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Meridian Mail

Message Services Module

System Installation and Modification Guide

Product release 10.0 Standard 02.01 March 1996

NORTEL

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Standard 02.01 of the *MSM System Installation and Modification Guide*. This version documents Product release 10.0 of Meridian Mail for the Message Services Module platform and makes all previous versions obsolete.

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This manual is released as Standard 1.0. This version documents Product release 9.0 of Meridian Mail for the Message Services Module platform.

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About this document

This document is intended to be used by service technicians who are familiar with Meridian Mail Message Services Module (MSM) operation and maintenance procedures.

Meridian Mail MSM Install/data tapes

These tapes are required for all off-line operations described in this guide. The operations include new system installation, conversion, upgrade, expansions (language, feature), hardware modification, and restore.

You may need additional Install/data tapes when installing specific combinations of languages. For more information, contact your local Nortel representative.

Note 1: For processes that require more than one tape, ensure that all necessary tapes are at the same release level.

Note 2: For all procedures other than installation, conversion, and upgrade, the tape version should match your disk version.

Chapter 1: Using system installation and modification software

Before starting

System installation and modification includes maintenance. To use system maintenance, the following preparations must be made:

- The Meridian Mail MSM system must be properly configured and in proper working order. Follow the procedure in Appendix B if a restore is necessary to bring it into normal working order.
- The system should be running the most recent software release (contact your support organization if you are unsure). This does not apply if you are upgrading, converting, or installing your system.
- Do a partial tape backup of your system as it currently exists. This will not include the user voice volume. A full backup, including the user voice volume, may take up to 24 hours. A full backup will not capture information which changes during the backup process (such as new voice messages or voice menus). A full backup should be done when a disk in a shadowed pair has failed.
- You must have the correct tapes at hand (see "About this guide" for tape information), including blank tapes for archiving.
- You must have the hardware necessary for the particular option (for example, modems for networking).
- You should have at hand the information necessary for software installation or expansion (read through the complete procedure before starting).
- If you have a printer attached to your terminal, set your terminal up so that the printer will be able to print anything that appears on the screen after the System Installation and Modification Menu appears. First, press <PrtScrn> to print the System Installation and Modification Menu. Then, press the <Ctrl> and <w> keys followed by <p>, which causes the system to automatically print whatever appears on the screen. Use the same command to toggle back to normal (non-printing) mode.

- Prior to starting any offline procedure in this document, perform a courtesy-down procedure to prevent calls from being abruptly terminated when the operation commences. Refer to the appropriate *System Administration Guide* for your system for courtesy-down instructions.

  Note 1: During all system maintenance procedures, SEER filtering will be reset to system level. Please reset to the original level once the procedure is complete. For more information, see the description of SEER filtering in the Introduction to *Maintenance Messages (SEERs)* (NTP 555-7001-510).

  Note 2: All procedures described in this guide are self-recovering in case of an error. If a problem occurs and the guide suggests a specific work-around procedure that is not successful, contact your support organization for assistance.

  Note 3: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to reinstall the system.

  Note 4: For all procedures other than installation, upgrade, and conversion, the tape version should match your disk version. The system will check the tape and disk versions. If the versions do not match, you will see the following message:

  Software versions on the tape and disk do not match.

  Please upgrade your software on disk prior to this operation.

Bootup procedures

You will be instructed to reboot the system following each offline operation in this guide. The reboot procedure follows.

Power down

Starting at the top shelf, power down each shelf in sequence towards the bottom shelf. Perform this as quickly as possible.

There are two power converters on each side of the shelf for a total of four converters per shelf. Each power converter has an on/off switch. To power down a shelf, simultaneously pull down the switches on all four converters (use two fingers from each hand). Proceed quickly to the next shelf.

Power up

Starting at the bottom shelf, power up each shelf in sequence towards the top shelf. Perform this as quickly as possible.

To power up a shelf, simultaneously push up the switches on all four power converters, using two fingers from each hand. Proceed quickly to the next shelf. After powering up the second disk shelf, pause for 20 seconds before powering up the primary electronics shelf. Then, quickly power up the secondary electronics shelf.

Allow all diagnostics to run without manual intervention. Rebooting the MSM should take 20 minutes or more depending on the number of nodes and default software configuration installed.

Node loading

As power is applied to each node, each 68K card goes through an initialization process. Included as part of the process is a check of the physical slot address to determine whether the 68K card is the primary or secondary multi-server processor (MSP). Any node other than an MSP places an "I’m alive" message in the transmit buffer of its system bus tap and waits to be polled.

The primary MSP boots from its locally attached disk drive. Once up, the MSP starts polling the other nodes according to its system map. On receiving the "I’m alive" message from a remote node, the primary MSP asks it to initiate its 68K firmware-based diagnostics.

If the primary MSP expects a node but receives no response to its poll, the node is reset and the MSP attempts to poll again. After three consecutive failures, the node is assumed to be dead and is placed in a faulty state.

After executing its 68K self-test, each node places its status in its own transmit buffer. Nodes that pass the self-test proceed in the boot sequence. Nodes that fail the self-test are marked faulty. Nodes that do not provide a response are also treated as faulty.

On successful completion of the diagnostics, the primary MSP loads and starts the appropriate application software.

The MSM system disks are configured to spin-up on receiving a SCSI command rather than at power-up. This allows the MSM to sequence its disk start-ups and, therefore, avoids a significant +12 V current surge that would occur if each disk spun-up in parallel.

Offline procedures

CAUTION
Risk of loss of service
Each of the offline procedures outlined in this guide will cause service to be interrupted.

Elements of the system are installed and modified while the system is offline. An example of how offline procedures are initiated is given in the following procedure.

Procedure 1-1
Displaying the System Installation and Modification Menu

1. Read through the entire procedure before starting any operation.
2. Insert the Install/data tape into the tape drive.

   Note: If any problems are encountered during the process, remove the Install/data tape before rebooting the system.

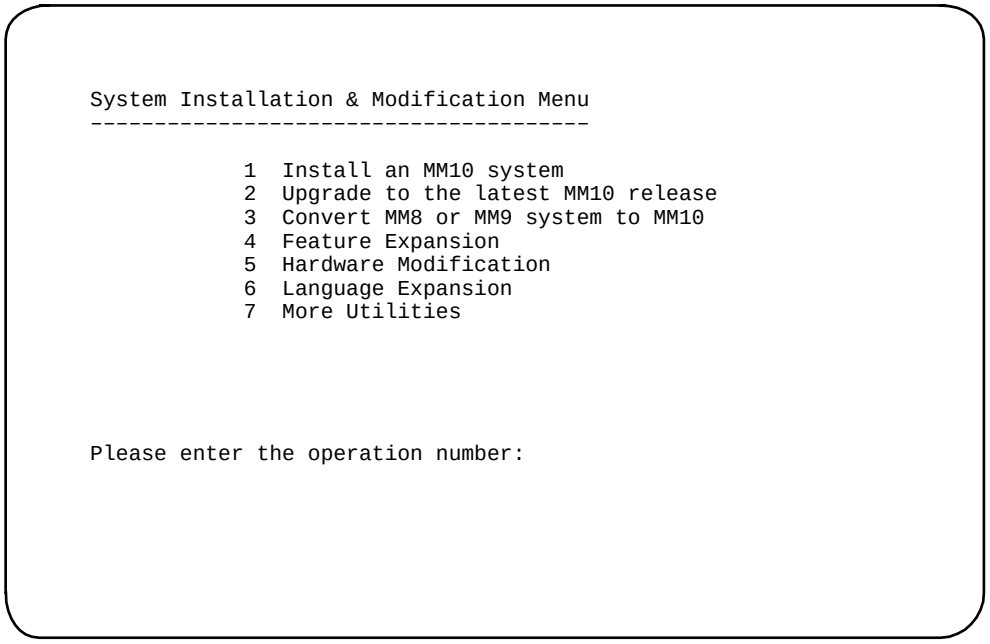
3. Reboot the system by turning off all power supplies affecting MSP1, wait ten seconds, then turn them on again.
4. The system automatically runs a series of diagnostic routines, followed by a pause of approximately five minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

   Tape retension

   Once the diagnostic routines are complete, the installation and modification software will be loaded from the tape. Depending on the number of nodes in the system, it will take between 5 and 10 minutes to load the software. Once loaded, the System Installation and Modification Menu will be shown.

   After a few minutes, the System Installation and Modification Menu will be displayed as shown in Figure 1-1.

Figure 1-1
System Installation and Modification Menu



5 Choose an item by typing its number or by pressing the up or down arrow keys until the required number appears. Then press <Return>. The system will ask you to confirm the selection. For example

You have chosen to modify the hardware configuration
Do you wish to continue? Yes (No)

If you wish to continue, choose Yes. If you do not wish to continue, change the Yes to a No by using the up or down arrow keys. If you select No, you are returned to the main menu.

The foregoing is an example only. Proceed to the appropriate chapter of this NTP for further instructions.

Chapter 2: Software installation

This chapter provides information about installing Meridian Mail MSM software. It contains details of when an installation should be performed as well as the installation process.

CAUTION
Risk of loss of service
Each of the off-line procedures outlined in this guide will cause service to be interrupted.

Software installation should take approximately 45 minutes plus 20 minutes for each additional language installed. Before beginning the procedure, make sure you have read and understood Chapter 1, "Using system installation and modification software".

If you have a printer attached to your terminal, set your terminal up so that the printer will be able to print anything that appears on the screen after the System Installation and Modification Menu appears. First press <PrtScrn> to print the System Installation and Modification Menu. Then press the <Ctrl> and <w> keys followed by <p>, which causes the system to automatically print whatever appears on the screen. Use the same command to toggle back to normal (non-printing) mode.

Note: Before performing the procedures outlined in this chapter, make sure that you have read Chapter 1 of this guide. Failure to do so could lead you to omit important steps in the process.

Procedure 2-1
Software installation

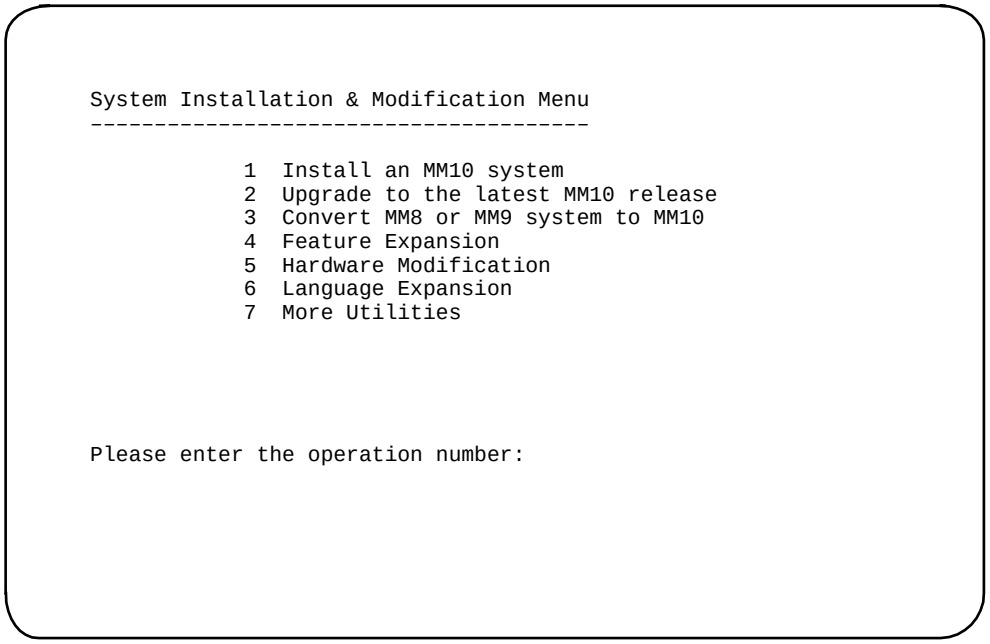
1. Power the system down. Refer to Chapter 1 of this document for details of the power up/power down procedures.
2. Insert the Install/data tape into the tape drive.
3. Power the system up. Refer to Chapter 1 for details.

4 The system automatically runs a series of diagnostic routines followed by a pause of approximately five minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

Tape retension

Once the diagnostic routines are complete, the Meridian Mail software is loaded from the tape. Depending on the number of nodes in the system, it takes between 5 and 10 minutes to load the software. Once loaded, the System Installation and Modification Menu (Figure 2-1) is shown.

Figure 2-1
System Installation and Modification Menu



5 Either enter the number for the desired operation or press the up or down arrow key until that number appears, then press <Return>. The following message is displayed:

You have chosen to install an MM10 system.
Do you wish to continue? Yes (No)

6 Press <Return> to select Yes. Select No with the up or down arrow key and you will be returned to the main menu.

Various operating system messages are displayed as files are written to the disk drives. This takes from three to five minutes.

7 You may then enter a user-assigned name at the following display. The name can be an alpha-numeric string of up to 30 characters. It cannot contain the characters ?, +,–, _, or *. To enter a user-assigned name, delete the default name (MeridianMail) and type in the chosen name, then press <Return>.

Customer Name : MeridianMail

8 You are now prompted to select the user interface for the primary customer.

Select MMUI to use the Meridian Mail User Interface, or VMUIF to use the Voice Messaging User Interface Forum. (MMUI is for business customers, and VMUIF is for residential customers.)

Please select the primary customers user interface : MMUI

9 You may use the up or down arrow key to toggle between MMUI and VMUIF. Select one, then <Return>.

You are then asked if you want to define any optional features.

Do you want to define optional features? No (Yes)

10 If your answer is no, press the up or down arrow key until the word No is displayed on the screen, then press <Return>. If you do want to define optional features select Yes and press <Return>. If you select No, the system causes you to jump to Step 12.

Please enter feature to enable : (feature name)

11 Select the appropriate feature name followed by <Return>. You may use the up or down arrow keys to move through the list of features. The system will again prompt you to select another feature. Once all desired features have been selected, use the up or down arrow keys to return to Done. Enter Done to continue. Clear deselects all features.

The features which are automatically enabled are

Selection	**Features enabled**
MM Voice Messaging	Meridian Mail Voice Messaging
MultiAdmin	Multi-Admin
Outcalling	Outcalling

The features which can be enabled are:

Selection	**Features enabled**
Access	Meridian Access
AdminPlus	AdminPlus
AMIS	AMIS (Analog) Networking
VoiceForms	Voice Forms
VoiceMenus	Voice Menus
Networking	Meridian Mail Networking
MultiSMDI	Multiple SMDI Links
FaxOnDemand	Fax On Demand
MConnect	Meridian Mail Connections
Multicustomer	Multi-Customer

Note 1: If Multi-Customer is enabled, then both user interfaces (MMUI [Meridian Mail User Interface], and VMUIF [Voice Messaging User Interface Forum]) are available on the system; otherwise, only the interface chosen in Step 9 is available.

Note 2: Multi-Customer is automatically enabled on systems with VMUIF.

12 After selecting Done, the features that are enabled are displayed.

The following features are enabled:

Feature name
Feature name (and so on)

If you selected No in Step 10, the following message will be displayed:

No features have been selected

The system will display a prompt to reenter features if they have been incorrectly entered or if none have been selected.

Do you wish to re-enter features? No (Yes)

13 Press the up or down arrow key until the desired action is displayed on the screen, then press <Return>. If you select No, the process continues with the next step; if you select Yes, you are returned to Step 10.

The hardware configuration is displayed next. For example

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	NVP12P	SBC
6	NVP12P	NVP12P	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1

Note: If your system is using GX06AA voice nodes, the following SEER message and warning will appear:

10020 Error – Old transition modules are detected

WARNING: All of the transition modules on the voice nodes are GX06AA, for MM10 they must be upgraded to GX06AB. After the operation is complete the transition modules should be changed before the system is booted into service.

A message will appear indicating the nodes that employ the new transition module(s).

14 You are prompted to verify the hardware configuration:

Is the configuration correct? Yes (No)

Enter Yes, then press <Return>.

If you enter No, you must power off the system, correct the problem, and rerun the process.

Note: The preceding hardware configuration is for a 48-port system. Other system sizes are shown in Table 2-1 at the end of this chapter.

15 The system then displays the various languages available on the Install/data tape. For example

Languages Available from this tape are:

You may include 4 more language(s).

1 – American English

2 – Canadian French

3 – Latin American Spanish

4 – Brazilian Portuguese

5 – German

6 – Japanese

7 – From another tape

Enter the number of the language you require (0 = done) : 1

For two or more languages, follow the screen prompts.

16 Press the up or down arrow key until the desired number is displayed on the screen, then press <Return>. If you choose 0 at this point, you are advised that you must choose at least one language, and the selection prompt is repeated.

17 Choose the appropriate entry and press <Return>. The system then responds with

You have chosen (language name)**.**
Is this correct? No (Yes)

18 Select Yes or No, as appropriate, and press <Return>. If you select No, the language prompt is repeated. The prompts will be repeated until the number of languages required have been selected or until you choose Done (0).

If you selected "From Another Tape", you will be prompted to remove the current tape and insert the new tape during Step 50 in this procedure. Follow the instructions on the screen.

19 The next step is to select the call progress tone detection (CPTD) country index number. See the following illustration. Press the up or down arrow key until the desired number is displayed on the screen, then press <Return>.

1 : Generic – Ver. Fe94	**2 : Australia**	**3 : Austria**
4 : Belgium	**5 : Canada**	**6 : Denmark**
7 : Finland	**8 : France**	**9 : Germany**
10 : Hong Kong PROVISIONAL	**11 : Ireland**	**12 : Italy**
13 : Japan	**14 : Netherlands**	**15 : New Zealand**
16 : Norway	**17 : Portugal**	**18 : Saudi Arabia**
19 : Singapore	**20 : Sweden**	**21 : Switzerland**
22 : Taiwan	**23 : Turkey**	**24 : United Kingdom**
25 : United States		

Please enter the CPTD country index number : <desired number>

20 Enter the CPTD index number, then press <Return>.

21 Next, the DSP parameters will be displayed. The defaults (in bold print) are those common to North America. If values other than the defaults are needed, use the up/down arrow keys to select (or key in) the required values, then press <Return>.

Please enter the DSP parameters.

ATTENTION

If the following DSP encoding parameter is set incorrectly, severely degraded voice quality may result.

DSP Encoding Type: MuLaw

Disable Silence Compression: No (Yes)

22 Press <Return>.

Do you wish to change other DSP parameters? No (Yes)

23 Press <Return>.

The following parameters are not changed in most installations and, as a result are only displayed if you select Yes above.

Transmit Level: 0 (–10 to +10 dBm)

Receive Level: 0 (–10 to +10 dBm)

DTR Reject Level: (–57) (–60 to –30) in 3 dBm increments

***DTR Max Accept Level: (1)** (–11, –8, –5, –2, 1, or 4 dBm)

Disable AGC: NO Yes

***AGC Center: –20** (–20 to –10 dBm)

TeleScan Ring Time: 1024 (224,1024) increments of 16

TeleScan Debounce: (128) (96, 112, 128, . . . 512) increments of 16

Hook Flash Pulse: (320) (304, 320, 336, . . . 1024) increments of 16

Do you wish to change the Fax specific DSP parameters: No (Yes)

***** This DSP parameter should not be modified. It is reserved for future enhancement.

Note 1: If you select Yes, you will be prompted to reenter DSP parameters, as listed below

Fax Transmit Level (dB): (–13) (–37 to –7) in 2 dB increments

CNG/CEO Gain (dB): (–6) (–12 to 0) in 2 dB increments

Equalizer : None (2.5dB, 5.5dB, 8.58dB)

Enter Poor Quality Page Threshold: 10 (1 to 100) increments of 1

Enter Rx CDET Threshold: –47 dB (–36 dBm, –43 dBm, –47 dBm)

Call Connect Timeout (sec): 35 (25 to 95) increments of 5

Handshake Timeout (sec): 7 (5 to 20) increments of 1

Switch Over Time (sec): 75

Response Timeout (100 ms): 35 (0 to 70) increments of 1

Training Length: 200 (75 to 100 data words**) increments of 25

V29/V27 CDET timeout (100 ms): 20 (10 to 40) increments of 1

*** 25 data words = 200 msec*

Note 2: The Fax specific DSP parameters will not be displayed if Fax On Demand is not installed.

Do you want to re-enter the DSP parameters? No (Yes)

Note 3: If you select Yes, you will be prompted to reenter DSP parameters, as listed above.

You are next asked to enter the number of MMUI mailboxes. The default is 1000.

Enter MMUI mailbox level: 1000

Range = 0 to 5291multiplied by the number of SPN nodes.

24 Backspace over the default number and key in the required number, then press <Return>.

You are next asked to enter the number of VMUIF mailboxes. The default is 1000.

Enter VMUIF mailbox level: 1000

Range = 0 to 5291 multiplied by the number os SPN nodes minus the number of MMUI mailboxes.

25 Backspace over the default number, key in the required number, then press <Return>.

You are next asked to enter the number of residential mailboxes. The default is 1000.

Enter Residential mailbox level: 1000

Range = 0 to 5291 multiplied by the number os SPN nodes minus the sum of MMUI and VMUIF mailboxes.

26 Backspace over the default number, key in the required number, then press <Return>.

You are next asked to enter the number of family mailboxes. The default is 1000.

Enter Family mailbox level: 1000

Range = 0 to VMUIF added to the sum of MMUI and Residential mailboxes.

27 Backspace over the default number, key in the required number, then press <Return>.

28 You are now notified of the T1 Spans available on the system:

The following T1 Spans are on this system:

All spans will be displayed after the mailbox levels have been entered.

If a system has 48 channels, prompts for Span A and Span B will appear. Similarly, for 72 channels, you will be prompted for Spans A through C and so on. For 192 channels, prompts for Spans A through H will be shown.

Note: If you have more than two spans, you are prompted to press <Return> to continue to display more spans.

Span A

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Span B

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Span C

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Span D

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Select operation: Display (Change, Done)

Select Display if you wish to see the T1 Span parameters again. You can choose the range of T1 spans that you wish to be displayed. The following example is given:

You are prompted to enter the start range.

From: SpanA

Press <Return>.

You are prompted to enter the end range. Use the up and down arrow keys to select the range you require.

To: SpanB

Press <Return>. The following T1 spans are displayed:

Span A		
Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Span B		
Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Select operation: Display (Change, Done)

29 Use the up and down arrow keys to select Change if you wish to change the parameters of some or all of the T1 spans.

You are prompted for a range of T1 spans to change before entering the 16 Span parameters. The following is an example:

From: SpanA

Press <Return>.

You are prompted to enter the range at which you wish to end. Use the up and down arrow keys to select the range you require.

