change this value. This is because submailboxes are chargeable by Northern Telecom. When you have used up all of your allotted submailboxes, contact your sales representative.

- ***Voice Storage Limit (minutes)*** This is the maximum amount of storage available to the user. You may enter a value from 1 to 360 (minutes). The default is 3.

  Note: If submailboxes are enabled for this COS, all submailboxes contend for the same storage space.

  If a user surpasses this limit, his calls are not cut off. The user hears a message indicating that his mailbox is full, and he is restricted in what he can do. For example, he can only read and delete messages and is not allowed to record a personal greeting, compose, send, or forward messages. Once the user has deleted some of his messages, he won't be able to reply to messages or compose messages until he has logged off Meridian Mail and logged back on.

- ***Maximum Message Length (mm:ss)*** This value determines the longest possible composed message or personal greeting that a user belonging to this COS is allowed to record. You may enter a value between 00:30 and 99:00 in 10-second increments. The default is 03:00.

  Note: This value cannot be greater than the *Voice Storage Limit*.

- ***Maximum Personal Greeting Length*** (VMUIF only) This value determines the longest possible personal greeting that a user belonging to this COS is allowed to record. You may enter a value between 00:30 and 05:00. The default is 01:00.

  Note: This value cannot be greater than the *Voice Storage Limit*.

- ***Delayed Prompts*** When this field is set to "Yes", the system will prompt users for an action if the user does not initiate any action for 3.5 seconds. It is recommended that this field be set to "Yes" (especially for new users). Once the users belonging to the COS are familiar with the interface, you may get requests to turn delayed prompting off. You can inform experienced users that they do not need to wait for the prompts to finish before entering a command. This field should remain set to "Yes" for the benefit of new users. The default is "Yes".

- ***Dual Language Prompting*** (MMUI only) This field is displayed on multilingual systems only. The selection made here affects the prompts played to callers during call answering sessions. (It does not apply to the prompts played to users while logged into their own mailboxes. The language in which prompts are played to users while logged on to Meridian Mail is determined by the field *Preferred Language*, in the Add or View/Modify Local Voice User screen.) The default is Yes.

  The primary default language and the secondary default language are selected in the Voice Messaging Options screen. In the Add (or View/Modify) Local Voice User screen, you can specify the user's preferred language. This screen is accessed from the User Administration Menu.

  During a call answering session, the languages that callers hear depend on a number of factors and any of the following results is possible.

  - If the *Default Language Overrides User 's Preferred Language* field is set to "No", and the user's language is different from the primary default language, callers will hear prompts in the user's preferred language followed by the primary default language.
  - If the *Default Language Overrides User 's Preferred Language* field is set to "No", and the user's language is the same as the primary default language, callers will hear prompts in the primary default language followed by the secondary default language.
  - If the *Default Language Overrides User 's Preferred Language* field is set to "Yes", callers will hear prompts in the primary default language followed by the secondary default language. Users continue to hear prompts in their preferred language during login sessions.

  The *Default Language Overrides User 's Preferred Language* field is located in the Voice Messaging Options screen which is accessible from the Voice Administration Menu.

- ***Dial Pulse Support*** (VMUIF only) Set this field to "Yes" to create a class of service that supports users with rotary or dial pulse phone sets. This option allows the user to log on to his or her mailbox without having to enter a mailbox number, password or any other key presses. The default is No.

  Note: If this field is set to "Yes", *Auto Logon* (the next field) must also be set to "Yes".

- ***Auto Logon*** When this field is set to "Yes", the user does not need to enter a mailbox number or password to gain access to Meridian Mail. When set to "No," the user must enter a mailbox number and password. Therefore, for reasons of mailbox security, this field should typically be set to "No". The default is No.

  There are, however, several exceptions. Set this field to "Yes" if

  - Dial Pulse Support is enabled (in which case, auto logon *must* be enabled).
  - The users that will be added to this COS have requested auto logon and their phones are in a secure location. To create completely "handsfree" message retrieval for MMUI users, use auto logon in conjunction with auto play.

- ***Administrator Capability*** (MMUI only) If this field is set to "Yes", users belonging to this COS will be allowed to record a custom call answering greeting for the system and personal verifications for all other users. (The "Voice Messaging Options" section in the "Voice Administration" chapter discusses customized call answering greetings in more detail.)

  You can set this field to "Yes" to create a special COS if there are any administrative assistants at the customer site that need to be able to perform these limited administrative tasks. For all other types of users, this field should be set to "No". The default is No.

- ***Broadcast Capability*** Set this field to "Yes" if you want users to be able to compose and send broadcast messages. A broadcast message is sent to all users on the system. The default is No.

  Note: If the interface type is VMUIF, this field will be displayed after the *Lockout Duration* field.

- ***Auto Play*** (MMUI only) When this field is set to "Yes", the messages in the user's mailbox are automatically played when the user logs on. Playback begins with the first new message. Once all new messages are played, old (read) messages are then played back (if there are any), starting with the oldest read message. However, the pound sign (#) can be pressed at any time to end playback.

When this field is set to "No", the user must explicitly request that each message be played by pressing "2" on the telephone keypad. *Auto Play* can be used in combination with *Auto Logon* to allow totally "handsfree" message retrieval. The default is "No".

- ***Login from Call Answering*** (VMUIF only) This field determines whether or not users can log into their mailbox during or after a call answering session. When this feature is enabled, users have an alternative method of logging in which does not require that they dial a special access DN. Users can access their mailbox from a phone other than their "home phone" by dialing their telephone number and then pressing *.

  When this field is set to "Owner", users are allowed to log into their mailbox only if the destination mailbox is their own. After pressing *, the user is prompted to enter his or her password.

  When this field is set to "No", the user will not be allowed to log in from call answering.

  The default is Owner.

- ***Lockout Duration (hh:mm)*** (VMUIF only) When a user's mailbox is disabled (as shown by the *Logon Status* field in the Add or View/Modify Local Voice User screen) due to password violation, this field determines how long the user is locked out before he can log on again. You may enter a value from 00:00 to 23:59. If you enter a value of 00:00, this means that the user will be locked out until you decide to reenable the mailbox. The default is 00:00.

- ***Callers Notified of Busy Line*** When this field is set to "Yes", a special prompt is played when the called line is busy informing them that the user is on the phone. After the prompt is played, the caller is connected to Meridian Mail to leave a message. If the field is set to "No", the caller is simply connected to Meridian Mail and given the chance to leave a message. The default is Yes.

  Note: If the user's mailbox is associated with two (or three) DNs, they must all be busy for this prompt to be played.

- ***Receive Messages for Call Answering*** (VMUIF only) If this field is set to "No", users' mailboxes will not take call answering messages but can still be used to send messages. For example, you might set this field to "No" for a telephone that is located in a conference room and does not belong to a particular user. The phone can still be used to send voice messages by people using the room, but voice messages cannot be deposited in the mailbox. The default is Yes.