To: SpanA

Press <Return>. The following T1 spans are displayed:

Select InternalBCTiming if the system is connected to the switch via channel banks; select ExternalT1Timing if connected to a DMS, DTC or DAX.

Sync Mode	**: ExternalT1Timing**	(InternalBCTiming)
Line signalling	**: DTMF**	(DP)
Line Intf Type	**: FXOGrdStart**	(FXOLoopStart, FXSGrdStart,FXSLoopStart, FourW_EnMtype)
Start Type	**: WinkStart**	(ImmedStart, DelayStart)
Trunk Type	**: NonDIDTrunk**	(DIDTrunk, ASPTrunk)
Frame Format	**: D4**	(ESF)
Line Code Format	**: B8ZS**	(B7, Transparent)
Line Length	**: 0 to 133**	(133to266, 266to399, 399to533, 533to655)
T1 Alarm	**: Bit_two**	(s_Bit)
T1_Debounce	**:130**	(50 to MAXINT)
T1_GuardTime	**:130**	(0 to MAXINT)
ESFD	**: 0**	(0 to 15)
BVCR	**: 0**	(0 to 255)
OOFD	**: 0**	(0 to 15)
Ring Pulse	**: 130**	(0 to MAXINT)
Hook Flash Pulse	**: 320**	(0 to MAXINT)

Select operation: Display (Change, Done)

Use the up and down arrows to toggle each selection.

30 Select Done when you are finished setting the T1 Span parameters.

Note: When the MSM is using Connections with an AT&T or ROLM switch, the hook flash pulse value must be set to 480.

31 You are then asked to define the T1 link information:

Please define the T1 Channels

If MultiSMDI is not enabled, the following prompt will appear:

You may only have ONE Link defined. Any attempt to create a new link will overwrite the previous definition.

Please enter the information to create or redefine a Link

32 Enter the required information.

Link ID: 1

Note 1: Link ID is the name of the SMDI link. The Link ID for each SMDI port is unique and must be entered at this time. You can enter either numeric or alpha characters in this field. It is recommended that you use a meaningful name (as opposed to a number) so that it is easy to identify the link.

The following is an example:

Login Code:	***85**	(See the entry for UCDA in Table IBNXLA in the *MSM Translations Guide* [NTP 557-7001-310].)
Logout Code:	***86**	(See the entry for UCDD in Table IBNXLA in the *MSM Translations Guide* [NTP 557-7001-310].)

Note 2: Blank out the Login and Logout codes if the channel is connecting to a PBX.

NRDD Code: ***88**

Switch Type: ****DMS100_Centrex** (DMS100_POTS, Meridian_SL100, AT&T_1A_EES, AT&T_5_ESS)

** If you need to modify the switch record data, please refer to* System Administration Tools *(NTP 557-7001-305).*

*** These selections are available without MConnections; with MConnections, the added selections available are: Meridian_1, DMS_10, AT&T_PBX, ROLM_PBX.*

Agent Position ID: **9999**

Are done defining Links ? Yes (No)

33 Use the up or down arrow keys to select Yes if you have completed defining all of the SMDI links on the system.

or

Use the up or down arrow keys to select No in order to define another link or to redefine an existing link. If you redefine an existing link (by using a link ID that has already been defined), you will be prompted:

WARNING: This LinkID has already been defined, the previous definition will be overwritten.

Are you sure? No (Yes)

If you do not have the feature MultiSMDI enabled (so there can only be one SMDI link defined) and you choose to define another link (or redefine an existing link) you will be prompted:

WARNING: Only one LinkID can be defined, the previous definition will be overwritten.

Are you sure? No (Yes)

34 Use the up or down arrow keys to select Yes to overwrite the link information or No to leave the link as it was.

Would you like to re-enter this information? No (Yes)

35 Use the up or down arrow keys to select No if you have completed defining all the links, and are ready to continue with the software installation.

WARNING: If you select Yes to reenter link information, any changes that you have just made will be lost.

36 You are then asked to define the T1 hardware locations:

Span	---------- T1 Hardware Location ----------																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
3	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

Select operation: DetailedDisplay (Change, Done, Summary)

The following are options for Select operation:

DetailedDisplay: This is used to view the settings for a single channel or a range of channels.

Change: This is used to enter the settings for a single channel or a range of channels. The parameters for each channel within the selected range are set to the value entered, except for DN and message terminal. They start with the value entered and are incremented by one. See the following sample settings, starting at "Port Type".

Summary: This is used to view a summary of all the channels and their type (M = Multimedia, V = full service voice, Vb = basic service voice).

Done: This is used to commit the channel settings and continue.

The following is an example of the information displayed during a DetailedDisplay.

Number	DN	Type	UCDDN	Login Code	Logout Code	Msg. Term	LinkID	AgtPosn
1	2800	V	3650	*85	*86	1	1	9999
2	2801	V	3650	*85	*86	2	1	9999
3	2802	V	3650	*85	*86	3	1	9999
4	2803	V	3650	*85	*86	4	1	9999

37 Change the T1 Hardware Locations to match the desired system configuration.

Note: When defining the T1 hardware locations, in particular the Link ID, you must use the up and down arrow keys to choose a previously defined Link ID, and then press <Return> to select it.

The following is an example of the method used to change T1 hardware locations.

38 When you press <Return> after the Change prompt, you will be given the opportunity of changing the port assignments. A display similar to the following will be shown. At each line the values may be changed.

Port Type **: MultiMedia** (Voice_Basic, MultiMedia)

First Span **: 1**

First Location **: 1**

Last Span **: 1**

Last Location **: 6**

DN **: 2800** (This is the default. The values may be up to seven digits. See the Service Orders section of the *MSM Translations Guide* [NTP 557-7001-310].)

Link Type **: SMDI** (ASP, SCAI, CSL)

UCDDN **: 3650** (See Table DNROUTE in the *MSM Translations Guide* [NTP 557-7001-310].)

Link ID **: 1** (The link ID must match one of the SMDI links that was previously defined.)

Message Desk **: 63** (See message desk field in Table UCDGRP in *Translations Guide* [NTP 557-7001-310].)

Message Terminal **: 1** (Agent DN for DMS)

Select operation: DetailedDisplay (Change, Done, Summary)

39 Once you have finished defining all the T1 hardware locations, use the up or down arrow keys to select Done.

Span	**---------- T1 Hardware Location ----------**																							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
1	M	M	M	M	M	M	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	--	--	--
2	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
3	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
4	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb

Is this correct? No (Yes)

40 Using the up or down arrow keys, select Yes if the summary displayed is correct, or select No to return to Step 36 and continue changing the T1 hardware locations.

You then define the VP hardware location:

Node	----------VP Hardware Location ----------																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
3	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
5	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
6	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

Select operation : Summary (Change, Done)

The following are options for Select operation:

Summary: This is used to view a summary of all the channels and their type.

Change: This is used to enter the channel type (Voice_Basic, Voice_Full, or MultiMedia), for a range of channels.

Done: This is used to commit the channel settings and continue.

The following is an example of the method used to change VP hardware locations.

41 Change the VP Hardware Locations so that the number of each type defined matches the number of each type defined for the T1 hardware locations.

The following is an example of the method used to change VP hardware locations:

Port Type **: MultiMedia** (Voice_Basic, MultiMedia)

First Node **: 3**

First Location **: 1**

Last Node **: 3**

Last Location **: 9**

Select operation **: Done** (Change, Summary)

Note: 1 Multimedia locations must be selected in multiples of three (3), beginning at 1, 4, 7, 10, 13, and so on. Locations may be configured across multiple nodes at one time.

Note: 2 The number of multimedia ports selected must be equal to the number of T1 locations configured.

42 When you have finished making changes, select Done, and a summary of the VP hardware locations will be displayed.

Node	----------VP Hardware Location ----------																						
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
3	M	M	--	M	M	--	M	M	--	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
4	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
5	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
6	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb

Is this correct? No (Yes)

43 Use the up or down arrow keys to select Yes to continue. Select No to return to Step 41, and continue changing the VP hardware locations.

The next system action is to display the dataports. For example

Node	Card	Type	Port 1	Port 2	Port 3	Port 4
1	**2**	**SBC**	CONSOLE	**CON0122**	**PRT0123**	**PRT0124**
2	**3**	**SBC**	CONSOLE	**CON0232**	**CON0233**	**PRT0234**
3	**1**	**SBC**	**MOD0311**	**MOD0312**	**MOD0313**	**MOD0314**
4	**3**	**SBC**	**MOD0431**	**MOD0432**	**MOD0433**	**MOD0434**
5	**3**	**SBC**	**MOD0511**	**MOD0512**	**MOD0513**	**MOD0514**
6	**3**	**SBC**	**MOD0631**	**MOD0632**	**MOD0633**	**MOD0634**
13	**3**	**SBC**	**MOD1331**	**MOD1332**	**MOD1333**	**MOD1334**
14	**1**	**SBC**	**MOD1411**	**MOD1412**	**MOD1413**	**MOD1414**

Note 1: The bold dataport locations indicate that they may be changed. When they are changed, the above table will display the new selection.

Note 2: The preceding displayed dataports are default assignments for the system.

Note 3: For detailed information on dataports for the MSM and port configuration, refer to the *Planning and Engineering Guide* (NTP 557-7001-100).

Please assign the data port locations.

You will now be presented with the Select operation prompt.

Select operation : Display (Reset, Redraw, Change, Done)

The options are as follows:

Display is used to display a list of all the dataports to view a summary of all the channels and their type.

Reset is used to reset the dataports to what they were before changes were made in the present session.

Redraw is used to clear the display screen if irrelevant characters appear. The present display is refreshed and reappears on the screen.

Change is used to reconfigure the dataports by changing their type.

Done is used to show that dataport configuration is complete. Proceed with operation.

44 To modify a dataport, select Change using the up and down arrow keys and press <Return>. As an example, the following line is displayed:

Node 1 Card 2 Port 2 CON0122

45 Use the up and down arrow keys to change the port to MODEM, CON, SMDI, PRINTER, ADMIN, ACCESS, or UAT, or keep the CON0122 assignment.

If, for example, you choose MODEM, your choice is displayed as follows:

Node 1 Card 2 Port 2 MODEM

46 Once you have made your choice, press <Return> to enter your dataport selection. The next line will be displayed automatically.

Continue this process until you have selected all the dataports.

The following notes describe certain dataport requirements:

Note 1: Depending on the features installed, the system may ask you to define specific dataports. For example, the feature Access requires at least one Access port, while AdminPlus can have only one dataport.

Note 2: Because Multi-admin is automatically enabled on the system, a UAT dataport is required to be assigned.

Note 3: The total number of Access and AdminPlus ports may not exceed eight on a system.

Note 4: Depending on the type of dataport, you may be required to provide more information such as link ID, baud rate, and link redundancy.

Note 5: Not all dataports can be configured for all dataport types.

If you designate a port with the Access or AdminPlus feature, you are prompted to select the baud rate after pressing <Return>. Select the baud rate using the up and down arrow keys and press <Return>.

The following notes describe baud rate requirements for Access and AdminPlus dataport selection:

Note 6: Available baud rates for an Access designated port are 4800 and 9600 Baud.

Note 7: Available baud rates for an AdminPlus designated port are 2400, 4800, and 9600 Baud.

Note 8: The maximum cumulative baud rate for Access and AdminPlus dataports is 9600 Baud per node.

If you designate a port as SMDI and press <Return>, a Link ID will be entered automatically. Use the up and down arrow keys to select another link ID if required. Press <Return> once you have selected.

Having designated an SMDI port, you are now asked to provide a baud rate.

The following notes describe Link ID and baud rate requirements for SMDI dataport selection:

Note 9: If you designate a port as SMDI, you will be prompted to enter the link ID before the baud rate.

Note 10: Available baud rates for an SMDI designated dataport are 1200 and 2400 Baud.

Finally, you are asked if the link is redundant. Select Yes if you wish to have partnered locations. Press <Return>. The partnered locations will be displayed. See the example below.

Note 11: Selecting No will not provide you with a redundant link.

The following is an example of the interface during the changing of dataport assignments:

Node 1 Card 2, Port 2 CON0122
Node 1 Card 2, Port 3 UAT
Node 1 Card 2, Port 4 PRT0124
Node 2 Card 3, Port 2 CON0232
Node 2 Card 3, Port 3 PRT0233
Node 2 Card 3, Port 4 PRT0234
Node 3 Card 1, Port 1 ACCESS
Select the Baud Rate : 4800 (9600)
Node 3 Card 1, Port 2 MOD0312
Node 3 Card 1, Port 3 MOD0313
Node 3 Card 1, Port 4 MOD0314
Node 4 Card 3, Port 1 ADMIN
Select the Baud Rate : 2400 (4800, 9600)
Node 4 Card 3, Port 2 MOD0432
Node 4 Card 3, Port 3 MOD0433
Node 4 Card 3, Port 4 MOD0434
Node 5 Card 3 Port 1 MOD0531
Node 5 Card 3, Port 2 MOD0532
Node 5 Card 3, Port 3 MOD0533
Node 5 Card 3, Port 4 MOD0534
Node 6 Card 3, Port 1 MOD0631
Node 6 Card 3, Port 2 MOD0632
Node 6 Card 3, Port 3 MOD0633
Node 6 Card 3, Port 4 MOD0634
Node 13 Card 3, Port 1 SMDI1331
Enter the Link ID : 1
Select the Baud Rate : 2400 (1200)
Is this link redundant : Yes (No)
Partnered locations : Node 13 Port 1 and : Node 14 Port 1

Node 13 Card 3, Port 2 MOD1332
Node 13 Card 3, Port 3 MOD1333
Node 13 Card 3, Port 4 MOD1334
Node 14 Card 1, Port 2 MOD1412
Node 14 Card 1, Port 3 MOD1413
Node 14 Card 1, Port 4 MOD1414

47 After the last change has been made, an updated dataport display will appear on the screen.

The following is an example of the updated display:

Node	Card	Type	Port 1	Port 2	Port 3	Port 4
1	2	SBC	CONSOLE	CON0122	UAT	PRT0124
2	3	SBC	CONSOLE	CON0232	CON0233	PRT0234
3	1	SBC	ACCESS	MOD0312	MOD0313	MOD0314
4	3	SBC	ADMIN	MOD0432	MOD0433	MOD0434
5	3	SBC	MOD0511	MOD0512	MOD0513	MOD0514
6	3	SBC	MOD0631	MOD0632	MOD0633	MOD0634
13	3	SBC	M SMDI1331	MOD1332	MOD1333	MOD1334
14	1	SBC	S SMDI1411	MOD1412	MOD1413	MOD1414

Select Operation : Display(Reset, Redraw, Change, Done)

If you select Display, the following screen will appear:

Note: You will be prompted to press <Return> to continue to display more of the following dataport display.

The following dataports are on this system:

Node 1 , Type SBC , Port 1: Dataport Name = CONSOLE
Node 1 , Type SBC , Port 2: Dataport Name = CON0122
Node 1 , Type SBC , Port 3: Dataport Name = UAT
Node 1 , Type SBC , Port 4: Dataport Name = PRT0124

Node 2 , Type SBC , Port 1: Dataport Name = CONSOLE
Node 2 , Type SBC , Port 2: Dataport Name = CON0232
Node 2 , Type SBC , Port 3: Dataport Name = PRT0233
Node 2 , Type SBC , Port 4: Dataport Name = PRT0234

Node 3 , Type SBC , Port 1: Dataport Name = ACCESS
Baud Rate = 4800
Node 3 , Type SBC , Port 2: Dataport Name = MOD0312
Node 3 , Type SBC , Port 3: Dataport Name = MOD0313
Node 3 , Type SBC , Port 4: Dataport Name = MOD0314

Node 4 , Type SBC , Port 1: Dataport Name = ADMIN
Baud Rate = 2400

```
Node 4 ,  Type      SBC ,    Port 2: Dataport Name = MOD0432
Node 4 ,  Type      SBC ,    Port 3: Dataport Name = MOD0433
Node 4 ,  Type      SBC ,    Port 4: Dataport Name = MOD0434

Node 5 ,  Type      SBC ,    Port 1: Dataport Name = MOD0431
Node 5 ,  Type      SBC ,    Port 2: Dataport Name = MOD0432
Node 5 ,  Type      SBC ,    Port 3: Dataport Name = MOD0433
Node 5 ,  Type      SBC ,    Port 4: Dataport Name = MOD0434

Node 6 ,  Type      SBC ,    Port 1: Dataport Name = MOD0631
Node 6 ,  Type      SBC ,    Port 2: Dataport Name = MOD0632
Node 6 ,  Type      SBC ,    Port 3: Dataport Name = MOD0633
Node 6 ,  Type      SBC ,    Port 4: Dataport Name = MOD0634

Node 13 , Type      SBC ,    Port 1: Dataport Name = SMDI1331 (Master)
                                     Baud Rate   = 2400
                                     Link ID     = 1
Node 13 , Type      SBC ,    Port 2: Dataport Name = MOD1332
Node 13 , Type      SBC ,    Port 3: Dataport Name = MOD1333
Node 13 , Type      SBC ,    Port 4: Dataport Name = MOD1334

Node 14 , Type      SBC ,    Port 1: Dataport Name = SMDI1411 (Slave)
                                     Baud Rate   = 2400
                                     Link ID     = 1
Node 14 , Type      SBC ,    Port 2: Dataport Name = MOD1412
Node 14 , Type      SBC ,    Port 3: Dataport Name = MOD1413
Node 14 , Type      SBC ,    Port 4: Dataport Name = MOD1414
```

Select Operation : Display(Reset, Redraw, Change, Done)

48 If you are satisfied with the configuration of the displayed dataports, select Done and press <Return>; otherwise select Change using the up and down arrow keys to go back and insert or delete dataport assignments.

Once you select Done, the dataports are checked by the software to ensure that no dataport designation rules have been broken. The operation continues with the prompts shown in Step 49 if there are no errors.

If the dataports have not been set up properly, a diagnostic message(s) will be displayed that tells you what ports may still need to be assigned or what port assignment error(s) has been made. Some of the diagnostic messages you may encounter will indicate the following:

- *There are too many or too few dataports of a particular type on a node.*
- *A dataport of a particular type selected on a T1 node does not function properly on that node.*

The following are specific diagnostic messages that may be displayed:

- *Not all SMDI ports are redundant.*
- *Multiadmin without a UAT port.*
- *Networking without two modem ports.*

- *The cumulative baud rate for a dataport on a specific node exceeds the allowable baud rate.*

If an error has been committed, you will be asked to go back and make changes.

In general, note the diagnostic messages and choose Yes to return to the Select Operation prompt. Select Change as you did in Step 44 and alter the port assignments where applicable. If you select Reset, the changes you had made previously are deleted and you start again with the default dataport assignments.

49 When the diagnostic messages have been addressed, select Done. The following prompts will be displayed:

All required information has been input.
Do you wish to continue, re-enter information or abort? Continue

50 This is the final operation for software installation. If you previously selected "From another tape" for language expansion, you will be prompted to remove the current tape, insert the new tape, and repeat Step 15 after the system files and the languages which were selected on the initial tape have been copied. (This will take about 45 minutes.)

51 If you select Continue, the system runs a variety of routines, ending as indicated below. If you select Re-enter, you are returned to the beginning of this procedure and may review and/or change information as it is presented again. If you select Abort, all changes made to this point will be lost. The final messages are

The system has been installed.
Please remove the tape and boot to full service.
#TAPE:MMTAPE1>

Boot to full service

Use the following steps to boot to full service:

1 Remove the tape.

2 Turn the power off.

3 After approximately 10 seconds, turn the power on again.

After booting, the Meridian Mail MSM logon screen will appear and normal operation can commence. This will take from 10 to 15 minutes per node. Refer to Chapter 1 for details on rebooting, power-up, and power-down procedures.

Note: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to reinstall or modify the system.

Table 2-1 Card/Node configurations—48-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1

Table 2-2 Card/Node configurations—72-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	EMPTY	SBC
6	NVP12P	EMPTY	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1

Table 2-3 Card/Node configurations—96-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	NVP12P	SBC
6	NVP12P	NVP12P	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1

Table 2-4 Card/Node configurations—120-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	NVP12P	SBC
6	NVP12P	NVP12P	SBC
7	SBC	NVP12P	EMPTY
8	NVP12P	EMPTY	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1
15	T1	EMPTY	SBC
16	SBC	EMPTY	T1

Table 2-5 Card/Node configurations—144-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	NVP12P	SBC
6	NVP12P	NVP12P	SBC
7	SBC	NVP12P	NVP12P
8	NVP12P	NVP12P	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1
15	T1	EMPTY	SBC
16	SBC	EMPTY	T1

Table 2-6 Card/Node configurations—168-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	NVP12P	SBC
6	NVP12P	NVP12P	SBC
7	SBC	NVP12P	NVP12P
8	NVP12P	NVP12P	SBC
9	NVP12P	EMPTY	SBC
10	NVP12P	EMPTY	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1
15	T1	EMPTY	SBC
16	SBC	EMPTY	T1

Table 2-7 Card/Node configurations—192-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	NVP12P	SBC
6	NVP12P	NVP12P	SBC
7	SBC	NVP12P	NVP12P
8	NVP12P	NVP12P	SBC
9	NVP12P	NVP12P	SBC
10	NVP12P	NVP12P	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1
15	T1	EMPTY	SBC
16	SBC	EMPTY	T1

Chapter 3: Software upgrade

This chapter tells you how to upgrade a Meridian Mail MSM system.

Upgrade

Upgrading is the process of changing the system software within a given release. Upgrading does not allow users to modify the system in any way. Features, hours, languages, and hardware cannot be changed during an upgrade. If a user wishes to install new features, the system must first be upgraded then, expanded to permit the desired features.

CAUTION
Risk of loss of service
Each of the off-line procedures outlined in this guide will cause service to be interrupted.

Perform a courtesy-down procedure before starting an upgrade. This will prevent calls from being abruptly terminated when the operation commences.

If you have a printer attached to your terminal, set your terminal up so that the printer will be able to print anything that appears on the screen after the System Installation and Modification Menu appears. First press <PrtScrn> to print the System Installation and Modification Menu. Then press the <Ctrl> and <w> keys followed by <p>, which causes the system to automatically print whatever appears on the screen. Use the same command to toggle back to normal (non-printing) mode.

Note: Before performing the procedures outlined in this chapter, make sure that you have consulted Chapters 1 and 2 of this guide. Failure to do so could lead you to omit important steps in the upgrade or conversion process.