- ***Maximum Call Answering Message Length (mm:ss)*** This value determines the longest possible call answering message that a caller can record and leave in a user's mailbox. You may enter a value between 00:30 and 99:00 in 10 second increments. The default is 01:00.

  Note: This value cannot be greater than the *Voice Storage Limit*.

- ***Receive Composed Messages*** If this field is set to "No", users' mailboxes will not accept composed messages. The default is "Yes". If AMIS networking is installed, setting this field to "No" automatically sets the field *Receive AMIS Open Network Messages* to "No".

- ***Message Waiting Indication Options*** The chosen setting determines the type of messages that will cause a message waiting indication (a flashing light or an interrupted dial tone) on the user's telephone set. Set this field to "Any" to notify users of all new messages, "Urgent" to notify users of only those messages tagged as urgent, or "None" if users are not to be notified at all (if, for example, mailboxes do not have telephone sets associated with them). The default is "Any".

  This field should be set to "None" for users that don't have a physical telephone set, but do have a mailbox. For example, a salesperson may only rarely be at the office and does not have a phone as a result, but still requires a number for callers to leave messages.

- ***Skip to First New Message*** (VMUIF only) This field determines what happens when users log on to listen to new messages. If this field is set to "Yes", the first new message is automatically played when a user successfully logs on. If this field is set to "No", users must use the Play command to listen to new messages. The default is No.

- ***Announce Caller*** (VMUIF only) If this field is set to "Yes", the prompt *"From <caller>"* will be announced in the header/envelope for call answering messages left by callers. The default is No.

- ***Replay Header with Message*** (VMUIF only) If "Yes" is selected, the header will be played whenever a user selects the Play command to listen to messages that have been left in the mailbox. The header includes information such as the time at which the message was sent, the caller's name, and so on. The default is Yes.

- ***Call Sender*** (VMUIF only) After listening to a message, users can dial the originator of the message automatically if this field is set to "Yes". After listening to a message, the user presses 42 to dial the caller's number. Do not enable this field if Dial Pulse Support is enabled. The default is No.

  Note: This feature is blocked if the user has logged on through remote notification.

- ***External Call-Sender Restriction/Permission Codes*** Apply one of the four restriction/permission sets to restrict the DNs to which external calls can be placed using the call sender feature. ("Unrestricted" indicates that all numbers are permitted.) The actual restriction/permission codes are defined in the Voice Security Options screen. The default is the third option ("Local", if the default names have not been modified).

- ***Read Message Retention (days)*** This field specifies the number of days that messages are kept in users' mailboxes after they have been read. The value in this field is limited by the system-wide value set in the *Maximum Read Message Retention* field in the Voice Messaging Options screen. (See "Voice messaging options" in the chapter "Voice administration".)

  Once the lesser of these two values is reached, read messages are automatically deleted. If "0" is entered in both fields, read messages are not automatically deleted by the system, but can only be deleted by the user. You can enter a value from 0 to 99. The default is 0.

The following table shows which value is used to determine how long the user's read messages are kept.

System retention limit	User retention limit	Amount of time read messages are kept
0 (zero)	0 (zero)	Messages are kept until the user deletes them. The system will not automatically delete read messages.
0 (zero)	A value other than zero	The user retention limit determines how long messages are kept.
A value other than zero	0 (zero)	The system retention limit determines how long messages are kept.
A value other than zero	A value other than zero	The lesser value is used to determine how long messages are kept.

- ***Compose Capability*** (VMUIF only) Set this field to "Yes" to give users the ability to compose and send voice messages to other users. If this value is set to "No", then the user only has call answering capability. The default is No.

  Note: Once you have assigned users to the COS and put it to use, you cannot modify this field. This feature is chargeable by Northern Telecom. If you need to revoke compose capability from a particular user, you will have to reassign the user to another COS. Conversely, if a user does not have this capability and later requests it, you will have to reassign the user to a COS that has compose capability enabled.

- ***Send Messages to External Users*** This field is not applicable to single-customer systems (that is, systems that do not have the Meridian Mail Multi-Customer feature installed). The default is No.

- ***Treatment for Unsent Messages if the User Disconnects during Compose*** (VMUIF only) This field is displayed only if *Compose Capability* is set to "Yes". The selection made in this field determines what happens to an unsent message if a user disconnects while composing the message. If this field is set to "Delete", the unsent message is deleted. If this field is set to "Send", the message is automatically sent upon hanging up. The default is Delete.
- ***Retain Copy of Sent Messages*** (MMUI only) When this field is set to "Yes", copies of sent messages are not deleted from the user's mailbox. When it is set to "No", messages are deleted as soon as they are sent. Carefully consider how many users you can allow to have this capability, since the more users that have this ability, the faster your available storage space will be used up. The default is No.

  Note: The remaining fields in the Add Class of Service screen are described in the following sections: "Defining outcalling parameters (remote notification and delivery to non-user)," "Enabling AMIS networking," and "Selecting restriction/permission codes."

Creating a class of service for users with dial pulse sets

At least one of the VMUIF classes of service that you create should support residential users that have dial pulse phone sets. The following fields must be configured as indicated in order to support dial pulse:

- *Dial Pulse support* - "Yes"
- *Auto Logon* - "Y es"
- *Skip to First New Message* - "Y es"
- *Read Message Retention* This must be a value other than zero so that read messages are automatically deleted on a regular basis (such as every 7 days).

Dial pulse users can also record a personal greeting by calling a Greeting Change number. If they do not record a personal greeting, the default system greeting is played.

If a dial pulse user logs in from a phone other than his or her home phone, a mailbox and password are required. (The user must, therefore, call in from a phone with touch-tone support.) However, once logged on, the mailbox operates as if it was accessed from a household phone (no further

commands are required). However, if the user does enter a DTMF command, the call reverts to the standard DTMF interface.

Defining outcalling parameters (Remote Notification and Delivery to Non-User)

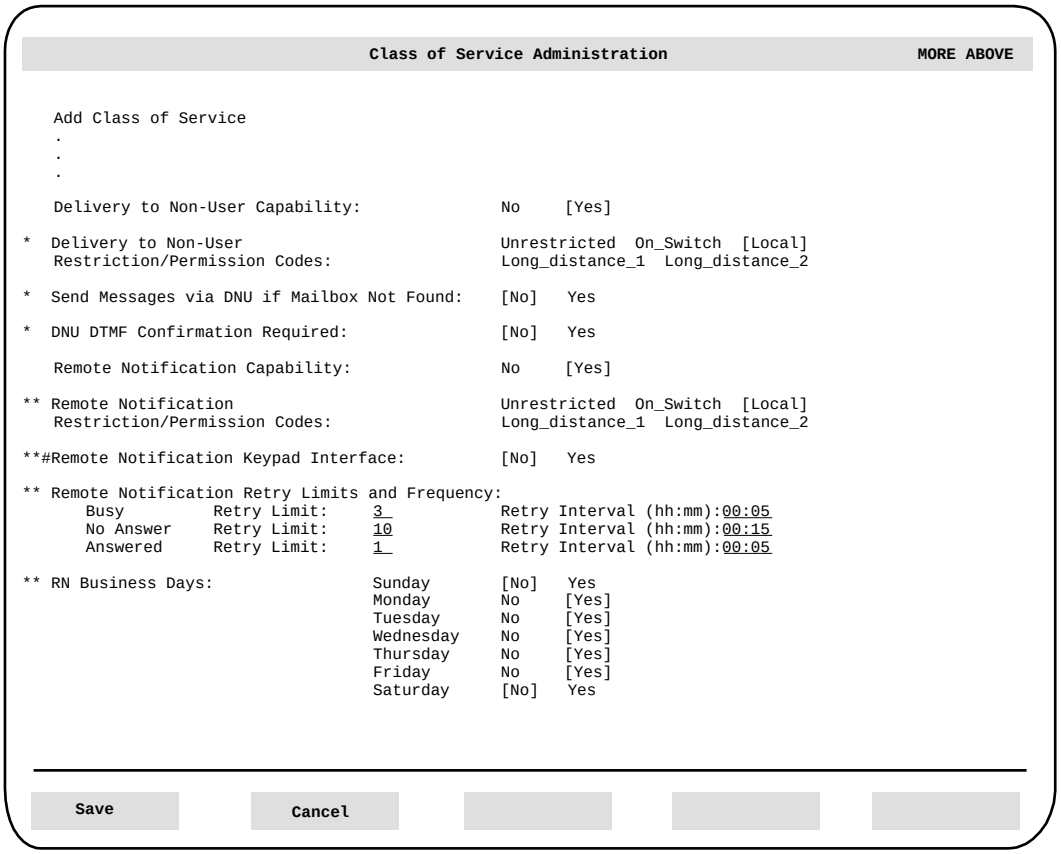
The Outcalling feature includes Remote Notification (RN) and Delivery to Non-user (DNU). Remote Notification (RN) informs a user via a remote telephone, pager, or paging service, that there are new messages in his or her mailbox. Delivery to Non-User allows a user to compose and send messages to non-users of Meridian Mail. A number of RN and DNU parameters are configured in the class of service to which the user belongs.

See the *Outcalling Application Guide* (NTP 555-7001-322) for details about configuring the class of service fields for remote notification and delivery to non-users.

Outcalling fields

The following fields in the Add Class of Service screen pertain to the Outcalling feature (remote notification and delivery to non-users).

Figure 14-5
Outcalling fields in the Add Class of Service screen



* These fields are displayed only if Delivery to Non-User Capability is set to "Yes".
** These fields are displayed only if Remote Notification Capability is set to "Yes".
\# This field is applicable only if the interface type is MMUI.

- ***Delivery to Non-User Capability*** This field determines whether or not users belonging to this COS can compose and send messages to people who are not Meridian Mail users. The default is "No".

- ***Delivery to Non-User Restriction/Permission Codes*** This field is displayed only if *Delivery to Non-User Capability* is set to "Yes".

  The selected option determines which dialing codes can and cannot be dialed when a user attempts to send a message to a non-user. The actual dialing codes are defined in the Voice Security Options screen, accessible through the Voice Administration menu. The default is the third restriction/permission set ("Local" if the default name has not been changed). "Unrestricted" indicates that all numbers are permitted.

- ***Send Messages via DNU if Mailbox Not Found*** This field is displayed only if *Delivery to Non-User Capability* is set to "Yes". If a user composes a message to an address that is not defined as a mailbox number on the system, and if the user has not entered the DNU prefix, the address will be treated as a non-user number and the message will be delivered via DNU (as long as the DN is valid). This is known as *implicit DNU*. You may want to enable this feature to allow users to compose messages to non-users without having to enter a prefix first, or just to cover those cases where the user has forgotten to enter the DNU prefix as part of the address. Non-user DNs are subject to DNU restriction/permission codes. The default is No.

  Note 1: If this field is enabled, *DNU optimization* is also enabled. For example, a user enters the DNU prefix and then enters an address which is a mailbox number. Meridian Mail will use message transfer to deliver the message (since the the DN is that of a mailbox user) rather than outcalling.

- ***DNU DTMF Confirmation Required*** This field is displayed only if *Delivery to Non-User Capability* is set to "Yes". This field indicates whether or not a recipient of a Delivery to Non-user (DNU) message is required to confirm that they want to hear the message by pressing **2**. This can help avoid messages being delivered to an answering machine or to the wrong person. When disabled, the message is played upon voice detection. If you are in an area where rotary phones are widely used, you should disable confirmation. The default is "No".

- ***Remote Notification Capability*** This field determines whether or not remote notification is enabled for this class of service. The default is No.

- ***Remote Notification Restriction/Permission Codes*** This field is displayed only if *Remote Notification Capability* is set to Yes.

  The selection made in this field determines the restricted/permitted dialing codes that are applied to target DNs in users' remote notification schedules. The actual dialing codes are defined in the Voice Security Options screen, accessible from the Voice Administration menu. The default is the third restriction/permission set ("Local" if the default name has not been changed). "Unrestricted" indicates that all numbers are permitted.

- ***Remote Notification Keypad Interface*** (MMUI only) This field is displayed only if *Remote Notification Capability* is set to "Yes". When this field is "Yes", users are able to change their schedules, periods, and target DNs from a telephone keypad. The default is No.

- ***Remote Notification Retry Limits and Frequency*** The following fields are displayed only if *Remote Notification Capability* is set to Yes.

  These fields are limited by the *Maximum Number of Remote Notification Retry Repeats* field in the Outcalling Administration screen. For example, if the system attempts to notify a user of a message, but the notification numbers are not answered, the system will stop notification attempts after the *No Answer* limit has been exhausted for the user. This is considered one retry repeat. If another new message is left for the user, and retry attempts are again exhausted, this would be counted as the second retry repeat. This continues until the maximum number of retry repeats set in this field is reached, at which time Meridian Mail no longer attempts to notify the user of new messages. If a user logs on to the mailbox and retrieves the messages, the counter is reset to 0, and remote notification is reenabled for the user.

  Note: Call Progress Tone Detection (CPTD) can be set to Standard (the default) or France during software installation. The retry limits and intervals will be different (as specified in the following descriptions) depending on this setting. To change this setting from the default value, call your Northern Telecom technical support center.

  - ***Busy Retry Limit*** The number of times notification is retried at a remote phone, pager, or paging service if the destination number is busy. You may enter a value from 0 to 10. The default is 3.

If more than one target DN is defined in the user's schedule, Meridian Mail will not try the next target DN if the current one is busy. Instead, the system will send the remote notification call to the same DN on the retry (after waiting the amount of time specified as the busy retry interval).

If this limit is exhausted, then the *No Answer Retry Limit* and *No Answer Retry Interval* are used for further instances of busy. Therefore, the total number of allowed retries is actually Busy Retries + No Answer Retries.

Note: If CPTD is set to France, the valid range is 0 to 5 and the default is 1.