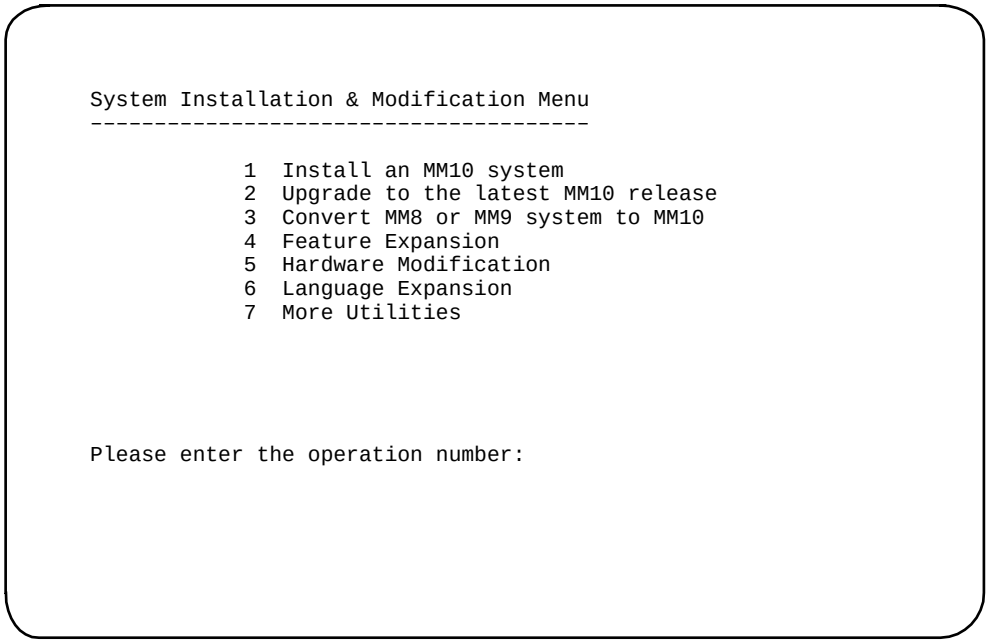
Procedure 3-1
Upgrade MSM

1. Power the system down. Refer to Chapter 1 of this document for details of the power down procedures.
2. Insert the Install/data tape into the tape drive.
3. Power the system up. Refer to Chapter 1 for details.
4. The system automatically runs a series of diagnostic routines followed by a pause of approximately five minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

   Tape retension

   Once the diagnostic routines are complete, the Meridian Mail software is loaded from the tape. Depending on the number of nodes in the system, it takes between 5 and 10 minutes to load the software. Once loaded, the System Installation and Modification Menu (Figure 3-1) is shown.

Figure 3-1
System Installation and Modification Menu



5. Either enter the number for the desired operation or press the up or down arrow key until that number appears, then press <Return>.

   The following message will be displayed:

   You have chosen to upgrade to the latest MM10 software
   Do you wish to continue? Yes (No)

6. Press <Return> to select Yes. Select No with the up or down arrow key, and you are returned to the main menu.

   Checking system version . . . . .

Various operating system messages will be displayed as files are written to the disk drives. This will take from three to five minutes.

Note: Disk shadowing is disabled at the start of an upgrade. The following warning will be displayed on the console when the shadowing is disabled:

Disk shadowing has been disabled.
Please re−enable disk shadowing manually in the MMI
after the operation has completed and
the system has passed sanity test.

Once the warning is displayed, even if you abort the operation, disk shadowing will have to be manually enabled when the system is brought back into service.

7 If the system has languages stored on another tape, you will see the following prompt (after all the required software and languages have been copied from the first tape—this takes about 45 minutes):

Shutting down tape server
Please remove the tape currently in the tape drive
Hit <CR> to continue

8 Remove the tape and press <Return>.

Please insert Install/Data tape
Hit <CR> to continue

9 Insert the new tape and press <Return>. If another tape is required, repeat Steps 7 to 8.

The software upgrade will take approximately 30 minutes, plus 20 minutes per language installed. The procedure continues without further intervention until the following message appears:

The operation successfully completed.
Remove the tape when it finishes rewinding and boot into service

Boot to full service

Follow the steps outlined in Procedure 3-2 to boot to full service:

Procedure 3-2
Booting to full service

1 Remove the tape.

Note: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to reinstall or modify the system.

2 Turn the power off.

3 After approximately 10 seconds, turn the power on again. Refer to Chapter 1 for details on rebooting, and power-up and power-down procedures.

After booting, the Meridian Mail MSM logon screen will appear and normal operation can commence. This will take from 10 to 15 minutes per node.

If the following message appears after rebooting, do a sanity test by placing a call to a mailbox on the system:

Warning: the disks have not been synched

— If the sanity test passes (that is, you hear a voice mail response or are satisfied with the results, or both), synch the disks.

For specific information on disk synching, see the chapter entitled "System Status and Maintenance" in the System Administration Guide (NTP 557-7001-30x). If you are not satisfied, go to the next step.

— If the sanity test fails (that is, there is no voice response), reboot the system and manually synch the disks *from the shadow disk to the prime disk.*

For specific information on this process, refer to Procedure 3-3.

Procedure 3-3
Synch disks from shadow disk to prime

ATTENTION

If you wish to return to your previous system, use your previous release tapes and the following restore procedure.

The following steps are necessary for re-syncing from shadow disk to prime:

1 Power the system down.

2 Insert the previous release of the Install/data tape.

3 Power the system up again.

4 Select for More Utilities from the System Installation and Modification menu.

5 From the System Operations Utilities menu select Exit to Support level.

6 Type the following at the prompt:

fork #tape:mmtape1:prm_tape <Return>

7 Type the following at the prompt:

fork ci[x] <<:CONSOLE:Nx >>:CONSOLE:Nx <Return>

where x is replaced by the odd numbered node, starting with node 3. Repeat this step for each odd node on the system.

8 Next enter the following at the prompt:

load #tape:mmtape1:software:spm.mirror_pkg <Return>

Enable 1 <Return>

9 At the following prompt, press <Return> to accept the default buffer size of 64K:

Buffer size (K): 64

10 In order to get the CobraVT window, press <Control-W>.

11 Move the cursor up or down to N3 and press <Return>.

12 Next, enter the following at the prompt:

load #tape:mmtape1:software:spm.mirror_pkg <Return>

13 To start synchronizing the disks, type the following at the prompt:

Enable 1 <Return>

14 When prompted for the buffer size, press <Return> to accept the default size (64K):

Buffer size (K): 64

15 Repeat steps 10 through 14 for each remaining voice node (SPN) in the range N5, N7, N9.

16 Wait until all nodes have generated the following SEER indicating that the disks are synched:

INF 6601 ADMIN

17 Remove your Install/data tape and reboot to full service.

Note: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to reinstall or modify the system.

Chapter 4: Conversion

What is conversion?

Conversion is the process of changing from one release to another. For example, you can convert from Meridian Mail Release 8.0 to Meridian Mail Release 10.0.

Points to consider about conversion

- The entire procedure could take from 30 minutes to more than 2 hours, depending on volume sizes and the number of users. This is due to the fact that the system audits all of the volumes.
- Conversion converts *only* the release. It does not allow the addition of features, nodes, storage hours, or additional hardware. These operations must be done through separate system operations.
- The operation will run quickest and the system will perform best if the users are distributed evenly across all nodes.
- Direct conversion is supported for the releases of MM8 and MM9.
- Voice volumes should be less than 90 percent full, and the system text volume should be less than 85 percent full to ensure that there is sufficient space to perform a conversion to Release 10.0. Space can be recovered in the system text volume by asking all users on the system to clean out their mailboxes.
- In MM10 you may want different features or a different number of languages than you had in the previous release. However, you will have to perform separate system operations in order to effect those changes. For example, to add more nodes to the system, you must run the hardware modification utility after you complete conversion for the changes to take place. See Chapter 1, "Overview: read me first" in this manual for the order of operations.
- Conversion will use your current local call sender permission/ restriction settings.

CAUTION
Risk of failure or premature stoppage of conversion
If you are converting and you receive a message telling you that the new operating system has been copied to the system, you **must** either complete the operation or restore the **old** operating system. Follow the recovery steps outlined at the end of this chapter.

If you are interrupted during the process (such as by a power failure), you may boot the system and rerun the conversion program.

What to do before you start

1 Make sure that you have read and understood Chapter 1, "Using system installation and modification software" in this manual.

2 Go to the Disk Usage Detail report under Operational Measurements to make sure all of the users are equally distributed across nodes.

3 Identify what hardware dependent features are going to be added in MM10 after the conversion, and make sure that the appropriate hardware has been installed (that is, the existing voice card must be replaced with the NTGX12AB).

4 Make sure all transition modules on the SPN nodes are upgraded to GX06AB *before* the conversion.

Note 1: For MM8, systems and transition modules must be updated.

Note 2: Remember that in order to install hardware dependent features, you will have to perform a Hardware modification and then a Feature expansion. See Chapter 5 "Feature expansion", for more information.

5 Go to the Voice Security Options screen under Voice Administration, and make sure that the *local* Call Sender Restriction/Permission settings are currently appropriate. You must do this because, during the conversion, the system automatically chooses this local Restriction/Permission list for the new release.

6 Perform a *partial* backup of the database.

CAUTION
Back up your system prior to conversion
Make sure you have a PARTIAL backup of your system prior to conversion in the event that problems occur during this procedure. You can perform a partial backup; however, messages and prompts will not be backed up.

7 Enable SEER printing. Go to the General Options Screen under General Administration in order to do this.

8 Enable your terminal's auto-print mode (<Control–W> followed by <P>) in order to capture everything that appears on your screen.

9 Make sure that there is paper in the printer. (If your printer runs out of paper during the procedure, your screen will freeze.)

10 Obtain the Meridian Mail Release 10.0 Install/data tape.

11 Obtain your old release Install/data tape. This is important in the event that a problem occurs during this procedure or the tape is corrupted. You may have to reinstall the old release of the software.

12 If your Install/data tape does not contain all of the languages you require for your system, you will be prompted to insert another tape. Ensure that you have this tape available before starting this procedure.

Performing a System Conversion

Procedure 4-1
Performing a Conversion

1 From the System status and maintenance menu, go to the System status screen and perform a courtesy-down procedure on the system prior to commencing any of the following steps.

This will prevent calls from being abruptly terminated when the operation commences. For more information, see the System Administration Guide, (NTP 557-7001-30x), for your system.

2 Power the system down.

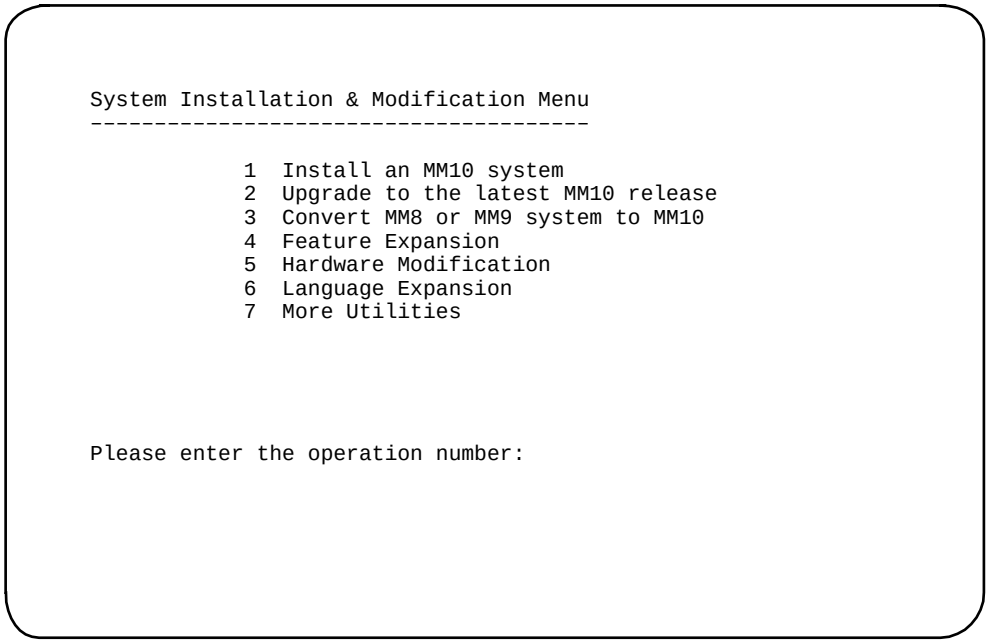
3 Insert the Install/data tape into the tape drive.

The system automatically runs a series of diagnostic routines followed by a pause of approximately 5 minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

Tape retension

Once the diagnostic routines are complete, the Meridian Mail software will be loaded from the tape. Depending on the number of nodes in the system, it will take between 5 and 10 minutes to load the software. Once loaded, the System Installation and Modification Menu (Figure 4-1) will be shown.

Figure 4-1
System Installation and Modification Menu



Please enter the operation number:

4 Using the up and down arrow keys, choose the number for the operation that you require, then press <Return>.

You have chosen to convert to the MM10 release. Do you wish to continue? No (Yes)

5 Press the up or down arrow key until the word Yes is displayed on the screen, then press <Return>.

After a few seconds, the following prompt appears letting you know that the procedure has begun.

Package MMCNV_PKG loaded

Your MM9 system will be converted to the MM10 release.

Note: If you have an MM8 system, the above message will read, "Your MM8 system will be converted to the MM10 release."

Next you are informed that disk shadowing has been disabled:

Disk shadowing has been disabled. Please re–enable disk shadowing manually in the MMI after the operation has completed and the system has passed sanity test.

Once the warning is displayed, even if you abort the operation, disk shadowing will have to be manually enabled when the system is brought back into service.

Now the system displays the following conversion prompt:

Reading MM9 system record . . . .

Note: If your system is using GX06AA on the voice nodes, the following SEER message and warning will appear:

10020 Error – Old transition modules are detected

WARNING: All of the transition modules on the voice nodes are GX06AA, for MM10 they must be upgraded to GX06AB. After the operation is complete the transition modules should be changed before the system is booted into service.

A message will appear indicating the nodes that employ the new transition module(s).

If the system has languages stored on another tape, you will see the following prompt (after all the required software and languages have been copied from the first tape—this takes about 45 minutes):

Shutting down tape server Please remove the tape currently in the tape drive Hit <CR> to continue

6 Remove the tape and press <Return>.

Please insert Install/Data tape Hit <CR> to continue

7 Insert the new tape and press <Return>. If another tape is required, install the tapes when prompted.

Note: The software upgrade will take approximately 30 minutes, plus 20 minutes per language installed.

A number of system messages will be displayed until the following message appears indicating that the system has been successfully converted. The procedure will continue unaided for approximately two hours.

The operation successfully completed

Remove the tape when it finishes rewinding and boot into service.

8 After removing the tape, turn the power off.

9 Then after approximately 10 seconds, boot the system by turning the power on again.

After booting, the Meridian Mail logon screen will appear and normal operation can commence. This will take from 10 to 15 minutes per node.

#TAPE:MMTAPE1>

10 If the following message appears after rebooting, do a sanity test by placing a call to a mailbox on the system:

Warning: the disks have not been synced

11 If the sanity test passes (that is, you hear a voice mail response or are satisfied with the results, or both), synch the disks. For specific information on disk synching, see the chapter entitled "System Status and Maintenance" in the System Administration Guide (NTP 557-7001-30x). If you are not satisfied, go to the next step.

12 If sanity test fails (that is, there is no voice response), reboot the system and manually synch the disks *from the shadow disk to the prime disk.* For specific information on this process, refer to Procedure 4-3 (system recovery from shadow disk is accomplished by synching from the shadow disk to the prime).

System recovery may also be required while the conversion is in the process of loading and where an error in execution has occured. In this case, there are two scenarios where an error message may appear:

First scenario

If you receive the following message:

The operation has failed. The system can be booted into service without performing the restore operation.

The conversion failed in an early phase of the operation. Remove the Install/data tape from the tape drive, restore the original hardware configuration, and reboot the system into service. A software restore is not needed.

Second scenario

If you receive the following message:

Operation has failed. Restore operation from backup (tape or disk) is required if you want to bring the system back to the previous working state.

The operation failed after some of the system was converted beyond a point of return. You must recover the system from tape (Procedure 4-2), from shadow disk (Procedure 4-3), or follow the restore procedure for your previous MM8 or MM9 release.

System Recovery

You can recover the original (MM8 or MM9) system from your original Install/data tape by following the steps outlined in Procedure 4-2. If your Install/data tape has been corrupted, you can recover the original system from the shadow disk by following the steps outlined in Procedure 4-3.

Procedure 4-2
System recovery from tape

1 Power the system down.

2 If you are converting from MM8 or MM9 to MM10 and the process is interrupted, replace the MM10 tape with the original Install/data tape.

3 Boot up the system from tape.

4 Restore the system by referring to Chapter 8,"Restore System from Backup", and follow Procedure 8-1 beginning at step 4.

Follow the steps outlined in Procedure 4-3 if you have to recover the original system by synching the disks from the shadow disk to the prime disk.

Procedure 4-3
System recovery from shadow disk

1. Power the system down.
2. Insert the previous release of the Install/data tape.
3. Power the system up again.
4. Select More Utilities from the System Installation and Modification menu.
5. From the System Operations Utilities menu select Exit to Support level.
6. Type the following command at the prompt:

   fork #tape:mmtape1:prm_tape <Return>
7. Type the following command at the prompt:

   fork ci[x] <<:CONSOLE:Nx >>:CONSOLE:Nx <Return>

   where "x" is replaced by the odd numbered node, starting with node 3. Repeat this step for each odd node on the system.
8. Next enter the following command at the prompt:

   load #tape:mmtape1:software:spm.mirror_pkg <Return>

   Enable 1 <Return>
9. At the following prompt, press <Return> to accept the default buffer size of 64 K:

   Buffer size (K): 64
10. In order to get the CobraVT window, press <Control-W>.
11. Move the cursor up or down to N3 and press <Return>.
12. Next enter the following at the prompt:

    load #tape:mmtape1:software:spm.mirror_pkg <Return>
13. To start synchronizing the disks, type the following at the prompt:

    Enable 1 <Return>
14. When prompted for the buffer size, press <Return> to accept the default size (64 K).

    Buffer size (K): 64
15. Repeat steps 10 through 14 for each remaining odd voice node (SPN) in the range N5 . . . N9.

    Wait until all nodes have generated the following SEER indicating that the disks are synced:

    INF 6601 ADMIN
16. Remove your Install/data tape and reboot to full service.

Chapter 5: Feature expansion

Feature expansion allows you to add Meridian Mail MSM features such as voice forms and voice menus.

This procedure should take approximately two hours. The time is the same for all systems. Read and understand all steps in this procedure before proceeding.

CAUTION
Risk of loss of service
Each of the off-line procedures outlined in this guide will cause service to be interrupted.

Perform a courtesy-down procedure before starting a feature expansion. This will prevent calls from being abruptly terminated when the operation commences.

For details on powering down the system, please refer to Chapter 1.

If you have a printer attached to your terminal, set your terminal up so that the printer will be able to print anything that appears on the screen after the System Installation and Modification Menu appears. First, press <PrtScrn> to print the System Installation and Modification Menu. Then, press the <Ctrl> and <w> keys followed by <p>, which causes the system to automatically print whatever appears on the screen. Use the same command to toggle back to normal (non-printing) mode.

Note: Before performing the procedures outlined in this chapter, make sure that you have consulted Chapter 1 of this guide. Failure to do so could lead you to omit important steps in the process.

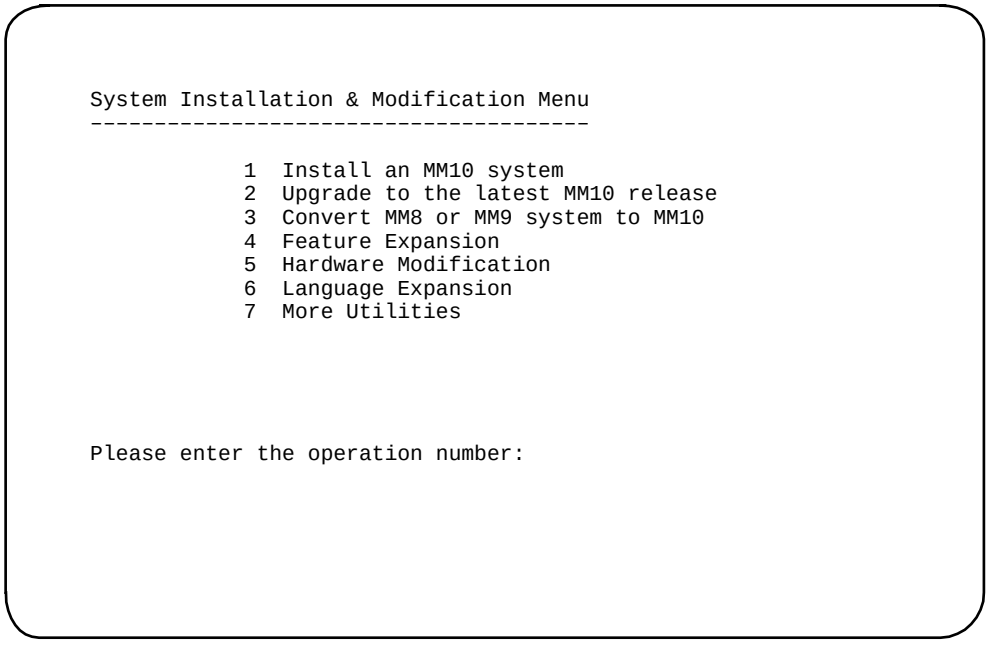
Procedure 5-1
Feature expansion

1. Power the system down. Refer to Chapter 1 of this document for details of the power-up/power-down procedures.
2. Insert the Install/data tape into the tape drive.
3. Power the system up. Refer to Chapter 1 for details.
4. The system automatically runs a series of diagnostic routines followed by a pause of approximately five minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

   Tape retension

   Once the diagnostic routines are complete, the Meridian Mail software will be loaded from the tape. Depending on the number of nodes in the system, it will take between 5 to 10 minutes to load the software. Once loaded, the System Installation and Modification Menu (Figure 5-1) will be shown.

Figure 5-1
System Installation and Modification Menu



5. Either enter the number for the desired operation or press the up or down arrow key until that number appears, then press <Return>.

   The following message will be displayed:

   You have chosen to perform a feature expansion.
   Do you wish to continue? Yes (No)

6. Press the up or down arrow key until the word Yes is displayed on the screen, then press <Return>. A number of system messages will appear indicating that software is being loaded. This should take about five minutes.

Note: Disk shadowing is disabled at the start of an upgrade. The following warning will be displayed on the console when the shadowing is disabled:

Disk shadowing has been disabled.
Please re–enable disk shadowing manually in the MMI
after the operation has completed and
the system has passed sanity test.