- ***Busy Retry Interval (hh:mm)*** This field determines how long Meridian Mail will wait before retrying remote notification if the destination number is busy. The valid range is from 00:00 to 23:59. The default is 00:05.

  Note: If CPTD is set to France, the valid range is 00:00 to 00:12 and the default is 00:05.

- ***No Answer Retry Limit*** This is the number of times notification is retried at a remote phone, pager, or paging service if the destination number is not answered. You may enter a value from 0 to 10. The default is 10.

  If more than one target DN is defined in the user's schedule, Meridian Mail will try calling the first target DN. If there is no answer, Meridian Mail immediately tries calling the second target DN. If there is no answer at this DN, Meridian Mail will call the third target DN (if defined). If it too is not answered, the system will wait the amount of time specified as the *No Answer Retry Interval* before retrying remote notification to the first target DN.

  If there is a mixture of No Answer and Answer results in a multiple DN scenario, the *Answer Retry Interval* and *Answer Retry Limit* are used.

  Note: If CPTD is set to France, the valid range is 0 to 5, and the default is 4.

- ***No Answer Interval (hh:mm)*** This field determines how long Meridian Mail will wait before retrying remote notification if the destination number is not answered. The valid range is from 00:00 to 23:59. The default is 00:15.

  Note: If CPTD is set to France, the valid range is 00:00 to 00:12 and the default is 00:05.

- ***Answered Retry Limit*** This is the number of times Meridian Mail will retry a remote number when the number is answered but the user does not log in (by pressing 1) or turn off further remote notification (by pressing 3.) The valid range is from 0 to 10. The default is 1.

  This number should be relatively low. (The default is usually sufficient.) If an answering machine answers the call, you do not want the RN service to keep calling back since RN cannot be turned off. However, if Meridian Mail is calling a pager you would like the pager to go off periodically to remind the user of calls.

  If more than one target DN is defined in the user's schedule, Meridian Mail will try calling the first target DN. If it is answered with no login, Meridian Mail immediately tries calling the second target DN. If it, too, is answered with no login, Meridian Mail will call the the third target DN (if defined). If it, too, is answered with no login, the system will wait the amount of time specified as the *Answered Retry Interval* before retrying remote notification to the first target DN.

  If there is a mixture of No Answer and Answered results in a multiple DN scenario, the *Answered Retry Interval* and *Answered Retry Limit* are used.

  Note: If CPTD is set to France, the valid range is 0 to 5, and the default is 0.

- ***Answered Retry Interval (hh:mm)*** This is the length of time the system will wait before retrying a remote number when the destination number is answered but no messages are retrieved. The valid range is from 00:00 to 23:59. The default is 00:05.

  Note: If CPTD is set to France, the valid range is 00:00 to 00:12 and the default is 00:05.

For a detailed description of retry limits and intervals, refer to the chapter "Planning outcalling" in the *Outcalling Application Guide* (NTP 555-7001-320).

- ***RN Business Days*** This field is displayed only if *Remote Notification Capability* is set to "Yes". For each day of the week that is a business day, select "Yes". Select "No" for non-business days. This information is used when creating remote notification schedules. By default, Monday to Friday are set to Yes and Saturday and Sunday are set to No.

Enabling AMIS networking

There are two types of AMIS networking: regular AMIS networking and Integrated AMIS networking. Regular AMIS networking indicates that AMIS is being used alone (not in conjunction with Meridian Networking). In this sort of environment, messages are referred to as *AMIS open network messages*.

Integrated AMIS networking requires that the local site also have Meridian Networking installed. Once installed, remote AMIS sites can be added to the local network database as *virtual nodes*. Messages that are received from such sites, or sent from the local site to such sites, are known as *private network messages* since both sites are part of a private Meridian network. If Meridian Networking is installed but a remote AMIS site has not been added as a virtual node, the messages sent back and forth between the local site and the remote site are considered open network messages.

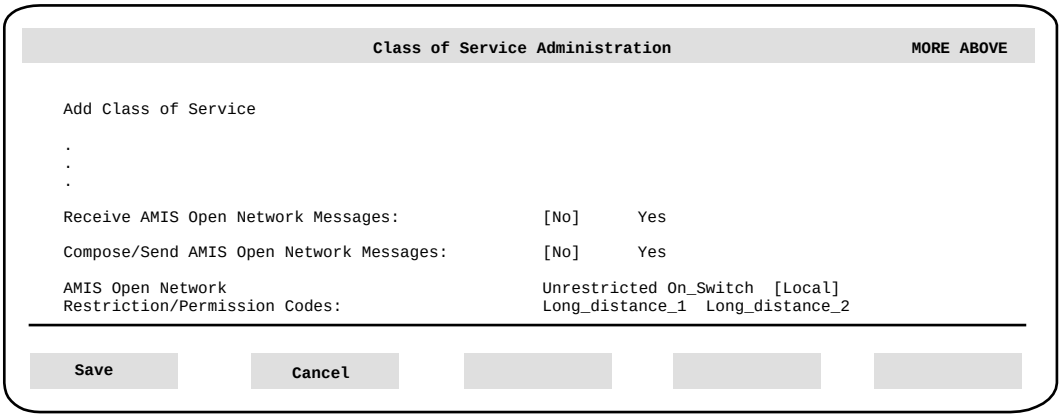
The following fields can be enabled to allow local users to

- receive AMIS open network messages and
- compose and send messages to remote AMIS sites that are not defined as virtual nodes in your network database.

For more information about Integrated AMIS networking and adding remote sites as virtual nodes, see the *Networking Services Administration Guide* (NTP 555-7001-335).

The fields shown in Figure 14-6 are displayed only if AMIS networking is installed.

Figure 14-6
AMIS networking fields



- ***Receive AMIS Open Network Messages*** This field cannot be set to "Yes" unless *Receive Composed Messages* is first set to "Yes".

  If this field is set to "No", it will not prevent local users from receiving AMIS private network messages from remote users at AMIS sites that are defined as virtual nodes. It will only prevent local users from receiving AMIS open network messages.

  The default is No.

- ***Compose/Send AMIS Open Network Messages*** This field cannot be set to "Yes" unless the *Compose Capability* field is first set to "Yes".

  If this field is set to "No", local users will still be able to compose and send messages to remote users that are located at virtual nodes within a Meridian network. This field only applies to open network messages.

  The default is No.

- ***AMIS Open Network Restriction/Permission Codes*** This field is displayed only if AMIS is installed and the previous field, *Compose/Send AMIS Open Network Messages* , is set to Yes.

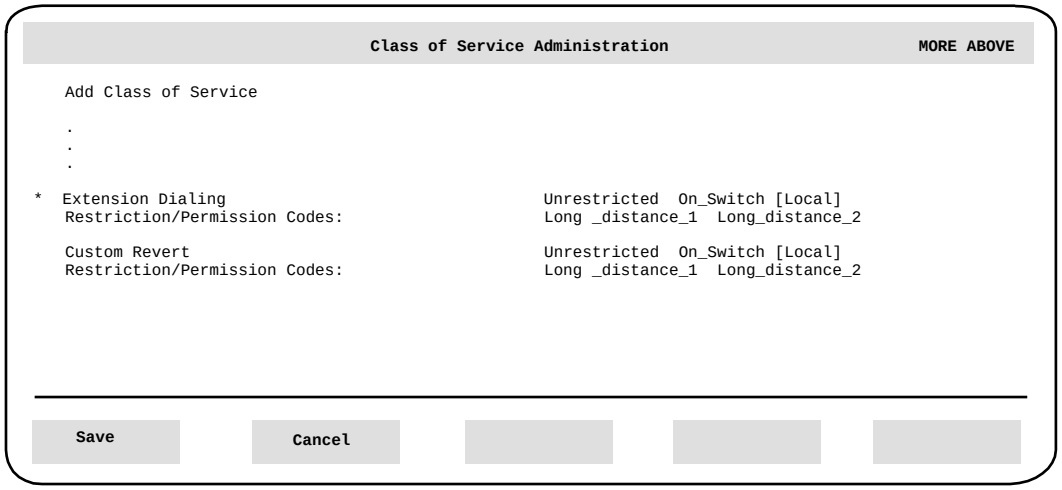
When a user composes a message to an AMIS site (that is not defined as a virtual node), the system checks to see if the address is restricted. If it is restricted, the user gets a non-delivery notification (NDN). The default is the third restriction/permission set ("Local" if the default name has not been changed). "Unrestricted" indicates that all numbers are permitted.

Note: If there is integrated AMIS networking between the local site and the remote AMIS site, these restriction/permission codes do not apply. If the remote AMIS site is a virtual node and, therefore, part of your Meridian Network, it is assumed that you want local users to be able to send messages without restriction to those sites.

Selecting restriction/permission codes

The following fields are used to apply dialing restrictions to extension dialing (mailbox thru-dial) and custom revert. Note that extension dialing is only available if the interface type is MMUI.

Figure 14-7
Choosing restriction/permission codes



* This field is displayed only if the interface type is MMUI.

- ***Extension Dialing Restriction/Permission Codes*** (MMUI only) This field indicates which restricted/permitted dialing codes apply when a user dials a phone number while logged on to his mailbox (known as mailbox thru-dialing). For example, a user may dial into her mailbox from outside the office in order to listen to messages. While listening to messages the user realizes that she would like to speak to someone at the office. Instead of logging out and calling back, the user can press 0 followed by the extension number.

  You will have to decide which dialing codes should be restricted when mailbox thru-dial is used. For example, you may want to restrict users from dialing external or long distance numbers when thru-dialing. The four choices displayed in this screen reflect the four sets of dialing codes that have been defined in the Voice Security Options screen (described in the chapter "Voice administration"). Each set contains up to 10 permission and 10 restriction codes. The default is the third restriction/permission set ("Local" if the default name has not been changed). "Unrestricted" indicates that all numbers are permitted.

- ***Custom Revert Restriction/Permission Codes*** The custom revert DN is the extension to which a caller is passed when the caller presses 0 during a call answering session. Since users can customize this DN from their telephone set you must determine which dialing codes you want to restrict (or explicitly permit). For example, you may want to ensure that users cannot revert callers to long distance numbers.

  The actual restriction/permission tables are defined in the Voice Security Options screen (described in the "Voice administration" chapter). Up to 10 restriction and 10 permission codes can be defined for each option. The default is the third restriction/permission set ("Local" if the default name has not been changed). "Unrestricted" indicates that all numbers are permitted.

  To block users from changing their own revert DNs from their telephone sets, restrict the dialing codes 0-9 in one of the restriction/permission classes and then select that class for Custom Revert. The administrator is still able to enter a revert DN in the Add or View/Modify Local Voice User screen, and this revert DN will work. However, users will be unable to change it from their telephone sets.

Assigning classes of service to the system

Once you have created your classes of service, you are ready to assign COSs to the system so that you can use them when adding new users or modifying existing users.

To assign COSs to the system

1 From the Main Menu, select General Administration, General Options.

The General Options screen is described in the chapter "General administration."

2 Go to the *Class of Service Selection* field in the General Options screen to assign up to 15 COSs to the system. (To assign COSs, simply enter the COS numbers in these fields and save the screen.)

Assigning a class of service to a user

To assign a user to a particular COS, select the COS number in the *Class of Service* field in the Add Local Voice User screen. This screen is described in the "User administration" chapter.

Personal classes of service

If a user has special requirements that are not met by any of the existing COSs, you can create a personal COS that is customized for that user. All personal COSs must be maintained individually since any changes made to a system COS will not affect the personal COSs that exist on the system. If, for example, it is decided that all users will be given access to a particular feature, you would have to modify the system COSs as well as all personal COSs. To create a personal COS refer to the section "Creating a personal class of service" in the "User administration" chapter.

Running the conversion utility for converted systems

If you have converted your system from a prior release to Release 9, all existing users will have a personal class of service. This means that all users maintain their Meridian Mail Release 8 personal settings and are not connected or related to any system classes of service that you may have defined. Therefore, after a conversion you must ensure that all existing users are reassigned to system classes of service.

The COS Conversion utility is available from the tools level and allows you to reassign users to system classes of service. See the *System Administration Tools Guide* (NTP 555-7001-305) for details.

This utility checks each user's personal class of service, and if it matches an existing system class of service, the user is assigned to that class of service. User mailboxes that do not match a system class of service remain with personal COSs. You can use this utility to view these unassigned mailboxes and then use the utility to either create a system class of service based on the personal COS or assign the unassigned mailbox to a defined system class of service.

Modifying class of service definitions

Finding a class of service

The first step in modifying an existing class of service is retrieving it. You can use the find functionality to narrow down your search for the COS you want to modify (in other words, display a subset of COSs), or retrieve a particular COS (if you know the exact COS number or name).

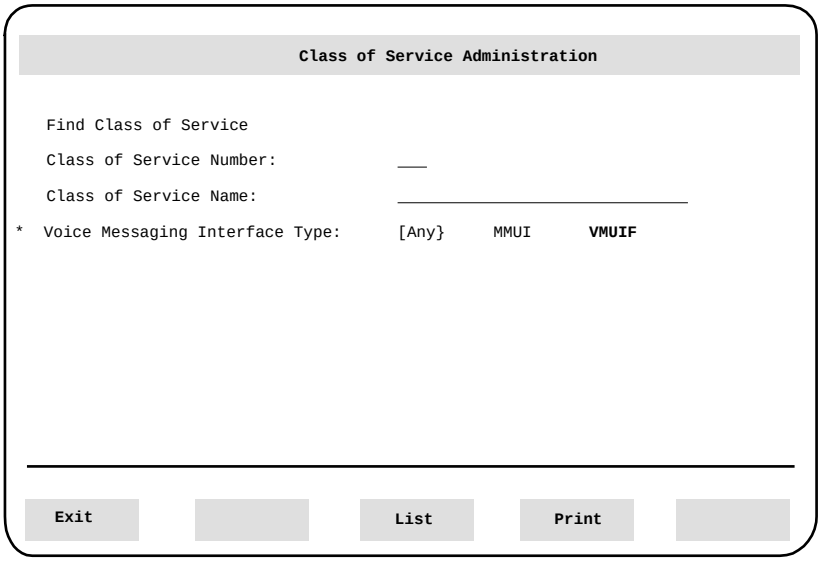
When you press the [Find] softkey, the Find Class of Service screen (Figure 14-8) screen is displayed. This screen allows you to find

- a specific COS by number
- a specific COS by name or a subset of COSs by name (a subset is retrieved by using wildcard characters)
- a subset of COSs according to interface type (MMUI or VMUIF)

The Find Class of Service screen

The Find Class of Service screen is where you specify the search criteria for retrieving a particular class of service or a subset of classes.