Once the warning is displayed, even if you abort the operation, disk shadowing will have to be manually enabled when the system is brought back into service.

Do you want to define optional features: No (Yes)

7 Press the up or down arrow key until the word Yes is displayed on the screen, then press <Return>.

Please enter feature to enable : (feature name)

Note: Before performing the procedures outlined in this chapter, make sure that you have consulted Chapters 1 and 2 of this guide. Failure to do so could lead you to omit important steps in the feature expansion process.

8 Select the appropriate feature name followed by <Return>. Use the up or down arrow keys to move through the list of features. The system will again prompt you to select a feature. Once all desired features have been selected enter Done to continue. Enter Clear to reset the features to match what is currently installed on the system.

The features which can be enabled are

Selection	Features enabled
ACCESS	Meridian ACCESS
AdminPlus	AdminPlus
AMIS	AMIS (Analog) Networking
VoiceForms	Voice Forms
VoiceMenus	Voice Menus
Networking	Meridian Mail Networking
MultiSMDI	Multiple SMDI Links
FaxOnDemand	Fax On Demand
MConnect	Meridian Mail Connections
Multicustomer	Multi-Customer

The features enabled will then be displayed:

The following features are enabled:
Feature name
Feature name (and so on)

ATTENTION

When you add the Multi-Customer feature to an existing system, all existing mailboxes are assigned to the default customer group. To move user mailboxes to the new customer groups, you will have to delete them from the default customer group and re-add them to the appropriate customer group.

The system now gives you the chance to change the selected features with the prompt:

Do you wish to re-enter features? No (Yes)

9 Press the up or down arrow key until the desired action is displayed on the screen, then press <Return>. If you select No, the process continues with the next step; if you select Yes, you are returned to Step 6.

You are next asked to enter the number of MMUI mailboxes. The default is 1000.

Enter MMUI mailbox level: 1000

Range = 0 to 5291multiplied by the number of SPN nodes.

10 Backspace over the default number and key in the required number, then press <Return>.

You are next asked to enter the number of VMUIF mailboxes. The default is 1000.

Enter VMUIF mailbox level: 1000

Range = 0 to 5291 multiplied by the number of SPN nodes minus the number of MMUI mailboxes.

11 Backspace over the default number, key in the required number, then press <Return>.

You are next asked to enter the number of residential mailboxes. The default is 1000.

Enter Residential mailbox level: 1000

Range = 0 to 5291 multiplied by the number of SPN nodes minus the sum of MMUI and VMUIF mailboxes.

12 Backspace over the default number, key in the required number, then press <Return>.

You are next asked to enter the number of family mailboxes. The default is 1000.

Enter Family mailbox level: 1000

Range = 0 to VMUIF added to the sum of MMUI and Residential mailboxes.

13 Backspace over the default number, key in the required number, then press <Return>.

You should now see a message indicating that the system is reading the hardware database for information (component type).

The next system action is to display the dataports. For example

Node	Card	Type	Port 1	Port 2	Port 3	Port 4
1	**2**	**SBC**	CONSOLE	**CON0122**	**PRT0123**	**PRT0124**
2	**3**	**SBC**	CONSOLE	**CON0232**	**CON0233**	**PRT0234**
3	**1**	**SBC**	**MOD0311**	**MOD0312**	**MOD0313**	**MOD0314**
4	**3**	**SBC**	**MOD0431**	**MOD0432**	**MOD0433**	**MOD0434**
5	**3**	**SBC**	**MOD0511**	**MOD0512**	**MOD0513**	**MOD0514**
6	**3**	**SBC**	**MOD0631**	**MOD0632**	**MOD0633**	**MOD0634**
13	**3**	**SBC**	**MOD1331**	**MOD1332**	**MOD1333**	**MOD1334**
14	**1**	**SBC**	**MOD1411**	**MOD1412**	**MOD1413**	**MOD1414**

Note 1: The bold dataport locations indicate that they may be changed. When they are changed, the above table will display the new selection.

Note 2: The preceding are default assignments for the system.

Note 3: For detailed information on dataports for the MSM and port configuration, refer to the *Planning and Engineering Guide* (NTP 557-7001-100).

Please assign the dataport locations.

You will now be presented with the Select operation prompt.

Select operation : Display (Reset, Redraw, Change, Done)

The options are as follows:

Display is used to display a list of all the dataports to view a summary of all the channels and their type.

Reset is used to reset the dataports to what they were before changes were made in the present session.

Redraw is used to clear the display screen if irrelevant characters appear. The present display is refreshed and reappears on the screen.

Change is used to reconfigure the dataports by changing their type.

Done is used to show that dataport configuration is complete. Proceed with operation.

14 To modify a dataport, select Change using the up and down arrow keys, and press <Return>. As an example, the following line is displayed:

Node 1 Card 2 Port 2 CON0122

15 Use the up and down arrow keys to change the port to MODEM, CON, SMDI, PRINTER, ADMIN, ACCESS, or UAT, or keep the CON0122 assignment.

If, for example, you choose MODEM, your choice will be displayed as follows:

Node 1 Card 2 Port 2 MODEM

16 Once you have made your choice, press <Return> to enter your dataport selection.

The next line will be displayed automatically.

Continue this process until you have selected all the dataports.

Note: 1 Depending on the features installed, the system may ask you to define specific dataports. For example, the feature ACCESS requires at least one ACCESS port while AdminPlus can have only one dataport.

Note: 2 The total number of ACCESS and AdminPlus ports may not exceed eight on a system. See the section "Notes on ACCESS and AdminPlus dataports."

Note: 3 Depending on the type of dataport, you may be required to provide more information such as link ID, baud rate, and link redundancy. See the section "Notes on SMDI dataports."

Note: 4 Not all dataports can be configured for all dataport types. If you designate a port with the ACCESS or AdminPlus feature, you are prompted to select the baud rate after pressing <Return>. Select the baud rate using the up and down arrow keys and press <Return>.

Notes on ACCESS and AdminPlus dataports:

If you designate a port with the ACCESS or AdminPlus feature, you are prompted to select the baud rate after pressing <Return>. Select the baud rate using the up and down arrow keys and press <Return>.

– Available baud rates for an ACCESS-designated port are 4800 and 9600 Baud.

– Available baud rates for an AdminPlus designated port are 2400, 4800, and 9600 Baud.

– The maximum cumulative baud rate for ACCESS and AdminPlus dataports is 9600 Baud per node.

Notes on SMDI dataports:

If you designate a port as SMDI and press <Return>, a Link ID will be entered automatically. Use the up and down arrow keys to select another link ID if required. Press <Return> once you have selected.

Having designated an SMDI port, you are now asked to provide a baud rate. The following notes describe Link ID and baud rate requirements for SMDI dataport selection:

– If you designate a port as SMDI, you will be prompted to enter the link ID before the baud rate.

– Available baud rates for an SMDI designated dataport are 1200 and 2400 Baud.

– Finally, you are asked if the link is redundant. Select Yes if you wish to have partnered locations. Press <Return>. The partnered locations will be displayed. See the example below.

Note: Selecting No will not provide you with a redundant link.

The following is an example of the interface during the changing of dataport assignments:

Node 1 Card 2, Port 2 CON0122
Node 1 Card 2, Port 3 UAT
Node 1 Card 2, Port 4 PRT0124
Node 2 Card 3, Port 2 CON0232
Node 2 Card 3, Port 3 PRT0233
Node 2 Card 3, Port 4 PRT0234
Node 3 Card 1, Port 1 ACCESS
Select the Baud Rate : 4800 (9600)
Node 3 Card 1, Port 2 MOD0312
Node 3 Card 1, Port 3 MOD0313
Node 3 Card 1, Port 4 MOD0314
Node 4 Card 3, Port 1 ADMIN
Select the Baud Rate : 2400 (4800, 9600)
Node 4 Card 3, Port 2 MOD0432
Node 4 Card 3, Port 3 MOD0433
Node 4 Card 3, Port 4 MOD0434
Node 5 Card 3, Port 1 MOD0531
Node 5 Card 3, Port 2 MOD0532
Node 5 Card 3, Port 3 MOD0533
Node 5 Card 3, Port 4 MOD0534
Node 6 Card 3, Port 1 MOD0631
Node 6 Card 3, Port 2 MOD0632
Node 6 Card 3, Port 3 MOD0633
Node 6 Card 3, Port 4 MOD0634
Node 13 Card 3, Port 1 SMDI1331
Enter the Link ID : 1
Select the Baud Rate : 2400 (1200)
Is this link redundant : Yes (No)
Partnered locations : Node 13 Port 1 and : Node 14 Port 1
Node 13 Card 3, Port 2 MOD1332
Node 13 Card 3, Port 3 MOD1333
Node 13 Card 3, Port 4 MOD1334
Node 14 Card 1, Port 2 MOD1412
Node 14 Card 1, Port 3 MOD1413
Node 14 Card 1, Port 4 MOD1414

17 After the last change has been made, an updated dataport display will appear on the screen.

The following is an example of the updated display:

Node	Card	Type	Port 1	Port 2	Port 3	Port 4
1	**2**	**SBC**	CONSOLE	**CON0122**	**UAT**	**PRT0124**
2	**3**	**SBC**	CONSOLE	**CON0232**	**CON0233**	**PRT0234**
3	**1**	**SBC**	**ACCESS**	**MOD0312**	**MOD0313**	**MOD0314**
4	**3**	**SBC**	**ADMIN**	**MOD0432**	**MOD0433**	**MOD0434**
5	**3**	**SBC**	**MOD0511**	**MOD0512**	**MOD0513**	**MOD0514**
6	**3**	**SBC**	**MOD0631**	**MOD0632**	**MOD0633**	**MOD0634**
13	**3**	**SBC**	**M SMDI1331**	**MOD1332**	**MOD1333**	**MOD1334**
14	**1**	**SBC**	**S SMDI1411**	**MOD1412**	**MOD1413**	**MOD1414**

Select operation : Display (Reset, Redraw, Change, Done)

If you select Display, the following screen will appear:

Note: You will be prompted to press <Return> to continue to display more of the following dataport display.

The following dataports are on this system:

Node 1 , Type SBC , Port 1: Dataport Name = CONSOLE
Node 1 , Type SBC , Port 2: Dataport Name = CON0122
Node 1 , Type SBC , Port 3: Dataport Name = UAT
Node 1 , Type SBC , Port 4: Dataport Name = PRT0124

Node 2 , Type SBC , Port 1: Dataport Name = CONSOLE
Node 2 , Type SBC , Port 2: Dataport Name = CON0232
Node 2 , Type SBC , Port 3: Dataport Name = PRT0233
Node 2 , Type SBC , Port 4: Dataport Name = PRT0234

Node 3 , Type SBC , Port 1: Dataport Name = ACCESS
Baud Rate = 4800
Node 3 , Type SBC , Port 2: Dataport Name = MOD0312
Node 3 , Type SBC , Port 3: Dataport Name = MOD0313
Node 3 , Type SBC , Port 4: Dataport Name = MOD0314

Node 4 , Type SBC , Port 1: Dataport Name = ADMIN
Baud Rate = 2400
Node 4 , Type SBC , Port 2: Dataport Name = MOD0432
Node 4 , Type SBC , Port 3: Dataport Name = MOD0433
Node 4 , Type SBC , Port 4: Dataport Name = MOD0434

Node 5 , Type SBC , Port 1: Dataport Name = MOD0431
Node 5 , Type SBC , Port 2: Dataport Name = MOD0432
Node 5 , Type SBC , Port 3: Dataport Name = MOD0433

```
Node 5 ,   Type      SBC ,     Port 4: Dataport Name = MOD0434

Node 6 ,   Type      SBC ,     Port 1: Dataport Name = MOD0631
Node 6 ,   Type      SBC ,     Port 2: Dataport Name = MOD0632
Node 6 ,   Type      SBC ,     Port 3: Dataport Name = MOD0633
Node 6 ,   Type      SBC ,     Port 4: Dataport Name = MOD0634

Node 13 , Type       SBC ,     Port 1: Dataport Name = SMDI1331 (Master)
                                        Baud Rate   = 2400
                                        Link ID     = 1
Node 13 , Type       SBC ,     Port 2: Dataport Name = MOD1332
Node 13 , Type       SBC ,     Port 3: Dataport Name = MOD1333
Node 13 , Type       SBC ,     Port 4: Dataport Name = MOD1334

Node 14 , Type       SBC ,     Port 1: Dataport Name = SMDI1411 (Slave)
                                        Baud Rate   = 2400
                                        Link ID     = 1
Node 14 , Type       SBC ,     Port 2: Dataport Name = MOD1412
Node 14 , Type       SBC ,     Port 3: Dataport Name = MOD1413
Node 14 , Type       SBC ,     Port 4: Dataport Name = MOD1414
```

Select operation : Display (Reset, Redraw, Change, Done)

18 If you are satisfied with the configuration of the displayed dataports, select Done and press <Return>; otherwise, select Change using the up and down arrow keys to go back and insert or delete dataport assignments.

Once you select Done, the dataports are checked by the software to ensure that no dataport designation rules have been broken. The operation continues with the prompts shown in Step 19 if there are no errors.

If the dataports have not been set up properly, a diagnostic message(s) will be displayed that tells you what ports may still need to be assigned or what port assignment error(s) has been made. Some of the diagnostic messages you may encounter will indicate the following:

- *too many or too few dataports of a particular type on a node*
- *a dataport of a particular type selected on a T1 node does not function properly on that node*

Specific diagnostic messages that may be displayed are

- *not all SMDI ports are redundant*
- *multiadmin without a UAT port*
- *networking without two modem ports*
- *the cumulative baud rate for a dataport on a specific node exceeds the allowable baud rate*

If an error has been committed, you will be asked to go back and make changes.

In general, note the diagnostic messages and choose Yes to return to the Select operation prompt. Select Change as you did in Step 14, and alter the port assignments where applicable. If you select Reset, the changes you had made previously are deleted, and you start again with the default dataport assignments.

19 When the diagnostic messages have been addressed, select Done. The following prompts are displayed:

Creating required volumes
Removing obsolete files

20 This is the final operation for feature expansion. If the current tape does not contain all of the languages installed on your system, you will be prompted to insert another tape after the system files and the languages on the current tape have been copied.

The procedure will proceed uninterrupted for approximately one hour. You will see a number of system messages on the console indicating that files are being copied and updated.

When the procedure is completed, the following messages will appear:

Shutting down tape server.

The operation successfully completed.
Remove the tape when it finishes rewinding and boot into service

#TAPE:MMTAPE1>

Boot to full service

Use the following steps to boot to full service.

1 Remove the tape.

2 Turn the power off.

3 After approximately 10 seconds, turn the power on again.

After booting, the Meridian Mail MSM logon screen will appear and normal operation can commence. This will take from 10 to 15 minutes per node. Refer to Chapter 1 for details on rebooting, and power-up and power-down procedures.

Note: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to reinstall or modify the system.

4 If the following message appears after rebooting

Warning: the disks have not been synced

do a sanity test by placing a call to a mailbox on the system.

5 If the sanity test passes (that is, you hear a voice mail response or are satisfied with the results, or both), synch the disks. For specific information on disk synching, see the chapter entitled "System Status and Maintenance" in the Syst*em Administration Guide* (NTP 557-7001-30x). If you are not satisfied, go to the next step.

6 If the sanity test fails (that is, there is no voice response), reboot the system and manually synch the disks *from the shadow disk to the prime disk.* For specific information on this process, refer to Procedure 5-3.

Procedure 5-2
Synch disks from shadow disk to prime

> **ATTENTION**
> If you wish to return to your previous system, use your previous release tapes and the following restore procedure.

The following steps are necessary for re-syncing from shadow disk to prime.

1 Power the system down.

2 Insert the previous release of the Install/data tape.

3 Power the system up again.

4 Select for More Utilities from the System Installation and Modification menu.

5 From the System Operations Utilities menu select Exit to Support level.

6 Type the following command at the prompt:

fork #tape:mmtape1:prm_tape <Return>

7 Type the following command at the prompt:

fork ci[x] <<:CONSOLE:Nx >>:CONSOLE:Nx <Return>

where x is replaced by the odd numbered node, starting with node 3. Repeat this step for each odd node on the system.

8 Next enter the following command at the prompt:

load #tape:mmtape1:software:spm.mirror_pkg <Return>

Enable 1 <Return>

9 At the following prompt, press <Return> to accept the default buffer size of 64 K.

Buffer size (K): 64

10 In order to get the CobraVT window, press <Control-W>.

11 Move the cursor up or down to N3 and press <Return>.

12 Next, enter the following command at the prompt:

load #tape:mmtape1:software:spm.mirror_pkg <Return>

13 To start synchronizing the disks, type the following command at the prompt:

Enable 1 <Return>

14 When prompted for the buffer size, press <Return> to accept the default size (64 K).

Buffer size (K): 64

15 Repeat steps 10 through 14 for each remaining odd voice node (SPN) in the range N5 . . . N9.

16 Wait until all nodes have generated the following SEER indicating that the disks are synced.

INF 6601 ADMIN

17 Remove your Install/data tape and reboot to full service.

Chapter 6: Hardware modification

When new hardware is installed, the software must be modified to reflect the change. The hardware modification program permits the administrator to modify the software to agree with the new hardware setup. This, in turn, allows for port and node expansion. Through hardware modification, a system may be expanded from any port capacity to any other higher port capacity. It can also be expanded to add additional nodes and to change the CPTD (call progress tone detection) country code. Follow the procedures below to perform hardware modification on a system.

Use the hardware modification program only when a new node or card (not a replacement) has been added to the system.

The system must be "courtesied down" before being taken out of service. This will prevent calls from being abruptly terminated when the operation commences. For more information on courtesy down procedures, refer to the *System Administration Guide* that is most appropriate to your site (NTP 557-7001-30x).

CAUTION
Risk of loss of service
Each of the off-line procedures outlined in this guide will cause service to be interrupted.

If you have a printer attached to your terminal, set your terminal up so that the printer will be able to print anything that appears on the screen after the System Installation and Modification Menu appears. First, press <PrtScrn> to print the System Installation and Modification Menu. Then, press the <Ctrl–w> keys followed by <p>, which causes the system to automatically print whatever appears on the screen. Use the same command to toggle back to normal (non-printing) mode.

Note: Before performing the procedures outlined in this chapter, make sure that you have consulted Chapters 1 and 2 of this guide. Failure to do so could lead you to omit important steps in the upgrade or conversion process.

For details on powering down the system, please refer to Chapter 1.

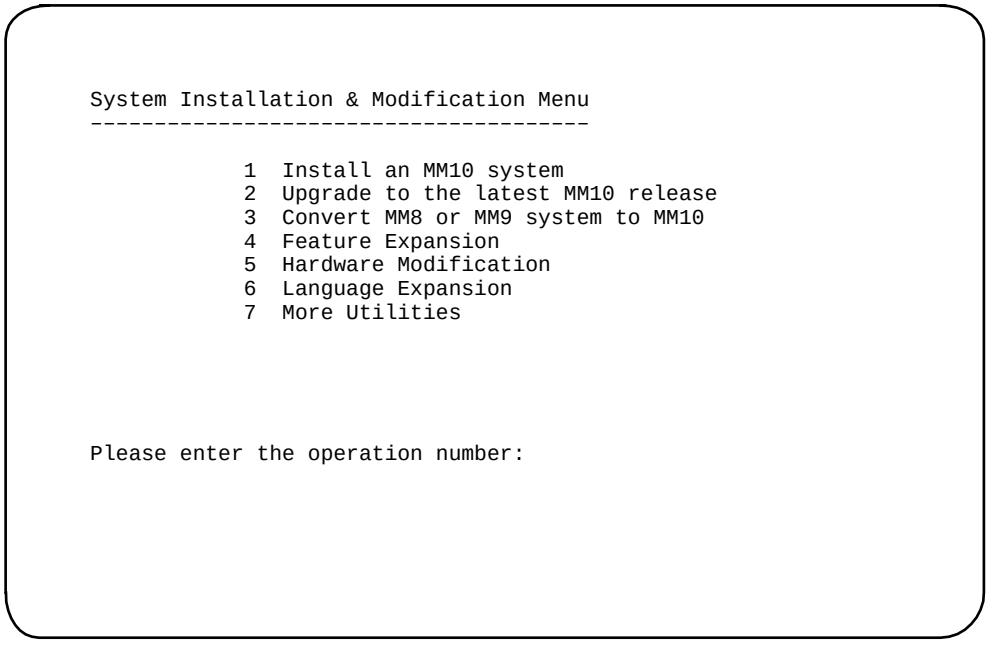
Procedure 6-1
Hardware modification

1. Power the system down. Refer to Chapter 1 of this document for details of the power-up procedures.
2. Install the new hardware.
3. Insert the Install/data tape into the tape drive.
4. Power the system up. Refer to Chapter 1 for details.
5. The system automatically runs a series of diagnostic routines followed by a pause of approximately five minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

   Tape retension

   Once the diagnostic routines are complete, the Meridian Mail software will be loaded from the tape. Depending on the number of nodes in the system, it will take between 5 and 10 minutes to load the software. Once loaded, the System Installation and Modification Menu (Figure 6-1) will be shown.

Figure 6-1
System Installation and Modification Menu



6. Either enter the number for the desired operation or press the up or down arrow key until that number appears, then press <Return>. The following message will be displayed:

   You have chosen to modify the hardware configuration
   Do you wish to continue? Yes (No)

7 Pressing the up or down arrow key toggles between Yes and No. With the word Yes displayed on the screen, press <Return>. A number of system messages will appear indicating that software is being loaded. This should take about five minutes. Selecting No returns you to the main menu. Disk shadowing is disabled at the start of a hardware modification. When you select Yes, you will see the following messages:

Disk shadowing has been disabled.
Please re–enable disk shadowing manually in the MMI
after the operation has been completed and
the system has passed sanity test.

Once the warning is displayed, even if you abort the operation, disk shadowing will have to be manually enabled when the system is brought back into service.

Hardware Modification

The hardware configuration is displayed next. You are asked to verify that the display is correct. For example

Node	Card1	Card2	Card3
1	**EMPTY**	**SBC**	**BUS**
2	**BUS**	**EMPTY**	**SBC**
3	**SBC**	**NVP12P**	**NVP12P**
4	**NVP12P**	**NVP12P**	**SBC**
5	**NVP12P**	**NVP12P**	**SBC**
6	**NVP12P**	**NVP12P**	**SBC**
13	**T1**	**EMPTY**	**SBC**
14	**SBC**	**EMPTY**	**T1**

Is the configuration correct : Yes (No)

Note: The preceding illustration of hardware configuration is for a 48-port system. Other system sizes are shown in the tables at the end of this chapter.

8 Press <Return> to choose Yes. If you choose No, you must power down the affected node, correct the fault, and rerun the full procedure. If you choose Yes, you will be asked if you want to change your CPTD selection. Normally, this should not be changed.

Do you wish to change your CPTD selection? No (Yes)

You are then asked to define the T1 Span parameters. Defaults (which are normally acceptable in North America) are shown in bold face print; options are in light face.

The following T1 Spans are on this system

All spans will be displayed after the mailbox levels have been entered.

If a system has 48 channels, prompts for Span A and Span B will appear. Similarly, for 72 channels, you will be prompted for Spans A through C and so on. For 192 channels, prompts for Spans A through H will be shown.

Note: If you have more than two spans to display, you are prompted to press <Return> to continue to display more spans.

Span A

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Span B

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Span C

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Span D

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Select operation: Display (Change, Done)

Select Display if you wish to see the T1 Span parameters again. You can choose the range of T1 spans that you wish to be displayed. The following example is given:

You are prompted to enter the start range.

From: SpanA

Press <Return>.

You are prompted to enter the end range. Use the up and down arrow keys to select the range you require.

To: SpanB

Press <Return>. The following T1 spans will be displayed:

Span A		
Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**
Span B		
Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Select operation: Display (Change, Done)

9 Use the up and down arrow keys to select Change if you wish to change the parameters of some or all of the T1 spans.

You will be prompted for a range of T1 spans to change before entering the 16 Span parameters. The following is an example:

From: SpanA

Press <Return>

You are prompted to enter the range at which you wish to end. Use the up and down arrow keys to select the range you require.

To: SpanA

Press <Return>. The following T1 spans will be displayed:

Select InternalBCTiming if the system is connected to the switch via channel banks; select ExternalT1Timing if connected to a DMS, DTC or DAX.

Sync Mode	**: ExternalT1Timing**	(InternalBCTiming)
Line signalling	**: DTMF**	(DP)

LineIntf Type	**: FXOGrdStart**	(FXOLoopStart, FXSGrdStart,FXSLoopStart, FourW_EnMtype)
Start Type	**: WinkStart**	(ImmedStart, DelayStart)
Trunk Type	**: NonDIDTrunk**	(DIDTrunk, ASPTrunk)
Frame Format	**: D4**	(ESF)
Line Code Format	**: B8ZS**	(B7, Transparent)
Line Length	**: 0 to 133**	(133to266, 266to399, 399to533, 533to655)
T1 Alarm	**: Bit_two**	(s_Bit)
T1_Debounce	**:130**	(50 to MAXINT)
T1_GuardTime	**:130**	(0 to MAXINT)
ESFD	**: 0**	(0 to 15)
BVCR	**: 0**	(0 to 255)
OOFD	**: 0**	(0 to 15)
Ring Pulse	**: 130**	(0 to MAXINT)
Hook Flash Pulse	**: 320**	(0 to MAXINT)

Select operation: Display (Change, Done)

Use the up and down arrows to toggle each selection.

10 Select Done when you are finished setting the T1 Span parameters.

Note: When the MSM is using Connections with an AT&T or ROLM switch, the hook flash pulse value must be set to 480.

11 You are then asked to define the T1 link information:

Please define the TI Channels

If MultiSMDI is not enabled, the following prompt will appear:

You may only have ONE Link defined. Any attempt to create a new link will overwrite the previous definition.

Please enter the information to create or redefine a Link

12 Enter the required information.

Link ID: 1

Note 1: Link ID is the name of the SMDI link. The Link ID for each SMDI port is unique and must be entered at this time. You can enter either numeric or alpha characters in this field. It is recommended that you use a meaningful name (as opposed to a number) so that it is easy to identify the link.

Login Code:	***85**	(See entry for UCDA in Table IBNXLA in the *MSM Translations Guide* [NTP 557-7001-310].)

Logout Code: ***86** (See entry for UCDD in Table IBNXLA in the *MSM Translations Guide* [NTP 557-7001-310].)

Note 2: Blank out the Login and Logout codes if the channel is connecting to a PBX.

NRDD Code: ***88**

Switch Type: ****DMS100_Centrex** (DMS100_POTS, Meridian_SL100, AT&T_1A_EES, AT&T_5_ESS)

** If you need to modify the switch record data, please refer to* System Administration Tools *(NTP 557-7001-305).*

*** These selections are available without MConnections; with MConnections, the added selections available are: Meridian_1, DMS_10, AT&T_PBX, ROLM_PBX.*

Agent Position ID: **9999**

Are done defining Links ? Yes (No)

13 Use the up or down arrow keys to select Yes if you have completed defining all of the SMDI links on the system.

or

Use the up or down arrow keys to select No in order to define another link or to redefine an existing link. If you redefine an existing link (by using a link ID that has already been defined), you will be prompted:

WARNING: This LinkID has already been defined, the previous definition will be overwritten.

Are you sure? No (Yes)

If you do not have the feature MultiSMDI enabled (so there can only be one SMDI link defined) and you choose to define another link (or redefine an existing link), you will be prompted:

WARNING: Only one LinkID can be defined, the previous definition will be overwritten.

Are you sure? No (Yes)

14 Use the up or down arrow keys to select Yes to overwrite the link information or No to leave the link as it was.

Would you like to re-enter this information? No (Yes)

15 Use the up or down arrow keys to select No if you have completed defining all the links and are ready to continue with the software installation.

WARNING: If you select Yes to reenter link information, any changes that you have made will be lost.

16 You are then asked to define the T1 hardware locations.

Span	T1 Hardware Location																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
3	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

Select operation: DetailedDisplay (Change, Done, Summary)

The following are options for Select operation:

DetailedDisplay: This is used to view the settings for a single channel or a range of channels.

Change: This is used to enter the settings for a single channel or a range of channels. The parameters for each channel within the selected range are set to the value entered, except for DN and message terminal. They start with the value entered and are incremented by one. See the following sample settings, starting at "Port Type".

Summary: This is used to view a summary of all the channels and their type (M = Multimedia, V = full service voice, Vb = basic service voice).

Done: This is used to commit the channel settings and continue.

The following is an example of the information displayed during a DetailedDisplay.

Number	DN	Type	UCDDN	Login Code	Logout Code	Msg. Term	LinkID	AgtPosn
1	2800	V	3650	*85	*86	1	1	9999
2	2801	V	3650	*85	*86	2	1	9999
3	2802	V	3650	*85	*86	3	1	9999
4	2803	V	3650	*85	*86	4	1	9999

17 Change the T1 Hardware Locations to match the desired system configuration.

Note: When defining the T1 hardware locations, in particular the Link ID, you must use the up and down arrow keys to choose a previously defined Link ID, and then press <Return> to select it.

The following is an example of the method used to change T1 hardware locations.

18 When you press <Return> after selecting the Change prompt, you will be given the opportunity of changing the port assignments. A display similar to the following will be shown. At each line the values may be changed.

Port Type **: Voice_Full** (Voice_Basic, MultiMedia)

First Span **: 1**

First Location **: 1**

Last Span **: 4**

Last Location **: 24**

DN **: 2800** (This is the default. The value you use may be up to seven digits. See Service Orders section of the *MSM Translations Guide* [NTP 557-7001-310].)

Link Type **: SMDI** (ASP, SCAI, CSL)

UCDDN **: 3650** (See Table DNROUTE in the *MSM Translations Guide* [NTP 557-7001-310].)

Link ID **: 1** (The link ID must match one of the SMDI links that were previously defined.)

Message Desk **: 63** (See the message desk field in Table UCDGRP in the *MSM Translations Guide* [NTP 557-7001-310].)

Message Terminal **: 1** (Agent DN for DMS)

Select operation: DetailedDisplay (Change, Done, Summary)

19 Once you have finished defining all the T1 hardware locations, use the up or down arrow keys to select Done.

Span	T1 Hardware Location																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
2	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
3	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
4	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb

Is this correct? No (Yes)

20 Using the up or down arrow keys, select Yes if the summary displayed is correct, or select No to return to Step 16 and continue changing the T1 hardware locations.

You then define the VP hardware location:

Node	VP Hardware Location																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
3	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
5	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
6	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

Select operation : Summary (Change, Done)

The following are options for Select operation:

Summary: This is used to view a summary of all the channels and their type.

Change: This is used to enter the channel type (Voice_Basic, Voice_Full, or MultiMedia), for a range of channels.

Done: This is used to commit the channel settings and continue.

21 Change the VP Hardware Locations so that the number of each type defined matches the number of each type defined for the T1 hardware locations.

The following is an example of the method used to change VP hardware locations.

Port Type **: Voice_Full** (Voice_Basic, MultiMedia)

First Node **: 3**

First Location **: 1**

Last Node **: 6**

Last Location **: 24**

Select operation **: Done** (Change, Summary)

22 When you have finished making changes, select Done, and a summary of the VP hardware locations will be displayed.

Node	----------VP Hardware Location ----------																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
3	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
4	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
5	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
6	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb

Is this correct? No (Yes)

23 Using the up or down arrow keys, select Yes to continue or No to return to Step 21, and continue changing the VP hardware locations.

The next system action is to display the dataports. For example

Node	Card	Type	Port 1	Port 2	Port 3	Port 4
1	**2**	**SBC**	CONSOLE	**CON0122**	**PRT0123**	**PRT0124**
2	**3**	**SBC**	CONSOLE	**CON0232**	**CON0233**	**PRT0234**
3	**1**	**SBC**	**MOD0311**	**MOD0312**	**MOD0313**	**MOD0314**
4	**3**	**SBC**	**MOD0431**	**MOD0432**	**MOD0433**	**MOD0434**
5	**3**	**SBC**	**MOD0511**	**MOD0512**	**MOD0513**	**MOD0514**
6	**3**	**SBC**	**MOD0631**	**MOD0632**	**MOD0633**	**MOD0634**
13	**3**	**SBC**	**MOD1331**	**MOD1332**	**MOD1333**	**MOD1334**
14	**1**	**SBC**	**MOD1411**	**MOD1412**	**MOD1413**	**MOD1414**

Note 1: The bold dataport locations indicate that they may be changed. When they are changed, the above table will display the new selection.

Note 2: The preceding displayed dataports are default assignments for the system.

Note 3: For detailed information on dataports for the MSM and port configuration, refer to the *Planning and Engineering Guide* (NTP 557-7001-100).

Please assign the dataport locations.

You will now be presented with the Select operation prompt.

Select operation : Display (Reset, Redraw, Change, Done)

The options are as follows:

Display is used to display a list of all the dataports to view a summary of all the channels and their type.

Reset is used to reset the dataports to what they were before changes were made in the present session.

Redraw is used to clear the display screen if irrelevant characters appear. The present display is refreshed and reappears on the screen.

Change is used to reconfigure the dataports by changing their type.

Done is used to show that dataport configuration is complete. Proceed with operation.

24 To modify a dataport, select Change using the up and down arrow keys and press <Return>. As an example, the following line is displayed:

Node 1 Card 2 Port 2 CON0122

25 Use the up and down arrow keys to change the port to MODEM, CON, SMDI, PRINTER, ADMIN, ACCESS, or UAT, or keep the CON0122 assignment.

If, for example, you choose MODEM, your choice will be displayed as follows:

Node 1 Card 2 Port 2 MODEM

26 Once you have made your choice, press <Return> to enter your dataport selection. The next line will be displayed automatically.

Continue this process until you have selected all the dataports.

The following notes describe certain dataport requirements:

Note 1: Depending on the features installed, the system may ask you to define specific dataports. For example, the feature Access requires at least one Access port while AdminPlus can have only one dataport.

Note 2: The total number of Access and AdminPlus ports may not exceed eight on a system.

Note 3: Depending on the type of dataport, you may be required to provide more information such as link ID, baud rate, and link redundancy.

Note 4: Not all dataports can be configured for all dataport types.

If you designate a port with the Access or AdminPlus feature, you are prompted to select the baud rate after pressing <Return>. Select the baud rate using the up and down arrow keys, and press <Return>.

The following notes describe baud rate requirements for Access and AdminPlus dataport selection:

Note 5: Available baud rates for an Access designated port are 4800 and 9600 Baud.

Note 6: Available baud rates for an AdminPlus designated port are 2400, 4800, and 9600 Baud.

Note 7: The maximum cumulative baud rate for Access and AdminPlus dataports is 9600 Baud per node.

If you designate a port as SMDI and press <Return>, a Link ID will be entered automatically. Use the up and down arrow keys to select another link ID if required. Press <Return> once you have selected.

Having designated an SMDI port, you are now asked to provide a baud rate.

The following notes describe Link ID and baud rate requirements for SMDI dataport selection:

Note 8: If you designate a port as SMDI, you will be prompted to enter the link ID before the baud rate.

Note 9: Available baud rates for an SMDI designated dataport are 1200 and 2400 Baud.

Finally, you are asked if the link is redundant. Select Yes if you wish to have partnered locations. Press <Return>. The partnered locations will be displayed. See the example below.

Note 10: Selecting No will not provide you with a redundant link.

The following is an example of the interface during the changing of dataport assignments:

Node 1 Card 2, Port 2 CON0122
Node 1 Card 2, Port 3 UAT
Node 1 Card 2, Port 4 PTR0124
Node 2 Card 3, Port 2 CON0232
Node 2 Card 3, Port 3 PTR0233
Node 2 Card 3, Port 4 PTR0234
Node 3 Card 1, Port 1 ACCESS
Select the Baud Rate : 4800 (9600)
Node 3 Card 1, Port 2 MOD0312
Node 3 Card 1, Port 3 MOD0313
Node 3 Card 1, Port 4 MOD0314
Node 4 Card 3, Port 1 ADMIN
Select the Baud Rate : 2400 (4800, 9600)
Node 4 Card 3, Port 2 MOD0432

Node 4 Card 3, Port 3 MOD0433
Node 4 Card 3, Port 4 MOD0434
Node 5 Card 3 Port 1 MOD0531
Node 5 Card 3, Port 2 MOD0532
Node 5 Card 3, Port 3 MOD0533
Node 5 Card 3, Port 4 MOD0534
Node 6 Card 3, Port 1 MOD0631
Node 6 Card 3, Port 2 MOD0632
Node 6 Card 3, Port 3 MOD0633
Node 6 Card 3, Port 4 MOD0634
Node 13 Card 3, Port 1 SMDI1331
Enter the Link ID : 1
Select the Baud Rate : 2400 (1200)
Is this link redundant : Yes (No)
Partnered locations : Node 13 Port 1 and : Node 14 Port 1
Node 13 Card 3, Port 2 MOD1332
Node 13 Card 3, Port 3 MOD1333
Node 13 Card 3, Port 4 MOD1334
Node 14 Card 1, Port 2 MOD1412
Node 14 Card 1, Port 3 MOD1413
Node 14 Card 1, Port 4 MOD1414

27 After the last change has been made, an updated dataport display will appear on the screen.

The following is an example of the updated display:

Node	Card	Type	Port 1	Port 2	Port 3	Port 4
1	**2**	**SBC**	CONSOLE	**CON0122**	**UAT**	**PRT0124**
2	**3**	**SBC**	CONSOLE	**CON0232**	**CON0233**	**PRT0234**
3	**1**	**SBC**	**ACCESS**	**MOD0312**	**MOD0313**	**MOD0314**
4	**3**	**SBC**	**ADMIN**	**MOD0432**	**MOD0433**	**MOD0434**
5	**3**	**SBC**	**MOD0511**	**MOD0512**	**MOD0513**	**MOD0514**
6	**3**	**SBC**	**MOD0631**	**MOD0632**	**MOD0633**	**MOD0634**
13	**3**	**SBC**	**M SMDI1331**	**MOD1332**	**MOD1333**	**MOD1334**
14	**1**	**SBC**	**S SMDI1411**	**MOD1412**	**MOD1413**	**MOD1414**

Select operation : Display (Reset, Redraw, Change, Done)

If you select Display, the following screen will appear:

Note: You will be prompted to press <Return> to continue to display more of the following dataport display.

The following dataports are on this system:

```
Node 1 ,  Type     SBC ,    Port 1: Dataport Name = CONSOLE
Node 1 ,  Type     SBC ,    Port 2: Dataport Name = CON0122
Node 1 ,  Type     SBC ,    Port 3: Dataport Name = UAT
Node 1 ,  Type     SBC ,    Port 4: Dataport Name = PRT0124

Node 2 ,  Type     SBC ,    Port 1: Dataport Name = CONSOLE
Node 2 ,  Type     SBC ,    Port 2: Dataport Name = CON0232
Node 2 ,  Type     SBC ,    Port 3: Dataport Name = PRT0233
Node 2 ,  Type     SBC ,    Port 4: Dataport Name = PRT0234

Node 3 ,  Type     SBC ,    Port 1: Dataport Name = ACCESS
                                    Baud Rate    = 4800
Node 3 ,  Type     SBC ,    Port 2: Dataport Name = MOD0312
Node 3 ,  Type     SBC ,    Port 3: Dataport Name = MOD0313
Node 3 ,  Type     SBC ,    Port 4: Dataport Name = MOD0314

Node 4 ,  Type     SBC ,    Port 1: Dataport Name = ADMIN
                                    Baud Rate    = 2400
Node 4 ,  Type     SBC ,    Port 2: Dataport Name = MOD0432
Node 4 ,  Type     SBC ,    Port 3: Dataport Name = MOD0433
Node 4 ,  Type     SBC ,    Port 4: Dataport Name = MOD0434

Node 5 ,  Type     SBC ,    Port 1: Dataport Name = MOD0431
Node 5 ,  Type     SBC ,    Port 2: Dataport Name = MOD0432
Node 5 ,  Type     SBC ,    Port 3: Dataport Name = MOD0433
Node 5 ,  Type     SBC ,    Port 4: Dataport Name = MOD0434

Node 6 ,  Type     SBC ,    Port 1: Dataport Name = MOD0631
Node 6 ,  Type     SBC ,    Port 2: Dataport Name = MOD0632
Node 6 ,  Type     SBC ,    Port 3: Dataport Name = MOD0633
Node 6 ,  Type     SBC ,    Port 4: Dataport Name = MOD0634

Node 13 , Type     SBC ,    Port 1: Dataport Name = SMDI1331 (Master)
                                    Baud Rate    = 2400
                                    Link ID      = 1
Node 13 , Type     SBC ,    Port 2: Dataport Name = MOD1332
Node 13 , Type     SBC ,    Port 3: Dataport Name = MOD1333
Node 13 , Type     SBC ,    Port 4: Dataport Name = MOD1334

Node 14 , Type     SBC ,    Port 1: Dataport Name = SMDI1411 (Slave)
                                    Baud Rate    = 2400
                                    Link ID      = 1
Node 14 , Type     SBC ,    Port 2: Dataport Name = MOD1412
Node 14 , Type     SBC ,    Port 3: Dataport Name = MOD1413
Node 14 , Type     SBC ,    Port 4: Dataport Name = MOD1414
```

Select operation : Display (Reset, Redraw, Change, Done)

28 If you are satisfied with the configuration of the displayed dataports, select Done and press <Return>; otherwise select Change using the up and down arrow keys to go back and insert or delete dataport assignments.

Once you select Done, the dataports are checked by the software to ensure that no dataport designation rules have been broken. The operation continues with the prompts shown in Step 29 if there are no errors.

If the dataports have not been set up properly, a diagnostic message(s) will be displayed that tells you what ports may still need to be assigned or what port assignment error(s) has been made. Some of the diagnostic messages you may encounter will indicate the following:

- *There are too many or too few dataports of a particular type on a node.*
- *A dataport of a particular type selected on a T1 node does not function properly on that node.*

The following are specific diagnostic messages that may be displayed:

- *Not all SMDI ports are redundant.*
- *Multiadmin without a UAT port.*
- *Networking without two modem ports.*
- *The cumulative baud rate for a dataport on a specific node exceeds the allowable baud rate.*

If an error has been committed, you will be asked to go back and make changes.

In general, note the diagnostic messages and choose Yes to return to the Select operation prompt. Select Change as you did in Step 25 and alter the port assignments where applicable. If you select Reset, the changes you had made previously are deleted and you start again with the default dataport assignments.

29 When the diagnostic messages have been addressed, select Done. The following prompts will be displayed:

All required information has been input.
Do you wish to continue, re-enter information or abort? Continue

30 This is the final operation for software installation. If you previously selected "From another tape" for language expansion, you will be prompted to remove the current tape, insert the new tape, and do Step 15 of Chapter 2 after the system files and the languages which were selected on the initial tape have been copied. (This will take about 45 minutes.)

31 If you select Continue, the system runs a variety of routines, ending as indicated below. If you select Re-enter, you are returned to the beginning of this procedure and may review and/or change information as it is presented again. If you select Abort, all changes made to this point will be lost. The final messages are

The system has been installed.
Please remove the tape and boot to full service.
#TAPE:MMTAPE1>

Add Information

After completion of all the steps in Procedure 6-1, you will have to add information to tables for the SL-100 as indicated in the *MSM Translations Guide* (557-7001-310). Specifically, you will have to do the following:

1 Add line equipment numbers (LENs) to Table LNINV. One LEN is needed for each new port.

2 Expand the maximum position number in Table UCDGRP. Here, you will change the MAXPOS field to the number of ports to which you are expanding.

3 Perform a service order for each new UCD agent.

Boot to full service

Use the following steps to boot to full service:

1 Remove the tape.

2 Turn the power off.

3 After approximately 10 seconds, turn the power on again.

After booting, the Meridian Mail MSM logon screen will appear and normal operation can commence. This will take from 10 to 15 minutes per node. Refer to Chapter 1 for details on rebooting, power-up, and power-down procedures.

Note: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to reinstall or modify the system.

4 If the following message appears after rebooting.

Warning: the disks have not been synched

do a sanity test by placing a call to a mailbox on the system.

5 If the sanity test passes (that is, you hear a voice mail response or are satisfied with the results, or both), synch the disks. For specific information on disk synching, see the chapter entitled "System Status and Maintenance" in the Syst*em Administration Guide* (NTP 557-7001-30x). If you are not satisfied, go to the next step.

6 If the sanity test fails (that is, there is no voice response), reboot the system and manually synch the disks *from the shadow disk to the prime disk.* For specific information on this process, refer to Procedure 6-2.

Procedure 6-2
Synch disks from shadow disk to prime

> **ATTENTION**
> If you wish to return to your previous system, use your previous release tapes and the following restore procedure.