Figure 14-8
The Find Class of Service screen



* This field is displayed only if VMUIF is installed.

If you do not fill in any of the fields, the resulting list will be the complete set of defined COSs.

If classes of service already exist on the system, you can either view the list of existing COSs on screen or print it out.

Procedure 14-2
Printing a list of existing COSs

Starting point: The Main Menu

1 Select Class of Service Administration.

The Class of Service Administration screen is displayed (Figure 14-1 on page 14-4).

2 Press [Find].

The Find Class of Service screen is displayed.

3 Specify the search criteria.

To find and print a particular COS, enter the COS number in the *Class of Service Number* field.

To find and print subset of COSs according to name, enter the appropriate search pattern in the *Class of Service* Name field. (This pattern will consist of the letters and wildcard characters to indicate the pattern that the found COSs must match.)

To find and print those COSs for a particular interface, specify either MMUI or VMUIF.

4 Press [Print].

A list of existing COSs that meet the specified search criteria is printed.

Procedure 14-3
Viewing a list of COSs

Starting point: The Main Menu

1 Select Class of Service Administration.

The Class of Service Administration screen is displayed (Figure 14-1 on page 14-4).

2 Press [Find].

The Find Class of Service screen is displayed.

3 Specify the search criteria.

To find a particular COS, enter the COS number in the *Class of Service Number* field.

To find a subset of COSs according to name, enter the appropriate search pattern in the *Class of Service Name* field. (This pattern will consist of the letters and wildcard characters to indicate the pattern that the found COSs must match.)

To find those COSs for a particular interface, specify either MMUI or VMUIF.

4 Press [List].

The List of Classes of Service screen is displayed (Figure 14-9).

The List of Classes of Service screen

The List of Classes of Service screen displays a list which is the result of the search performed on the basis of the search criteria specified in the Find Class of Service screen.

Figure 14-9
The List of Classes of Service screen

Class of Service Administration

List of Classes of Service

COS Num	*COS Name	#VceMsg I/F	Storage (Mins.)	Retain ReadMsg	#Compose Msgs	DNU /RN	AMIS Receive/Send	DualLang Prompt
1	Standard	MMUI	3	0		N/N	No No	No
2	Executive	MMUI	20	2		Y/Y	YesYes	Yes
3	Secretary	MMUI	10	0		N/Y	YesNo	No
10	Outcalling	MMUI	5	0		Y/Y	No No	No
11	DNU only	MMUI	5	0		Y/N	No No	No
12	RN only	MMUI	5	0		N/Y	No No	No
14	Deluxe	VMUIF	8	0	Yes	N/Y	YesYes	
15	Dial Pulse	VMUIF	3	0	No	N/N	No No	

Exit | | **View/Modify** | **Delete** |

* Only the first 10 characters of the COS name are displayed.
\# These columns are displayed only if VMUIF is installed.

> ***Note:*** If you are logged on as administrator at a MAT, only the [View Softkey] is displayed on the List of Classes of Service screen. You will not be able to modify or delete the COS.

The List of Classes of Service screen displays the COS number and name along with a brief summary of the class of service definition. This summary includes the following information:

- the voice messaging interface (MMUI or VMUIF)
- the maximum amount of storage available
- the number of days that read messages are retained

- whether or not the user is able to compose messages (VMUIF only)
- whether or not DNU and/or RN are enabled
- whether or not AMIS messages are allowed to be received and/or sent
- whether or not dual language prompting is enabled

Viewing and/or modifying a class of service

From the List of Classes of Service screen, you can select a particular COS and press the [View/Modify] softkey to bring up the entire COS definition on screen.

Field descriptions are given in the section "Defining the basic class of service fields," beginning on page 14-11.

Procedure 14-4
Modifying an existing COS

Starting point: The Main Menu

1 Select Class of Service Administration.

2 Press the [Find] softkey.

The Find Class of Service screen is displayed.

3 Specify the search criteria.

To find a particular COS, enter the COS number in the *Class of Service Number* field.

To find a subset of COSs according to name, enter the appropriate search pattern in the *Class of Service Name* field. (This pattern will consist of the letters and wildcard characters to indicate the pattern that the found COSs must match.)

To find those COSs for a particular interface, specify either MMUI or VMUIF.

4 Press [List].

The List of Classes of Service screen is displayed (Figure 14-9).

5 Move the cursor to the definition you want to modify.

6 Press spacebar to select it.

7 Press [View/Modify].

The View/Modify Class of Service screen is displayed.

8 Make the necessary changes to the COS definition.

9 To save the new COS definition, go to step 9a.To exit the screen without saving your changes, go to step 9b.

a. Press [Save].

The new COS definition is saved. All users belonging to the COS will use the updated values in the COS. The List of Classes of Service screen is displayed.

b. Press [Cancel].

Any changes that you have made are not saved and the List of Classes of Service screen is displayed.

Deleting a class of service

From the List of Classes of Service screen, you can select a particular COS and press the [Delete] softkey to bring up the entire COS definition on screen.

Note: Before deleting a class of service, reassign those users that belong to the COS to another COS. You cannot delete a class of service if users are currently assigned to it.

Procedure 14-5
Deleting a class of service

Starting point: The Main Menu

1 Select Class of Service Administration.

2 Press the [Find] softkey.

The Find Class of Service screen is displayed.

3 Specify the search criteria.

To find a particular COS, enter the COS number in the *Class of Service Number* field.

To find a subset of COSs according to name, enter the appropriate search pattern in the *Class of Service Name* field. (This pattern will consist of the letters and wildcard characters to indicate the pattern that the found COSs must match.)

To find those COSs for a particular interface, specify either MMUI or VMUIF.

4 Press [List].

The List of Classes of Service screen is displayed (Figure 14-9).

5 Move the cursor to the definition you want to delete.

6 Press spacebar to select it.

7 Press [Delete].

The Delete Class of Service screen is displayed.

8 To delete the COS, go to step 8a. To exit the screen without deleting the COS, go to step 8b.

a. Press [OK to Delete].