The following steps are necessary for resynching from shadow disk to prime:

1 Power the system down.

2 Insert the previous release of the Install/data tape.

3 Power the system up again.

4 Select for More Utilities from the System Installation and Modification menu.

5 From the System Operations Utilities menu select Exit to Support level.

6 Type the following at the prompt:

fork #tape:mmtape1:prm_tape <Return>

7 Type the following at the prompt:

fork ci[x] <<:CONSOLE:Nx >>:CONSOLE:Nx <Return>
where x is replaced by the odd numbered node, starting with node 3. Repeat this step for each odd node on the system.

8 Next enter the following at the prompt:

load #tape:mmtape1:software:spm.mirror_pkg <Return>

Enable 1 <Return>

9 At the following prompt, press <Return> to accept the default buffer size of 64K:

Buffer size (K): 64

10 In order to get the CobraVT window, press <Control–W>.

11 Move the cursor up or down to N3 and press <Return>.

12 Next, enter the following at the prompt:

load #tape:mmtape1:software:spm.mirror_pkg <Return>

13 To start synchronizing the disks, type the following at the prompt:

Enable 1 <Return>

14 When prompted for the buffer size, press <Return> to accept the default size (64K):

Buffer size (K): 64

15 Repeat steps 10 through 14 for each remaining voice node (SPN) in the range N5, N7, N9.

16 Wait until all nodes have generated the following SEER indicating that the disks are synced:

INF 6601 ADMIN

17 Remove your Install/data tape and reboot to full service.

Table 6-1
Card/Node configurations—48-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1

Table 6-2
Card/Node configurations—72-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	EMPTY	SBC
6	NVP12P	EMPTY	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1

Table 6-3
Card/Node configurations—96-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	NVP12P	SBC
6	NVP12P	NVP12P	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1

Table 6-4
Card/Node configurations—120-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	NVP12P	SBC
6	NVP12P	NVP12P	SBC
7	SBC	NVP12P	EMPTY
8	NVP12P	EMPTY	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1
15	T1	EMPTY	SBC
16	SBC	EMPTY	T1

Table 6-5
Card/Node configurations—144-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	NVP12P	SBC
6	NVP12P	NVP12P	SBC
7	SBC	NVP12P	NVP12P
8	NVP12P	NVP12P	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1
15	T1	EMPTY	SBC
16	SBC	EMPTY	T1

Table 6-6
Card/Node configurations—168-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	NVP12P	SBC
6	NVP12P	NVP12P	SBC
7	SBC	NVP12P	NVP12P
8	NVP12P	NVP12P	SBC
9	NVP12P	EMPTY	SBC
10	NVP12P	EMPTY	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1
15	T1	EMPTY	SBC
16	SBC	EMPTY	T1

Table 6-7
Card/Node configurations—192-port system

Node	Card1	Card2	Card3
1	EMPTY	SBC	BUS
2	BUS	EMPTY	SBC
3	SBC	NVP12P	NVP12P
4	NVP12P	NVP12P	SBC
5	NVP12P	NVP12P	SBC
6	NVP12P	NVP12P	SBC
7	SBC	NVP12P	NVP12P
8	NVP12P	NVP12P	SBC
9	NVP12P	NVP12P	SBC
10	NVP12P	NVP12P	SBC
13	T1	EMPTY	SBC
14	SBC	EMPTY	T1
15	T1	EMPTY	SBC
16	SBC	EMPTY	T1

Chapter 7: Language expansion

This procedure allows installation of additional languages.

Removing a language

There are two ways to remove a language. One is to reinstall the system from scratch. The other is to restore the system from a backup made before the language was added.

CAUTION
Risk of loss of service
Each of the off-line procedures outlined in this guide will cause service to be interrupted.

Perform a courtesy-down procedure on the system prior to commencing any of the procedures described in this guide. This will prevent calls from being abruptly terminated when the operation commences. For more information on courtesy-down procedures, refer to the *System Administration Guide* that is most appropriate for your site (NTP 557-7001-30x).

If you have a printer attached to your terminal, set your terminal up so that the printer will be able to print anything that appears on the screen after the System Installation and Modification Menu appears. First press <PrtScrn> to print the System Installation and Modification Menu. Then press the <Ctrl> and <w> keys followed by <p>, which causes the system to automatically print whatever appears on the screen. Use the same command to toggle back to normal (non-printing) mode.

Note: Before performing the procedures outlined in this chapter, make sure that you have consulted Chapters 1 and 2 of this guide. Failure to do so could lead you to omit important steps in the upgrade or conversion process.

For details on powering down the system, please refer to Chapter 1.

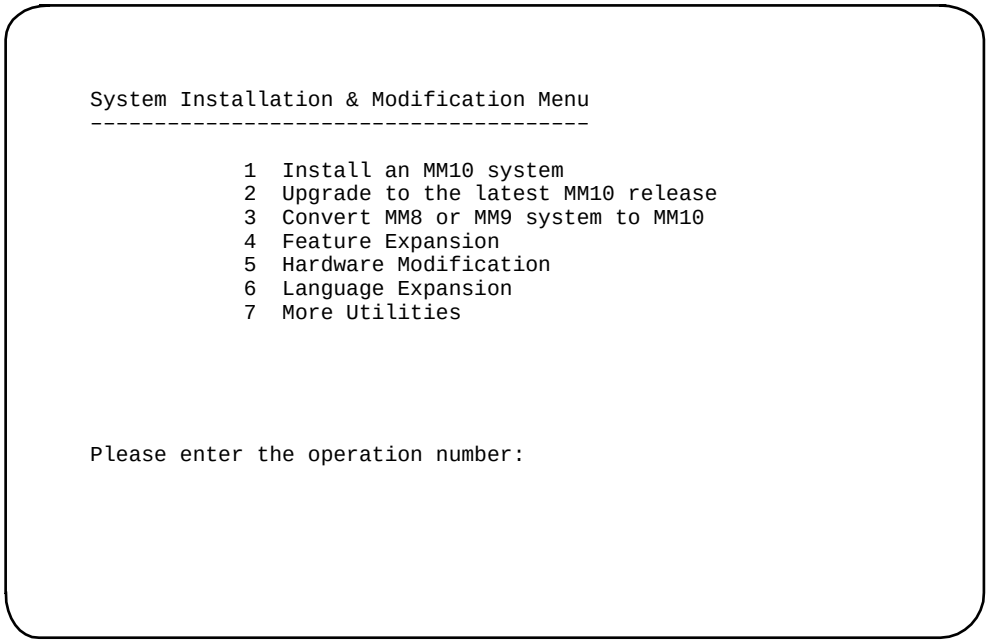
Procedure 7-1
Language expansion

1. Power the system down. Refer to Chapter 1 of this document for details of the power up/power down procedures.
2. Insert the Install/data tape into the tape drive.
3. Power the system up. Refer to Chapter 1 for details.
4. The system automatically runs a series of diagnostic routines, followed by a pause of approximately five minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

   Tape retension

   Once the diagnostic routines are complete, the Meridian Mail software is loaded from the tape. Depending on the number of nodes in the system, it takes between 5 and 10 minutes to load the software. Once loaded, the System Installation and Modification Menu (Figure 7-1) is shown.

Figure 7-1
System Installation and Modification Menu



5. Either enter the number for the desired operation or press the up or down arrow key until that number appears, then press <Return>.

   The following message will be displayed:

   You have chosen to add a language to the system.
   Do you wish to continue? Yes

6 Pressing the up or down arrow key toggles between Yes and No. With the word Yes displayed on the screen, press <Return>. Selecting No returns you to the main menu. Disk shadowing is disabled at the start of adding a language to the system. When you select Yes, you will see the following messages:

Disk shadowing has been disabled.
Please re–enable disk shadowing manually in the MMI
after the operation has been completed and
the system has passed sanity test.

Note: Once the warning is displayed,even if you abort the operation, disk shadowing will have manually enabled when the system is brought back to service.

The system displays the languages available from the Install/data tape as shown below:

Languages available from this tape are:

You may include 4 more language(s).

1 - American English

2 - Canadian French

3 - Latin American Spanish

4 - Brazilian Portuguese

5 - German

6 - Japanese

7 - From Another Tape

Enter the number of the language you require (0 = done) : 1

7 For two or more languages, follow the screen prompts.

8 Press the up or down arrow key until the desired number is displayed on the screen, then press <Return>. If you choose 0 at this point, you are advised that you must choose at least one language, and the selection prompt is repeated.

9 Choose the appropriate entry and press <Return>. The system then responds with

You have chosen (language name)**.**
Is this correct? No (Yes)

10 Select Yes or No, as appropriate, and press <Return>. If you select No, the language prompt is repeated. The prompts will be repeated until the number of languages required have been selected, or until you choose Done (0).

The Language Expansion procedure proceeds without further intervention for about 20 to 40 minutes. If you have chosen a language from another tape, the following message will appear.

Please remove the tape currently in the drive
Press <Return> when ready

11 Remove the tape from the tape drive and press <Return>.

Next you will be prompted with

Please insert an Install/Data tape
Press <Return> when ready

12 Put the tape with the desired language in the tape drive and press <Return>.

13 The new tape will be loaded and you will be returned to Step 8 to select the desired language from the new tape.

As a final step, the system prompts you with

Shutting down tape server
The operation successfully completed.
Remove the tape when it finishes rewinding and boot into service.

#TAPE:MMTAPE1>

Boot to full service

Use the following steps to boot to full service.

1 Remove the tape.

2 Turn the power off.

3 After approximately 10 seconds, turn the power on again.

After booting, the Meridian Mail MSM logon screen will appear and normal operation can commence. This will take from ten to fifteen minutes per node. Refer to Chapter 1 for details on rebooting, and power-up and power-down procedures.

Note: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to reinstall or modify the system.

Chapter 8: Restore system from backup

Restore should be performed by personnel who are familiar with how to insert and remove cartridges, and reboot the system. If necessary, a Nortel representative can run the restore and recovery procedures by remote login, provided the necessary tapes and materials are present on site.

CAUTION
Risk of loss of data possible
The restore process erases all information currently on the disk. Be sure you are restoring the appropriate disk.

CAUTION
Risk of loss of service
Each of the off-line procedures outlined in this guide will cause service to be interrupted.

The purpose of a restore is to return the system to the operational state it was in before the restore became necessary—or as close to that state as possible. It is recommended that a printer be attached to the terminal.

The restore process copies data from the tape to the Meridian Mail system. The tape must have been created previously by performing either a partial or a full backup. The restore process will return the system to the state it was in when the backup was made.

> ***Note:*** If the restore is being done from a full backup, all system and user data will be restored. However, if the restore is done from a partial backup, only the system data can be restored. User voice messages and greetings will be lost.

If possible, perform a courtesy-down procedure before starting the restore. This will prevent calls from being abruptly terminated when the operation commences.

If you have a printer attached to your terminal, set your terminal up so that the printer will be able to print anything that appears on the screen after the System Installation and Modification Menu appears. First, press <PrtScrn> to print the system installation and modification menu. Then, press the <Ctrl> and <w> keys followed by <p>, which causes the system to automatically print whatever appears on the screen. Use the same command to toggle back to normal (non-printing) mode.

Note: Before performing the procedures outlined in this chapter, make sure that you have read Chapter 1 of this guide. Failure to do so could lead you to omit important steps.

Restoration time

The amount of time required to restore depends upon the number of tapes created during the backup process and the number of users being restored. Each tape requires approximately 45 minutes to restore, plus approximately 10 seconds per user (from a partial backup).

Material and personnel required on site

- the most recent Install/data tape for the current software release
- a tape head cleaning kit
- a person who knows how to
  - — insert and remove tape cartridges
  - — reboot a Meridian Mail MSM system
  - — clean tape heads
  - — perform a simple test of the most commonly used facilities

Information required at the remote location

- this document, other related Meridian Mail MSM NTPs, and utility documents
- knowledge of the repairs that were made to the system, particularly which disks were replaced or reformatted
- information about the backups that are available
- ideally the two most recent backups should be available. You must know whether the backups were *full* or *partial* backups

Overview of the restore process

Restore refers to the process of copying the necessary data from the backup tapes to the new disk drive.

Procedure 8-1
Restore system from backup

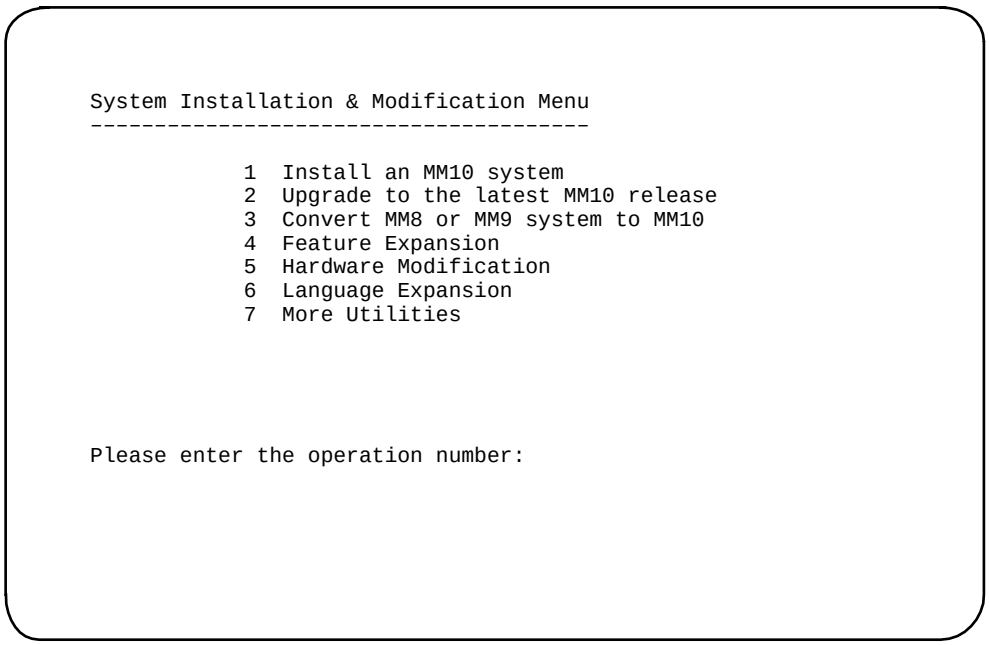
1. Power the system down. Refer to Chapter 1 of this document for details of the power-up/power-down procedures.
2. Insert the Install/data tape into the tape drive.
3. Power the system up. Refer to Chapter 1 for details.

   The system automatically runs a series of diagnostic routines, followed by a pause of approximately five minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

   Tape retension

   Once the diagnostic routines are complete, the Meridian Mail software is loaded from the tape. Depending on the number of nodes in the system, it takes between 5 and 10 minutes to load the software. Once loaded, the System Installation and Modification Menu (Figure 8-1) is shown.

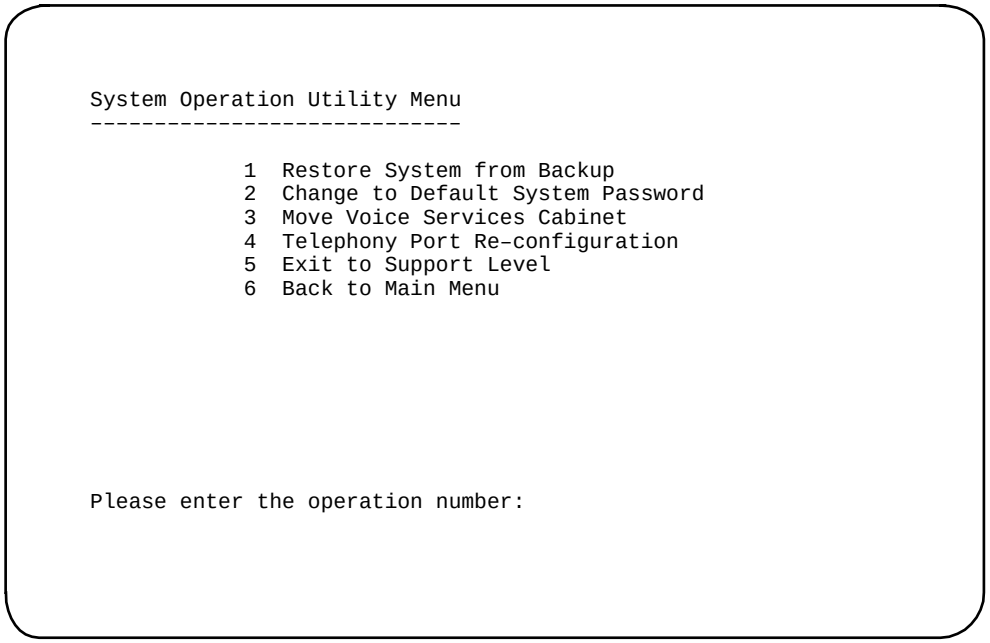
Figure 8-1
System Installation and Modification Menu



4. Press the up or down arrow key until the number for More Utilities is displayed on the screen, then press <Return>.

   The system operation utility menu will be displayed (Figure 8-2).

Figure 8-2
System Operation Utility Menu



5 Either enter the number for the desired operation or press the up or down arrow key until that number appears, then press <Return>.

The following message will be displayed:

You have chosen to restore system from backup
Do you wish to continue? Yes (No)

6 Press <Return> to choose Yes. (Use the up or down arrow key to select No if desired. Choosing No will return you to the main menu.)

The system will then display:

Restore system from Backup

A number of system messages will appear on the screen.

Next you will be asked which nodes you would like restored and what type of backup it was.

Do you wish to restore node n? Yes (No)

7 If you wish to restore the node from the backup tape, use the up or down arrow keys to select Yes, then press <Return>. If you do not wish to restore the node, select No and press <Return>. If you choose Yes, the following prompt will be displayed.

What type of backup was volume VS20n? Voice_Data (Data)

8 If you are restoring from a full backup, use the up or down arrow keys to select Voice_Data (to restore both voice and system data), then press <Return>. If you are restoring from a partial backup, use the up or down arrow keys to select Data (to restore the system data only) and, press <Return>. The prompt shown above will be repeated once for each node that was backed up on the tape.

After you have identified all the nodes to be restored, you will be asked to verify the information. A table similar to the following will appear, indicating the nodes that you wish restored:

You have selected to restore the following:

Node	Volume	Type	From
1	**VS1**	**Data and Voice**	**Tape**
n	**VS20n**	**Data and Voice**	**Tape**
n	**VS20n**	**Data and Voice**	**Tape**

Do you wish to change the above information? No

9 Use the up or down arrow key to select Yes or No, then press <Return>. If you choose Yes, you will be prompted to enter your information again. If you choose No, you will be given the opportunity to abort the entire operation.

Do you wish to continue? Yes (No)

10 If you choose Yes, the restore will continue. If you choose No, the restore will be aborted.

The following message will appear informing you that the disks are being prepared to be restored from the backup.

Formatting disks to be restored:

When the disks are prepared, the following messages will appear along with information telling you what blocks of memory are occupied:

System successfully written to disk

Shutting down tape server

Next, the system asks you to insert the tape containing VS1 on it. Because the Install/data tape does not contain a backup on it, you will be asked to remove the Install/data tape and insert the backup tape or the first of a series of backup tapes.

11 At the prompt press <Return>.

Please insert tape containing VS1 and then press return

12 Put the appropriate tape in the drive and press <Return>.

A number of system messages will appear giving you information on the backup. If there is more than one backup tape, you will be prompted to enter each backup tape as necessary until all the data is copied to disk and all required cabinets have been created. The following messages should appear:

Starting the DR server
Creating required cabinets
Copying prompts from tape to disk

You will now be prompted to insert the Install/data tape in order for the system to reinstall various system prompts.

Please insert the INSTALL/DATA tape
Hit <CR> to continue

13 Put the Install/data tape in the drive and press <Return>.

The procedure will continue without intervention until completed. A number of messages will appear until the following message is displayed indicating that the procedure is complete:

Restore Completed
Reboot system into full service

Boot to full service

Use the following steps to boot to full service:

1 Remove the tape.

2 Turn the power off.

3 After approximately 10 seconds, turn the power on again.

After booting, the Meridian Mail MSM logon screen will appear and normal operation can commence. This will take from 10 to 15 minutes per node. Refer to Chapter 1 for details on rebooting, and on power-up and power-down procedures.

Note: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to reinstall or modify the system.

Chapter 9: Change to default system password

In the event that the system password is lost or forgotten, it can be reset to the default password (ADMINPWD) by using this procedure.

Perform a courtesy-down procedure before starting any of the procedures described in this guide. This will prevent calls from being abruptly terminated when the operation commences.

If you have a printer attached to your terminal, set your terminal up so that the printer will be able to print anything that appears on the screen after the System Installation and Modification Menu appears. First, press <PrtScrn> to print the System Installation and Modification Menu. Then, press the <Ctrl> and <w> keys followed by <p>, which causes the system to automatically print whatever appears on the screen. Use the same command to toggle back to normal (non-printing) mode.

CAUTION
Security risk
Store your password in a safe place where it cannot readily be seen by others. Remember where it is stored.

CAUTION
Risk of loss of service
Each of the off-line procedures outlined in this guide will cause service to be interrupted.

Note: Before performing the procedures outlined in this chapter, make sure that you have read Chapter 1 of this guide. Failure to do so could lead you to omit important steps in the process.

Procedure 9-1
Change to system default password

1 Power the system down. Refer to Chapter 1 of this document for details of the power-up/power-down procedures.

2 Insert the Install/data tape into the tape drive.

3 Power the system up. Refer to Chapter 1 for details.

The system automatically runs a series of diagnostic routines, followed by a pause of approximately five minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

Tape retension

Once the diagnostic routines are complete, the Meridian Mail software is loaded from the tape. Depending on the number of nodes in the system, it takes between 5 and 10 minutes to load the software. Once loaded, the System Installation and Modification Menu (Figure 9-1) is shown.

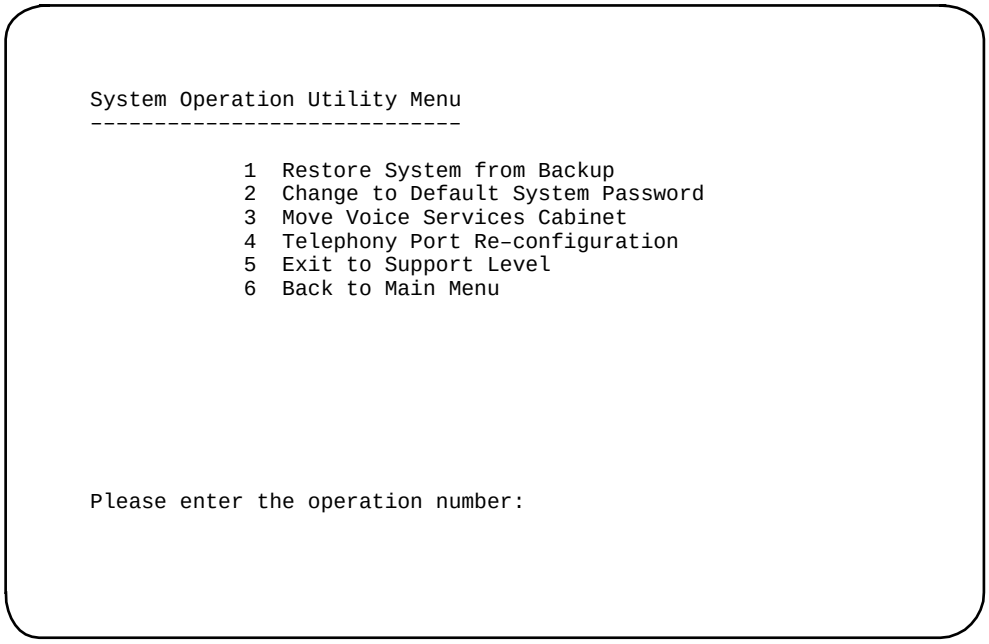
Figure 9-1
System Installation and Modification Menu

```
System Installation & Modification Menu
---------------------------------------

            1  Install an MM10 system
            2  Upgrade to the latest MM10 release
            3  Convert MM8 or MM9 system to MM10
            4  Feature Expansion
            5  Hardware Modification
            6  Language Expansion
            7  More Utilities




Please enter the operation number:
```

4 Press the up or down arrow key until the number for More Utilities is displayed on the screen, then press <Return>.

The system operation utility menu will be displayed (Figure 9-2).

Figure 9-2
System Operation Utility Menu



5 Press the up or down arrow key until the number for Change to Default System Password is displayed on the screen, then press <Return>.

The system responds with

You have chosen to change to default system password
Do you wish to continue? Yes (No)

6 Press <Return> to choose Yes. To choose No, press the up or down arrow key until the word No is displayed on the screen, then press <Return>. If you choose No, you will be returned to the previous menu.

After choosing Yes, the system will display

Change to default system password
The System Administrator's Password has been reset to the default.
Please reboot your system into full service.

The password has now been reset to the default (ADMINPWD).

Boot to full service

Use the following steps to boot to full service:

1 Remove the tape

2 Turn the power off

3 After approximately 10 seconds, turn the power on again.

After booting, the Meridian Mail MSM logon screen will appear and normal operation can commence. This will take from 10 to 15 minutes per node. Refer to Chapter 1 for details on rebooting, and on power-up and power-down procedures.

Note: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to re install or modify the system.

Chapter 10: Move voice services cabinet

Moving the voice services cabinet may be necessary when the it becomes too full. The following procedure causes voice services to be moved from Volume 1 to Volume 203.

Note: When the voice services cabinet has been moved to Volume 203, it will be skipped by partial backups. Only full backups will do a backup of Volume 203.

CAUTION
Risk of loss of service
Each of the off-line procedures outlined in this guide will cause service to be interrupted.

Perform a courtesy-down procedure before starting any of the procedures described in this guide. This will prevent calls from being abruptly terminated when the operation commences.

If you have a printer attached to your terminal, set your terminal up so that the printer will be able to print anything that appears on the screen after the System Installation and Modification Menu appears. First, press <PrtScrn> to print the System Installation and Modification Menu. Then, press the <Ctrl> and <w> keys followed by <p>, which causes the system to automatically print whatever appears on the screen. Use the same command to toggle back to normal (non-printing) mode.

Note: Before performing the procedures outlined in this chapter, make sure that you have read Chapter 1 of this guide. Failure to do so could lead you to omit important steps in the process.

Procedure 10-1
Move voice services cabinet

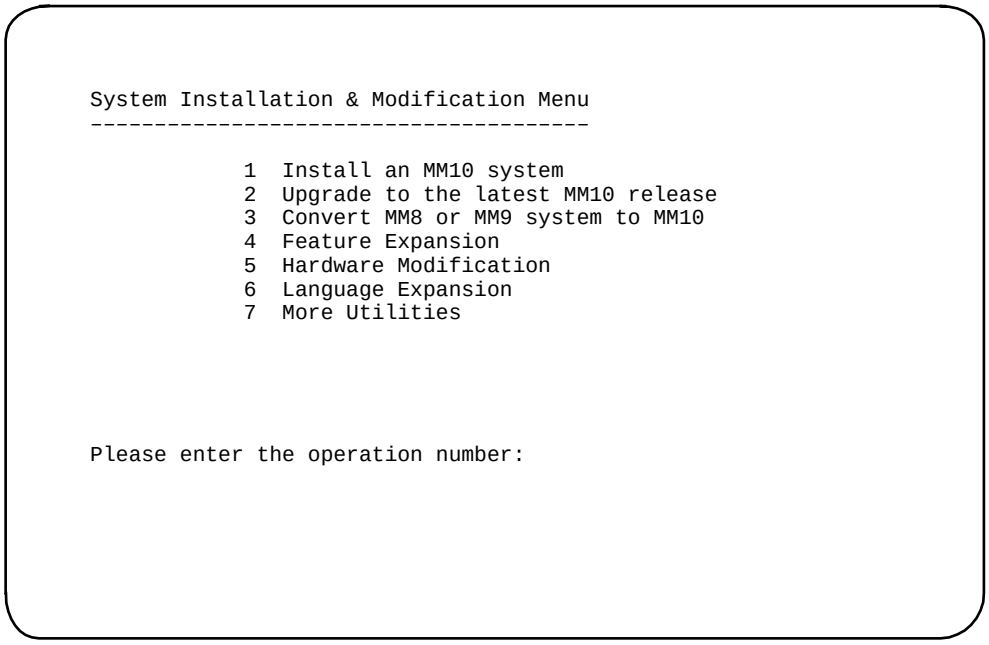
1. Power the system down. Refer to Chapter 1 of this document for details of the power-up/power-down procedures.
2. Insert the Install/data tape into the tape drive.
3. Power the system up. Refer to Chapter 1 for details.

   The system automatically runs a series of diagnostic routines, followed by a pause of approximately five minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

   Tape retension

   Once the diagnostic routines are complete, the Meridian Mail software is loaded from the tape. Depending on the number of nodes in the system, it takes between 5 and 10 minutes to load the software. Once loaded, the System Installation and Modification Menu (Figure 10-1) is shown.

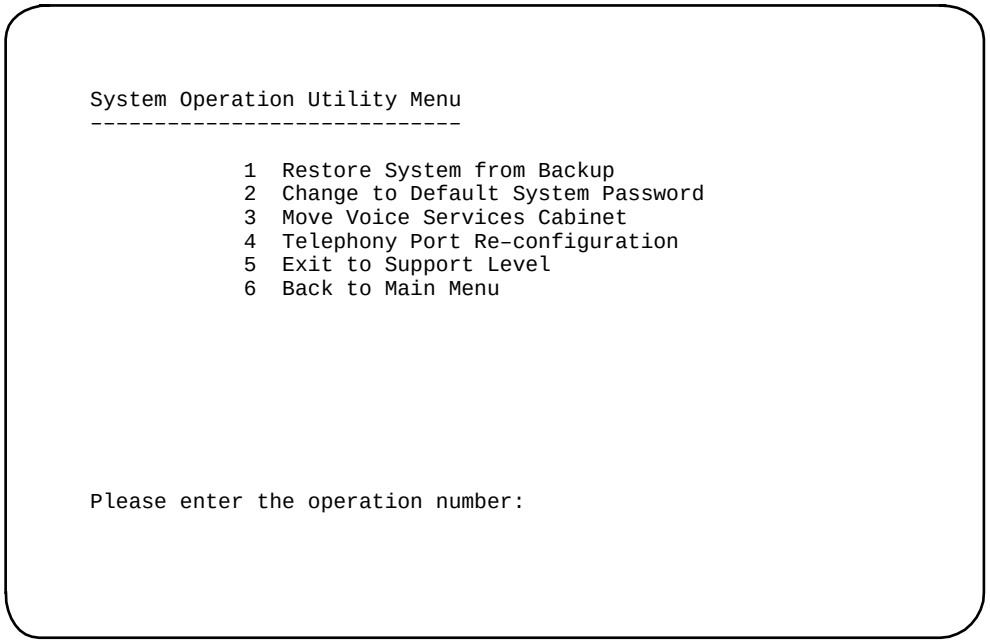
Figure 10-1
System Installation and Modification Menu



4. Press the up or down arrow key until the number for More Utilities is displayed on the screen, then press <Return>.

   The System Operation Utility Menu will be displayed (Figure 10-2).

Figure 10-2
System Operation Utility Menu



5 Press the up or down arrow key until the number for Move Voice Services Cabinet is displayed on the screen, then press <Return>. The system responds with

You have chosen to move the voice services cabinet
Do you wish to continue? Yes (No)

6 Press <Return> to choose Yes. To choose No, press the up or down arrow key until the word No is displayed on the screen, then press <Return>. If you choose No, you will be returned to the previous menu.

After choosing Yes, a series of system messages will be displayed.

The system will then display the following, asking you to confirm the information:

The Voice Services will be moved from Volume 1 to Volume 203
Do you want to continue? Yes (No)

Note: If the voice service cabinet is already on Volume 203 and this procedure is run, the cabinet will be moved to Volume 1.

7 Press <Return> to choose Yes. To choose No, press the up or down arrow key until the word No is displayed on the screen, then press <Return>. If you choose No, you will be returned to the previous menu.

After choosing Yes, a series of system messages will be displayed.

The procedure continues without further operator intervention until the completion message appears.

The operation successfully completed.

Please remove the tape when it finishes rewinding and boot to full service.

Boot to full service

Use the following steps to boot to full service:

1 Remove the tape.

2 Turn the power off.

3 After approximately 10 seconds, turn the power on again.

After booting, the Meridian Mail MSM logon screen will appear and normal operation can commence. This will take from 10 to 15 minutes per node. Refer to Chapter 1 for details on rebooting, and on power-up and power-down procedures.

Note: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to reinstall or modify the system.

Chapter 11: Telephony port reconfiguration

What is telephony port reconfiguration?

The telephony port reconfiguration utility allows maintenance and installation personnel to reassign port type and port capability to hardware locations on each node of a system. Its main function is to provide the administrator with the ability to redefine multimedia and/or voice ports. The Telephony port reconfiguration utility allows you to

- add multimedia ports by converting full-service voice ports to multimedia ports at a three to two ratio. That is, three voice ports are replaced for every two multimedia ports you define.
- convert multimedia ports back to full-service voice ports at a two to three ratio.

For more information on port ratios, see the *MSM Planning and Engineering Guide* (NTP 557-7001-100).

The system must be "courtesied down" before being taken out of service. This will prevent calls from being abruptly terminated when the operation commences. For more information on courtesy-down procedures, refer to the *System Administration Guide* that is most appropriate for your site (NTP 557-7001-300).

If you have a printer attached to your terminal, set your terminal up so that the printer will be able to print anything that appears on the screen after the System Installation and Modification Menu appears. First, press <PrtScrn> to print the System Installation and Modification Menu. Then, press the <Ctrl> and <w> keys followed by p, which causes the system to automatically print whatever appears on the screen. Use the same command to toggle back to normal (non-printing) mode.

Note: Before performing the procedures outlined in this chapter, make sure that you have consulted Chapters 1 and 2 of this guide. Failure to do so could lead you to omit important steps in the upgrade or conversion process.

For details on powering down the system, please refer to Chapter 1.

Procedure 11-1
Telephony port reconfiguration

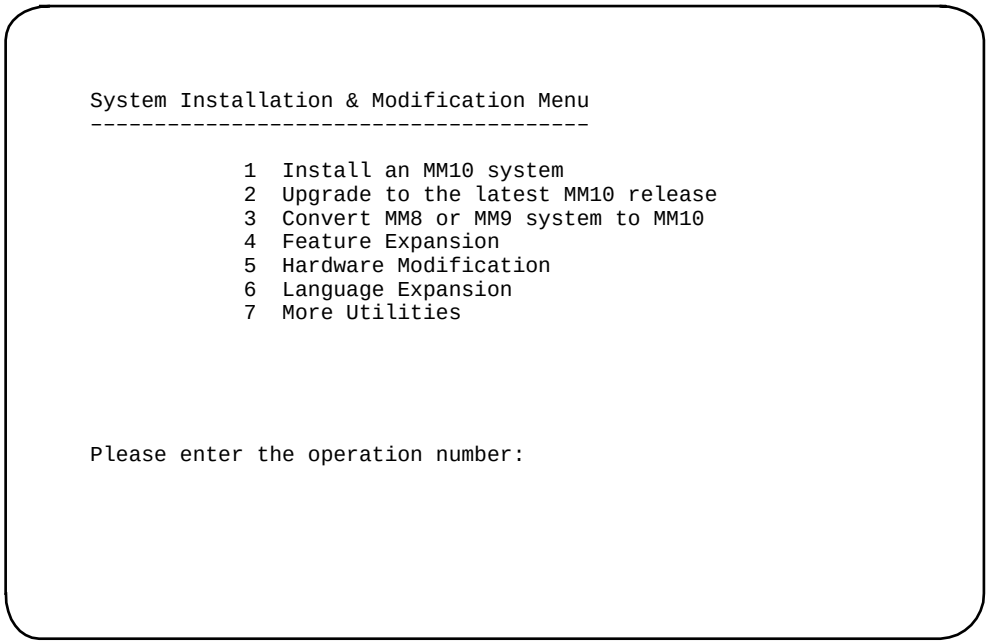
1. Power the system down. Refer to Chapter 1 of this document for details of the power-up procedures.
2. Install the new hardware.
3. Insert the Install/data tape into the tape drive.
4. Power the system up. Refer to Chapter 1 for details.

   The system automatically runs a series of diagnostic routines followed by a pause of approximately five minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

   Tape retension

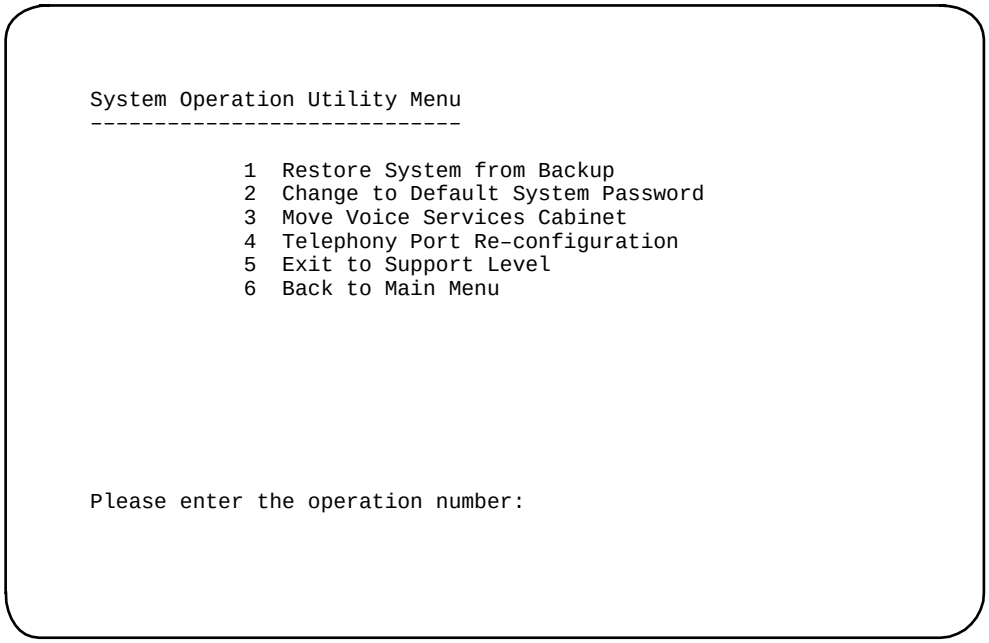
   Once the diagnostic routines are complete, the Meridian Mail software is loaded from the tape. Depending on the number of nodes in the system, it takes between 5 and 10 minutes to load the software. Once loaded, the System Installation and Modification Menu (Figure 11-1) is shown.

Figure 11-1
System Installation and Modification Menu



The System Operation Utility Menu will be displayed (Figure 11- 2).

Figure 11-2
System Operation Utility Menu



5 Press the up or down arrow key until the number forTelephony Port Re-configuration is displayed on the screen, then press <Return>. The system responds with

You have chosen telephony port reconfiguration.
Do you wish to continue? Yes (No)

6 Press <Return> to choose Yes. To choose No, press the up or down arrow key until the word No is displayed on the screen, then press <Return>. If you choose No, you will be returned to the previous menu.

After choosing Yes, a series of system messages will be displayed.

The system will then display the following, asking you to confirm the information:

Do you want to continue? Yes (No)

7 Press <Return> to choose Yes. To choose No, press the up or down arrow key until the word No is displayed on the screen, then press <Return>. If you choose No, you will be returned to the previous menu.

8 A number of system messages will appear indicating that software is being loaded. This should take about five minutes. Selecting No returns you to the main menu.

You are then asked to define the T1 Span parameters. Defaults, which are normally acceptable in North America, are shown in bold face print; options are in light face.

The following T1 Spans are on this system

All spans will be displayed after the mailbox levels have been entered.

If a system has 48 channels, prompts for Span A and Span B will appear. Similarly, for 72 channels, you will be prompted for Spans A through C and so on. For 192 channels, prompts for Spans A through H will be shown.

Note: If you have more than two spans, you are prompted to press <Return> to continue to display more spans.

Span A

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Span B

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Span C

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Span D

Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Select operation: Display (Change, Done)

Select Display if you wish to see the T1 Span parameters again. You can choose the range of T1 spans that you wish to be displayed. The following example is given:

You are prompted to enter the start range.

From: SpanA

Press <Return>

You are prompted to enter the end range. Use the up and down arrow keys to select the range you require.

To: SpanB

Press <Return>.

The following T1 spans will be displayed:

Span A		
Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**
Span B		
Sync Mode: External T1 Timing	**Line signalling: DTMF**	
LineIntf Type: FXOGrdStart	**Start Type: WinkStart**	**Trunk Type: NonDIDTrunk**
Frame Format: D4	**Line Code Format: B8ZS**	
Line Length: 0 to 133	**T1 Alarm: Bit_two**	**T1_Debounce:130**
T1_GuardTime: 130	**ESFD: 0**	**BVCR: 0**
OOFD: 0	**Ring Pulse: 130 msec**	**Hook Flash Pulse: 320 msec**

Select operation: Display (Change, Done)

9 Use the up and down arrow keys to select Change if you wish to change the parameters of some or all of the T1 spans.

You will be prompted for a range of T1 spans to change before entering the 16 Span parameters. The following is an example:

From: SpanA

Press <Return>

You are prompted to enter the range at which you wish to end. Use the up and down arrow keys to select the range you require.

To: SpanA

Press <Return>.

The following T1 spans will be displayed:

Select InternalBCTiming if the system is connected to the switch via channel banks; select ExternalT1Timing if connected to a DMS, DTC or DAX.

Sync Mode	**: ExternalT1Timing**	(InternalBCTiming)
Line signalling	**: DTMF**	(DP)

LineIntf Type	**: FXOGrdStart**	(FXOLoopStart, FXSGrdStart,FXSLoopStart, FourW_EnMtype)
Start Type	**: WinkStart**	(ImmedStart, DelayStart)
Trunk Type	**: NonDIDTrunk**	(DIDTrunk, ASPTrunk)
Frame Format	**: D4**	(ESF)
Line Code Format	**: B8ZS**	(B7, Transparent)
Line Length	**: 0 to 133**	(133to266, 266to399, 399to533, 533to655)
T1 Alarm	**: Bit_two**	(s_Bit)
T1_Debounce	**:130**	(50 to MAXINT)
T1_GuardTime	**:130**	(0 to MAXINT)
ESFD	**: 0**	(0 to 15)
BVCR	**: 0**	(0 to 255)
OOFD	**: 0**	(0 to 15)
Ring Pulse	**: 130**	(0 to MAXINT)
Hook Flash Pulse	**: 320**	(0 to MAXINT)

Select operation: Display (Change, Done)

Use the up and down arrows to toggle each selection.

10 Select Done when you are finished setting the T1 Span parameters.

Note: When the MSM is using Connections with an AT&T or ROLM switch, the hook flash pulse value must be set to 480.

11 You are then asked to define the T1 link information:

Please define the TI Channels

If MultiSMDI is not enabled, the following prompt will appear:

You may only have ONE Link defined. Any attempt to create a new link will overwrite the previous definition.

Please enter the information to create or redefine a Link

12 Enter the required information.

Link ID: 1

Note 1: Link ID is the name of the SMDI link. The Link ID for each SMDI port is unique and must be entered at this time. You can enter either numeric or alpha characters in this field. It is recommended that you use a meaningful name (as opposed to a number) so that it is easy to identify the link.

Login Code:	***85**	(See entry for UCDA in Table IBNXLA in the *MSM Translations Guide* NTP 557-7001-310.)

Logout Code: ***86** (See entry for UCDD in Table IBNXLA in the *MSM Translations Guide* NTP 557-7001-310.)

Note 2: Blank out the Login and Logout codes if the channel is connecting to a PBX.

NRDD Code: ***88**

Switch Type: ****DMS100_Centrex** (DMS100_POTS, Meridian_SL100, AT&T_1A_EES, AT&T_5_ESS)

Note 3: If you need to modify the switch record data, please refer to *System Administration Tools* (NTP 557-7001-305).

Note 4: *These selections are available without MConnections; with MConnections, the added selections available are: Meridian_1, DMS_10, AT&T_PBX, ROLM_PBX.*

Agent Position ID: **9999**

Are done defining Links ? Yes (No)

13 Use the up or down arrow keys to select Yes if you have completed defining all of the SMDI links on the system.

or

Use the up or down arrow keys to select No, in order to define another link or to redefine an existing link. If you redefine an existing link (by using a link ID that has already been defined) you will be prompted:

WARNING: This LinkID has already been defined, the previous definition will be overwritten.

Are you sure? No (Yes)

If you do not have the feature MultiSMDI enabled (so there can only be one SMDI link defined) and you choose to define another link (or redefine an existing link), you will be prompted:

WARNING: Only one LinkID can be defined, the previous definition will be overwritten.

Are you sure? No (Yes)

14 Use the up or down arrow keys to select Yes to overwrite the link information or No to leave the link as it was.

Would you like to re-enter this information? No (Yes)

15 Use the up or down arrow keys to select No if you have completed defining all the links, and are ready to continue with the software installation.

WARNING: If you select Yes to re-enter link information, any changes that you have just made will be lost.