The COS is deleted. The List of Classes of Service screen is displayed.

If users are assigned to the COS you are trying to delete, a warning message is displayed and the COS is not deleted. Y ou will have to reassign users to another COS before you can delete the COS.

b. Press [Cancel].

The COS is not deleted and the List of Classes of Service screen is displayed.

Appendix A: Restore and voice volume recovery

The purpose of this appendix is to provide background information about the disk and tape devices used in Meridian Mail systems.

> ***Note:*** High-capacity magnetic disks are a central part of a voice messaging system. Magnetic disk drives are precision electro-magnetic devices which fail from time to time.

Backup copies of the system data are fundamental to restoring the system with as little disruption and data loss as possible. For this reason, it is important that the system administrator back up the system on a regular basis.

Meridian Mail backup devices for non-shadowed systems

Meridian Mail systems feature a streaming tape drive to allow system and user information to be copied from disk onto one or more quarter-inch tape cartridges. If a disk drive fails, the system can be restored to a working state by copying the data back from tape onto a replacement disk. It is also possible to copy data on to another Meridian Mail system if necessary.

Larger Meridian Mail systems have multiple nodes, each node having its own disk drive. On these systems, a disk-to-disk backup feature is available (when it is enabled). Rather than copying to tape, the data is copied to one of the other disks in order to minimize data loss in the event of single disk failure.

A disk-to-disk backup reduces the voice message storage space available. Tape backups are still required to restore the system after multiple disk failures.

Meridian Mail backup devices for disk shadowed systems

Meridian Mail systems that have the disk shadowing option have two disk drives per node. On these systems, all data is written to both disks. In the event that one disk fails, the system automatically writes data to and reads data from the functioning disk until the faulty disk is replaced. The result is that there is no data loss.

Hardware basics

Disk drive failures

The Mean Time Between Failure (MTBF) of the disk drives used in Meridian Mail is 17 years for the 3-1/2 inch drives, 11 years for the 5-1/4 inch drives, and 5.7 years for the 8 inch drives. Note that this is the *mean time*; it does not mean that every drive can be expected to operate without failure for the full duration of this time.

The most common type of disk drive failure is a "media error" which results in an unrecoverable read error and loss of data. Media errors are caused by defects or scratches in the coating on the disk platters at one or more places in the drive. Once such defects occur, Meridian Mail system operation is likely to become unreliable unless repair action is taken.

When media errors occur, the disk drive automatically retries the read operation multiple times and attempts to recover the data using error correcting codes. If all attempts fail, the data is lost and an error is reported. Depending on which data block is lost, the system may or may not be affected greatly.

Related System Error and Event Reports (SEERs) may also be generated as higher-level software components report that they encountered a disk error. These other SEERs will usually mention the return code 1130. From these higher level SEERs, it is usually possible to determine what is being affected by the lost data and, therefore, how serious the impact will be.

If the disk error is something other than an unrecoverable read error, the error codes may be different.

Disk drive replacement and restore

Since system reliability is impaired by an unreliable disk, it is normally recommended that if a disk of a non-shadowed system generates errors, it should be replaced with a new disk and the data on that disk should be restored from the most recent backup.

Tape drive operation

Meridian Mail systems use industry standard 1/4" data cartridges. Data is recorded on multiple tracks on the tape. Each track runs from one end of the tape to the other end. At the end of the tape, the tape head is positioned to the next track and the tape direction is reversed.

The tape drive has a tape head assembly with multiple heads, two for each direction of tape movement. For each direction there are write heads and read heads.

All data blocks have an associated error checking code so that errors can be detected. After a data block is written on the tape, it is automatically checked by reading it back with the read head. If a block cannot be correctly read, it is written again. This allows a proper backup to be made even if the tape has media imperfections. A block will be rewritten up to 16 times before the user is informed of an error.

The tape drive detects the beginning and end of tape optically, by detecting holes in the tape. The drive can determine the exact type of tape inserted by the positions of the holes. Use only the types of tapes recommended for the tape drive.

Tapes can be write-protected by turning the rotating knob on the tape cartridge until the arrow points to SAFE. Any attempt to write on a write-protected tape will generate an error.

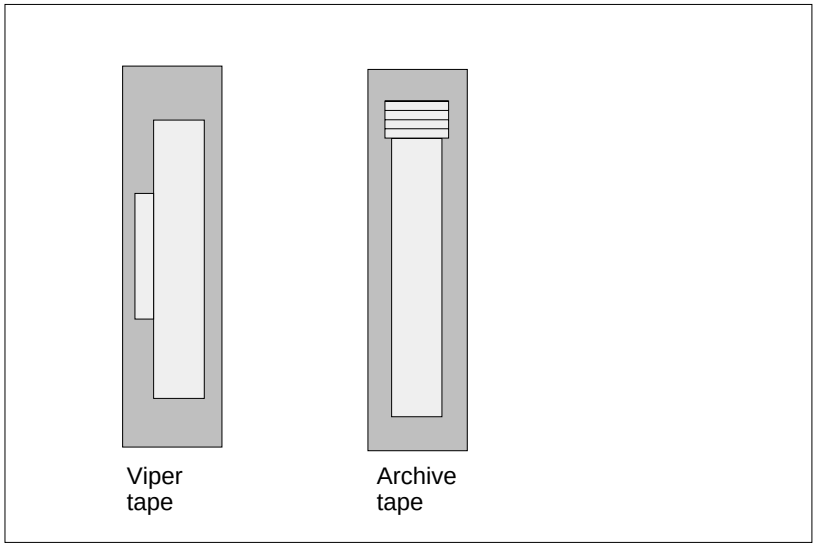
Cleaning tape heads

As a tape drive is used, debris collects on the tape heads. If too much debris collects, the tape drive is unable to write or read data correctly and the tape head must be cleaned. Note that this is not only a problem with Meridian Mail systems but is an inherent characteristic of high-capacity removeable media such as tapes and floppy disks.

The tape drive manufacturers recommend cleaning the tape heads after a brand new tape has been used for the first time, and after every 8 hours of tape drive operation. If media (parity) errors occur when reading or writing tapes, it is an indication of either a faulty tape or dirty tape heads.

The recommended tape cleaner is the Archive streamer head cleaner, Part No. 14916-001. To use the cleaner, follow the instructions included in the package, inserting the support arm in the end of the cartridge rather than the side of the cartridge (see Figure 15-1).

Figure 15-1
Side view of Viper and Archive tape cartridges



Retensioning tape cartridges

Tape cartridge manufacturers recommend that their tapes be retensioned when first inserted into the drive. This is done by winding the tape from one end to the other and back. Meridian Mail software automatically retensions tapes before writing or reading them to increase tape reliability. The retensioning takes about 2 minutes for a 450 ft (137.16 m) tape and about 5 minutes for a 1000 ft (304.80 m) tape.

Tape drive formats

Meridian Mail 10 systems will be supplied with the 2.5 Gigabyte Tandberg TDC4220 tape drive. The Tandberg can read and write tapes with a capacity up to 2.5 Gbytes and is backwards compatible with all existing MM tapes.

The Tandberg is shipped with all new MM10 systems. However, the Tandberg is not necessary to convert to the new release. Prior to MM10, Meridian Mail systems used a tape drive called Viper, manufactured by Archive Corporation (see Tables 15-1 and 15-2.)

Table 15-1
Tandberg tape drive assemblies

PEC code	Assembly code	Tape Assembly and platform location
NT6D45CA	A0629938	ModOp Assembly, 2.5 Gbyte tape drive module
NT6D47EA	A0629939	ModOp Sub Assembly, 300 Mbyte disk and 2.5 Gbyte tape drive unit
NT6D48EA	A0629940	ModOp Sub Assembly, 1.2 Gbyte disk and 2.5 Gbyte tape drive unit
NT4R28BA	A0629941	Shelf Option Sub Assembly, 2.5 Gbyte tape drive, MSU
NT6P05BA	A0630014	ModOp EC Sub Assembly, 2.5 Gbyte tape drive

Table 15-2
Archive tape drive assemblies

PEC code	Assembly code	Tape Assembly and platform location
NT4R28AC	A0372733	Viper tape drive assembly

Existing tapes written by Archive drives which the Tandberg can read include voice prompts written by the voice prompt transfer tool (VPTT), and full and partial backups.

The Tandberg and Viper drives can read and write on a number of tape formats. These tape formats are listed below (Table 15-3.)

Table 15-3
Tape drives supported in the field

Tape drive	Tape format	Tape media	Tape capacity
Tandberg 4220	QIC-24	DC300XL	40 Mbyte
	QIC-120	DC600	60 Mbyte
	QIC-150/QIC-150	DC6150/DC6250	155 Mb/250 Mbyte
	QIC-525	DC6525	525 Mbyte
	QIC-1000	DC9100	1 Gbyte
	QIC-2GB/QIC-2GB	Magnus 2.0/Magnus 2.5	2 Gb/2.5 Gbyte
Archive 2150	QIC-24 (R)	DC300XL	40 Mbyte
	QIC-150	DC6150/DC6250	155 Mb/250 Mbyte

Note: Both the Tandberg and the Archive drives can read the old QIC-24 format tapes, but neither drive can write on QIC-24 format.

The Viper drive can also read Tandberg backup tapes on 150 Mbyte or 250 Mbyte cartridges.

Note: The amount of data which can be written on a tape depends on the condition of the cartridge. If a cartridge has many media imperfections, it will store less data since blocks will have to have been rewritten.

Volume and backup information

Disk volume summary

A Meridian Mail system, depending on its size, may consist of one to five nodes with one or two disks per node. (Systems with disk shadowing can have two disks per node.) Each physical disk drive is divided into multiple *volumes*. Different types of data are stored in different volumes according to access and backup requirements.

If a volume name ends in "T", it is a *text volume* having a 1k block size. If it ends in "V", it is a *voice volume* having an 8k block size. Except for VS1 and VS2 which are both on node 1, the last two digits of a volume name are the node number on which it is stored. Card Option systems only have VS1.

Boot tracks

The operating system of all Meridian Mail systems (except Card Option) is stored in the first 1016k of the disk on node 1. The operating system is stored in the first 700k of the disk on node 1 for Card Option systems. These are not disk volumes in the normal sense. The boot tracks are rewritten as part of the node 1 disk initialization procedure.

VS1T

This volume is on node 1 and has a 1k block size. It is the *system volume* where program software, user directory, system distribution lists, organization profile, operational measurements, languages for Meridian Mail Card Option, prompt sets 3 and 4, and other system information is stored. It is on node 1 and has a 1k block size. This volume may also include the Voice Menus.

VS1V

This is a voice volume associated with VS1T. It stores the user personal verifications and may also store voice menus and announcements. Card Option stores the voice prompts. VS1V is on node 1 and has an 8k block size.

VS2T

This volume is on node 1. It stores languages one and two for all systems except Meridian Mail Card Option. (Meridian Mail Card Option languages are on VS1T.) It has a 1k block size.

VS2V

This is the voice volume associated with VS2T. It stores the voice portion of languages one and two.

VS2*xx*T

This is a *user volume*. It stores the cabinets, profiles, personal distribution lists, and message headers of users added to volume 2*xx*.

Note: xx is the node number. For example, VS205T is on node 5.

VS2*xx*V

The voice part of VS2*xx* holding user voice messages and greetings on node *xx*.

Note: xx is the node number. For example, VS205T is on node 5.

Types of backup

Full backup

A full backup copies all system and user data to tape. This includes all user voice messages, all user greetings and all voice menus. Due to the large amount of data, full backups may require many tapes and a considerable length of time to perform. Full backup can only be done to tape.

Partial backup

In most cases, it is sufficient to perform a partial backup rather than a full backup. The purpose of a partial backup is to save the administrative configuration of the system but not all the user voice messages and greetings. This saves the effort of reentering the user database and parameters should a disk drive fail. A partial backup saves the user directory, user profiles, personal distribution lists, system distribution lists, personal verifications, user passwords, operational measurements, network configuration and other system configuration information. Partial backup is not available on Card Option.

If a system is restored from a partial backup (a *partial restore*), the user mailboxes on the volumes restored will be empty and greetings will be lost. This is usually acceptable since voice messages are so transient that it is of little value to restore old voice messages.

The implementation of partial backup on a multi-node system differs from that on a single-node system. On a single-node system, partial backup is done by copying volume VS2T to tape. Single-node partial restore performs special operations to recover from the loss of the voice volume.

On a multi-node system, user profiles are copied one at a time to a backup volume on another node - this is the same process as is used for disk-to-disk backup. The backup volumes are then copied to tape. One implication of this is that a partial backup to tape overwrites the last disk-to-disk backup. The disk-to-disk backup data resides on node 1 and node 2. If both of these disks fail, the backup will be lost and no restore can be done.

On-line backup

Normally, an administrator will do an on-line backup while the system is still providing service. The on-line backup mechanism takes a "snapshot" of the state of the disk volume at the time the backup was started. This ensures that the data within a volume is consistent even though the volume may be changed during the time the backup is in progress.

On-line backups should not be done at hours of peak system usage since it increases the load on the disk drives. It cannot be performed between 1:00 a.m. and 5:30 a.m. since various system audit programs are active at this time. Backups can be performed automatically using the Schedule Backup feature. A temporary volume, VS*n*B, is created by an on-line backup.

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Reader's Response Form for

Meridian Mail
System Administration Guide (DMS) ,
555-7001-307,
August 1995

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DMS Family/SL-100

Meridian Mail

System Administration Guide

Nortel Customer Documentation,
522 University Ave., 12th Floor
Toronto, ON
Canada
M5G 1W7

Publication number: 555-7001-307
Product release: 10.0
Document release: Standard 1.0
Date: August 1995

Printed in the United States of America

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