16 You are then asked to define the T1 hardware locations.

Span	---------- T1 Hardware Location ----------																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
2	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
3	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

Select operation: DetailedDisplay (Change, Done, Summary)

The following are options for Select operation:

DetailedDisplay: This is used to view the settings for a single channel or a range of channels.

Change: This is used to enter the settings for a single channel or a range of channels. The parameters for each channel within the selected range are set to the value entered, except for DN and message terminal. They start with the value entered and are incremented by one. See the following sample settings, starting at "Port Type".

Summary: This is used to view a summary of all the channels and their type (M = Multimedia, V = full service voice, Vb = basic service voice).

Done: This is used to commit the channel settings and continue.

The following is an example of the information displayed during a DetailedDisplay.

Number	DN	Type	UCDDN	Login Code	Logout Code	Msg. Term	LinkID	AgtPosn
1	2800	V	3650	*85	*86	1	1	9999
2	2801	V	3650	*85	*86	2	1	9999
3	2802	V	3650	*85	*86	3	1	9999
4	2803	V	3650	*85	*86	4	1	9999

17 Change the T1 Hardware Locations to match the desired system configuration.

Note: When defining the T1 hardware locations, in particular the Link ID, you must use the up and down arrow keys to choose a previously defined Link ID and then press <Return> to select it.

The following is an example of the method used to change hardware locations.

18 When you press <Return> after the Change prompt (above), you will be given the opportunity of changing the port assignments. A display similar to the following will be shown. At each line the values may be changed.

Port Type **: MultiMedia** (Voice_Basic, MultiMedia)

First Span **: 1**

First Location **: 1**

Last Span **: 1**

Last Location **: 6**

DN **: 2800** (This is the default. The value you use may be up to seven digits. See Service Orders section of the *MSM Transltions Guide* NTP 557-7001-310.)

Link Type **: SMDI** (ASP, SCAI, CSL)

UCDDN **: 3650** (See Table DNROUTE in the *MSM Translations Guide* NTP 557-7001-310.)

Link ID **: 1** (The link ID must match one of the SMDI links that were previously defined.)

Message Desk **: 63** (See the message desk field in Table UCDGRP in the *MSM Translations Guide* NTP 557-7001-310.)

Message Terminal **: 1** (Agent DN for DMS.)

Select operation: DetailedDisplay (Change, Done, Summary)

19 Once you have finished defining all the T1 hardware locations, use the up or down arrow keys to select Done.

Span	T1 Hardware Location																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	M	M	M	M	M	M	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	--	--	--
2	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
3	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
4	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb

Is this correct? No (Yes)

20 Using the up or down arrow keys, select Yes if the summary displayed is correct, or select No to return to Step 16 and continue changing the T1 hardware locations.

You then define the VP hardware location:

Node	VP Hardware Location																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
3	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
4	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
5	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
6	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

Select operation : Summary (Change, Done)

The following are options for Select operation:

Summary: This is used to view a summary of all the channels and their type.

Change: This is used to enter the channel type (Voice_Basic, Voice_Full, or MultiMedia), for a range of channels.

Done: This is used to commit the channel settings and continue.

21 Change the VP Hardware Locations so that the number of each type defined matches the number of each type defined for the T1 hardware locations.

The following is an example of the method used to change VP hardware locations.

Port Type **: MultiMedia** (Voice_Basic, MultiMedia)

First Node **: 3**

First Location **: 1**

Last Node **: 3**

Last Location **: 9**

Select operation **: Done** (Change, Summary)

Note: 1 Multimedia locations must be selected in multiples of three (3), beginning at 1, 4, 7, 10, 13, and so on. Locations may be configured across multiple nodes at one time.

Note: 2 The number of multimedia ports selected must be equal to the number of T1 locations configured.

22 When you have finished making changes, select Done, and a summary of the VP hardware locations will be displayed.

Node	----------VP Hardware Location ----------																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
3	M	M	--	M	M	--	M	M	--	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
4	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
5	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb
6	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb	Vb

Is this correct? No (Yes)

23 Using the up or down arrow keys, select Yes to continue or No to return to Step 20 and continue changing the VP hardware locations.

24 The system will continue uninterrupted until the following message appears:

Shutting down tape server

The operation successfully completed.

Remove the tape when it finishes rewinding and boot into full service.

25 The telephony port reconfiguration procedure is now complete. Remove the tape.

26 After removing the tape, turn the power off. Then after approximately 10 seconds, boot the system by turning the power on again. Booting will take from ten to fifteen minutes per node. After booting, the Meridian Mail logon screen will appear and normal operation can commence.

Boot to full service

Use the following steps to boot to full service.

1 Remove the tape.

2 Turn the power off.

3 After approximately 10 seconds, turn the power on again.

After booting, the Meridian Mail MSM logon screen will appear and normal operation can commence. This will take from 10 to 15 minutes per node. Refer to Chapter 1 for details on rebooting, and power-up and power-down procedures.

Note: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to reinstall or modify the system.

Chapter 12: Exit to support level

This procedure is most commonly used by support personnel who require specialized access to the system.

CAUTION
Risk of system damage
The exit to support level selection should only be used by authorized personnel. If you inadvertently enter this portion of the program, you should return to the main menu immediately. *To return to the main menu, type SC_OPS, then press <Return>*. Major damage to the system could result from inexperienced personnel changing important parameters.

If you have a printer attached to your terminal, set your terminal up so that the printer will be able to print anything that appears on the screen after the System Installation and Modification Menu appears. First, press <PrtScrn> to print the System Installation and Modification Menu. Then, press the <Ctrl> and <w> keys followed by <p>, which causes the system to automatically print whatever appears on the screen. Use the same command to toggle back to normal (non-printing) mode.

Note: Before performing the procedures outlined in this chapter, make sure that you have read Chapter 1 of this guide. Failure to do so could lead you to omit important steps in the process.

Perform a courtesy-down procedure before starting any of the procedures described in this guide. This will prevent calls from being abruptly terminated when the operation commences.

Procedure 12-1
Exit to support level

1 Power the system up. Refer to Chapter 1 for details.

The system automatically runs a series of diagnostic routines followed by a pause of approximately five minutes while the tape is automatically retensioned. When retensioning begins, the following message is displayed:

Tape retension

Once the diagnostic routines are complete, the Meridian Mail software is loaded from the tape. Depending on the number of nodes in the system, it takes between 5 and 10 minutes to load the software. Once loaded, the System Installation and Modification Menu (Figure 12-1) is shown.

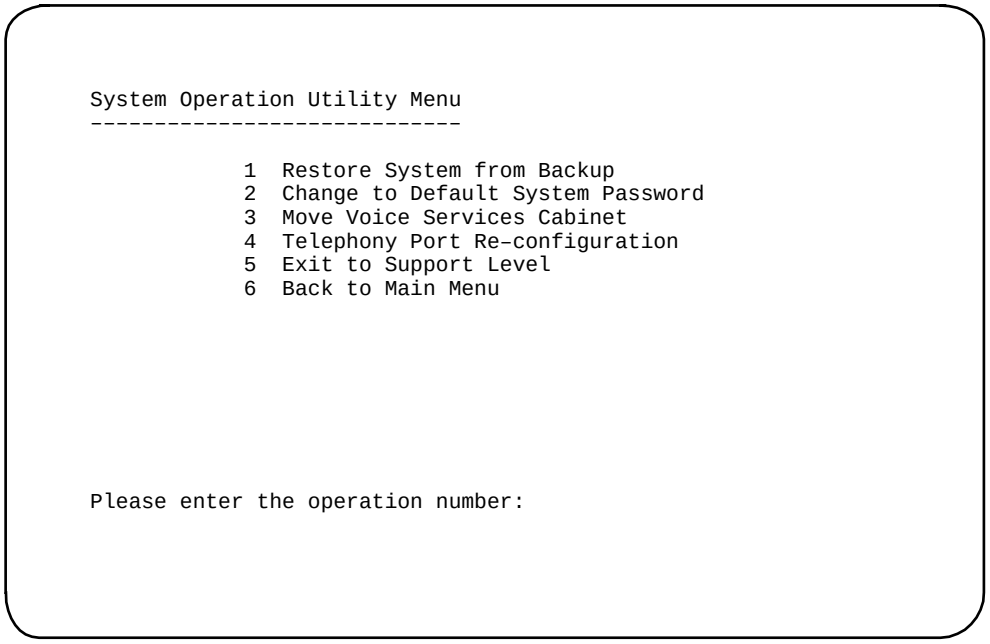
Figure 12-1
System Installation and Modification Menu

```
System Installation & Modification Menu
---------------------------------------

            1  Install an MM10 system
            2  Upgrade to the latest MM10 release
            3  Convert MM8 or MM9 system to MM10
            4  Feature Expansion
            5  Hardware Modification
            6  Language Expansion
            7  More Utilities




Please enter the operation number:
```

2 Press the up or down arrow key until the number for More Utilities is displayed on the screen, then press <Return>.

The System Operation Utility Menu will be displayed (Figure 12-2).

Figure 12-2
System Operation Utility Menu



3 Press the up or down arrow key until the number for Exit to Support Level is displayed on the screen, then press <Return>.

The system responds with

You have chosen to exit to support level
Do you wish to continue? Yes (No)

4 Press <Return> to choose Yes. To choose No, press the up or down arrow key until the word No is displayed on the screen, then press <Return>. If you choose No, you will be returned to the previous menu. After choosing Yes, the system responds with

#TAPE:MMTAPE>

5 After performing the required support services, type the following command to return to the System Operation Utility Menu, or boot to full service:

SC_OPS <Return>

Boot to full service

Use the following steps to boot to full service:

1 Remove the tape.

2 Turn the power off.

3 After approximately 10 seconds, turn the power on again.

After booting, the Meridian Mail MSM logon screen will appear and normal operation can commence. This will take from 10 to 15 minutes per node. Refer to Chapter 1 for details on rebooting, and on power-up and power-down procedures.

Note: It is important that the Install/data tape be stored in a safe place. This will ensure that the tape is available if you need to reinstall or modify the system.

Appendix A: Configuring SMDI modems

The information in this section is specific to SMDI. For information on configuring network modems, refer to *MSM Networking Installation Procedures* (NTP 557-7001-214).

Modems supported

Four types of external modem are supported for use between the Message Services Module (MSM) and related equipment. They are

- Ven-Tel EC2400 Plus II, version 4.68
- UDS (Motorola) 2440, versions 3050-5C, -5F, -5G
- Case Rixon DCM4222*
- General Datacom DC224+*

*Supported only at 2400 bps

Modems must be set for leased line auto-answer with automatic error handling MNP disabled.

> ***Note 1:*** The Ven-Tel EC2400 Plus II modem has the capability of automatic fallback to a lower bps rate when in leased line mode. The UDS modem must be manually set to the specific bps rate required.

A leased line must be installed by the local telephone company if the SMDI connection between the MSM and the switch exceeds 170.4 m (500 ft) in length. The telephone company must provide a 2-wire leased line to support 2400 bps modem transmissions. The leased line must have the following characteristics:

1 The line conditions must conform to BELCORE 3002, SCHED 4, TYPE 4.

2 The line impedance (Z) shall be 600 ohms.

3 The Z-loss shall be no less than 40 ohms per 340.8 m (1000 ft.).

4 The signal-to-noise ratio must be >50 dBm @2000 Hz.

If the length of the line is less than 170.4 m (500 ft), a leased line is not required. However, the preceding line conditions must be maintained in order to ensure effective communications between the MSM and the switch.

SL-100 datafill required

The datafill input for the SL-100 translations must set the parity fields in the applicable data tables to EVEN. For details on the datafill requirements, refer to the *MSM Translations Guide* (NTP 557-7001-310).

Ven-Tel modem setup

When initially powered on, the Ven-Tel modem uses default parameters. Several of these must be changed for use with Meridian Mail MSM. To change the default settings of the Ven-Tel modem, use Procedure 13-1.

Procedure 13-1
Setup for the Ven-Tel modem

1. Using a standard RS-232 straight-through cable, connect a terminal to the modem.

   Note: This is a temporary connection for the purposes of programming the modem only. Once the modem is programmed, you will disconnect the modem from the terminal and connect it according to the installation procedure.

2. Connect the terminal and the modem to a source of AC power and turn them both on.
3. Verify that the terminal is set to the desired baud rate.
4. From the terminal, enter the following non-default codes:

   AT&F <Return>

   AT&C1 <Return>

   AT&D2 <Return>

   AT\N1 <Return>

   ATS64=1 <Return>

5. If you choose to display the setup, enter the following command:

   AT\S <Return>

   The display will appear as shown below (with the exception of &L2 which will display as &L0.

   %A0 B0 *B0 &C1 \C0 %C1 &D2 \D0 E1 F1 &G0 \G1 \J0 &L2 M1 &M0 \N1 *N0 &P0 Q0 \Q1 #R0 &R0 #S0 \T0 &T4 V1 \V0 X4 &X0 \X0 Y0 *A= 018,015,001,004

6. Enter the final command at this time. This saves the configuration.

   AT&L2&W <Return>

7. To start normal operation, turn the modem off, wait ten seconds, then turn it back on.

8 If you wish to check the saved configuration at some later time, turn the modem off, then on again, then immediately enter the following command:

AT\S <Return>**.**

Note: If you wait longer than ten seconds, this command will not work.

9 Check the modem settings against those listed above. If there is any discrepancy, confirm that the switches are set correctly. Refer to Table 13-1, then repeat steps 3 to 5.

10 Power off and connect the modem as discussed in the installation methods.

Table 13-1
Ven-Tel modem switch settings

S2-1	0n	DTR not forced
S2-2	0ff	Result word displayed
S2-3	0n	Result code sent
S2-4	0ff	Echo in command mode
S2-5	0ff	Answer on first ring
S2-6	0ff	Carrier detect from remote equipment
S2-7	0n	Speaker on until carrier detected
S2-8	0n	Modem will respond to command
S2-9	0n	NVRAM mode command set enabled
S2-10	0ff	Ven-Tel dialer disabled

11 If the AT command interpreter is required, turn the modem off, then on again.

12 Within five to seven seconds, type the following command:

AT&L0 <Return>

Normal AT commands can then be given (refer to the manufacturer's instructions for details).

When the modem configuration is complete and correct, the red LED indicator for MR/EC (Modem ready/error corrected) will light up on the front panel. The LED will be red normally except when an error corrected session is in progress. If a green LED remains when a connection is made, the modem is not set up correctly. Check the settings again.

UDS 2440 modem setup

The UDS 2440 modem provides full-duplex, two-wire communications over dial-up or leased lines at data rates up to 2400 bps. It is used to communicate between remote Meridian Mail administration terminals and the Meridian Mail system.

Most modem parameters are correctly set by the UDS factory for operation with the MSM. However, you should ensure that the default configuration is enabled and that the local echo function is disabled.

Default configuration

The default parameters for the UDS 2440 modem are as follows:

- asynchronous
- 2400 bps data rate
- dial-up line
- auto-answer on first ring
- Pulse Dial
- Autodialer waits for dial tone and detects busy signals
- attempt to establish MNP protocol first
- if MNP protocol not successful, try normal
- data compression enabled
- flow control disabled
- modem DCE speed follows DTE speed
- DTE word length and parity switch to 8/none when on-line
- return minimum status and result messages
- return connect speed in connect message
- speaker volume medium
- long space disconnect off
- protocol inactivity timer disabled
- modem ignores the DTR pin
- CTS pin follows RTS pin
- DCD or CD pin always on
- DSR pin always on
- AL and CH pins disabled
- accept Remote Digital Loopback request from remote modem

The only additional parameter requiring configuration is the disable the local echo function.

Modem installation

Procedure 13-2
Install the UDS 2440 modem

1. Connect the modem to an administration terminal using a standard RS-232 straight-through cable.
2. Connect the modem and the terminal to AC power.
3. Turn the power on to both units.

   When the modem is powered on, it is automatically in command mode and ready to accept AT commands from the terminal.

Modem configuration (UDS 2440)

The following information is generally all that is needed to configure the modem. Should you require additional information, please refer to the *UDS 2440 Installation and Operation Manual.*

Note: Most modem parameters are set correctly by the UDS factory for operation with the MSM. However, you should ensure that the default configuration is enabled and that the local echo function is disabled. If the modem has been used elsewhere, you should perform the following procedures.

There are two methods of configuring the modem. It may be configured from the terminal via the keyboard using AT commands, or it may be configured from the front panel.

Note: The UDS 2440 has no internal jumper settings.

Procedure 13-3

Configure the UDS 2440 modem, AT command method

1. To use factory default values, enter the following command from the terminal:

   at&f <Return>

2. Enter one of the following command strings:

   ATS0=0 <Return>

   AT&L1 <Return>

   or

   ATS0=0 <Return>

   ATS27=68 <Return>

3. Enter **ats14=140** <Return> to disable the local echo function.

   Note: The AT command interpreter must be disabled before disabling the local echo function (see Procedure 13-4).

4. Enter **at%L** <Return>.
5. Enter **atS91=1** <Return>.
6. Enter **ats92=1** <Return>.
7. Save the configuration by entering **at&w** <Return>.

   The command entered will not be displayed because the modem's local echo is disabled.

8. Turn the modem off, wait ten seconds, then turn it back on.
9. Check the saved configuration by entering **at** <Return>.

   No display should be on the screen. Repeat steps 1 to 5 if there is any display.

   This completes the procedure for setting the default profile.

Procedure 13-4
Disable AT command interpreter, AT command method

1 Disable AT command interpreter by entering the following command:

ATS14=156 <Return>

Procedure 13-5

Configure the UDS 2440 modem, front panel method

1 With the main menu showing, press the NO button until OPTIONS? appears in the window.

2 With OPTIONS? showing, press the YES button once.

The display will now show RESET?

3 With RESET? showing, press the NO button once.

The display will now show FACTORY?

4 With FACTORY? showing, press the YES button until FACTORY 0? appears in the window.

5 With FACTORY 0? showing, press the YES button.

The modem will load factory defaults and the display will change to FACTORY?.

6 With FACTORY? showing, press NO until SAVE? appears in the window.

7 With SAVE? showing, press the YES button.

This completes the procedure for setting the default profile.

Procedure 13-6
Disable command interpreter, front panel method

1 With main menu displayed, press NO until DATA OPTS? shows.

2 With DATA OPTS? displayed, press YES.

The display will show SYNC MODE?

3 With SYNC MODE? displayed, press NO.

The display will show DTE OPTS?

4 With DTE OPTS? displayed, press YES.

DTE RATE? will show.

5 With DTE RATE? showing, press NO until AT CMDS? is displayed.

6 With AT CMDS? showing, press YES.

The display will show either AT CMDS E or AT CMDS D (that is, enabled or disabled).

7 If AT CMDS E shows, press NO.

The display will change to AT CMDS D. (If AT CMDS D was already showing, go to the next step.)

8 With AT CMDS D showing, press YES.

This completes the procedure for disabling the command interpreter.

Procedure 13-7
Disable local echo

Note: The AT command interpreter must be disabled before disabling the local echo function. If you are using the front panel see Procedure 13-6.

1 With the main menu displayed (default power on), press the NO button until DATA OPTS? appears.

2 With DATA OPS? showing, press the YES button.

SYNC MODE? will be displayed.

3 With SYNC MODE? displayed, press NO until DTE OPTS? shows.

4 With DTE OPTS? showing, press the YES button once.

DTE RATE? will now be displayed.

5 With DTE RATE? displayed, press the NO button three times.

DTE ECHO? will show.

6 With DTE ECHO? showing, press the YES button once.

The display will now show either DTE ECHO E or DTE ECHO D (that is, enable or disable).

7 If DTE ECHO E is showing, press the NO button once.

The display will now show DTE ECHO D. (If DTE ECHO D was already showing, go to the next step.)

8 With DTE ECHO D showing, press the YES button.

This completes the procedure for disabling local echo.

Procedure 13-8
Configure for leased line

Changing the configuration from the default dial-up line to leased line may be done from the terminal or from the front LCD panel of the modem. To change the leased-line configuration from the terminal, follow the step given below.

1 Type **AT&L1** <Return> from the terminal.

To change to leased line configuration from the front panel of the modem, follow the steps given below.

1 With the main menu showing, press the NO button until OPTIONS? appears in the window.

2 With OPTIONS? displayed, press YES.

RESET? now shows.

3 With RESET? showing, press NO until TELE OPTS? is displayed.

4 With TELE OPTS displayed, press the YES button.

LINE TYPE? now shows.

5 With LINE TYPE? showing, press YES.

DIAL UP? or LEASED? is displayed.

6 If DIAL UP? is displayed, press NO.

The display changes to LEASED? (If LEASED? was already showing, go to the next step.)

7 With LEASED? showing, press YES.

LINE TYPE? is displayed.

8 With LINE TYPE? displayed, press NO until ANS/ORIG? shows.

9 With ANS/ORIG? showing, press YES.

The display will show either MODE ANS? or MODE ORIG?

10 If MODE ORIG? is displayed, press NO.

MODE ANS? will then be displayed. (If MODE ANS? was displayed, go to the next step.)

11 With MODE ANS? showing, press YES.

ANS/ORIG? is displayed.

12 With ANS/ORIG? displayed, press NO until SAVE? appears.

13 With SAVE? showing, press the YES button.

Procedure 13-9
Disable SMDI connection (Disable MNP)

1 Press the YES button to display the main menu items.

HANG-UP? or DIAL? will be displayed next on the LCD panel.

2 Keep pressing the NO button to traverse through the menu items until PROTOCOL? is displayed.

3 Press the YES button.

The sub-menu CHOICE? will be displayed.

4 Press YES and sub-menu item CHOICE1? will be displayed.

5 Press YES and the CHOICE1 item option will be displayed (that is, MNP).

6 Keep pressing the NO button to change the item option to NORMAL.

7 Once NORMAL is displayed, press the YES button.

8 Then, press the NO button to display sub-menu item CHOICE 2?

9 Press the YES button and the CHOICE 2 item option will be displayed (if not displayed already).

10 Then press the YES button.

At this point, CHOICE 2? will be displayed.

11 Keep pressing the NO button to traverse to the main menu again. When SAVE? is displayed, press the YES button.

The modem will return to the main menu display showing the status of the connection.

12 Via the MMI, perform a switch-link or disable the link to drop the existing SMDI connection.

Once the link is back to the InService state, the UDS modem should establish a connection without MNP. That is, the UDS modem display should show ONLINE. If the display shows ONLINE-MNP, then the settings are incorrect.

General Datacom modem setup

The switch settings for the GDC 224+ C are shown below. This modem is only supported at 2400 baud.

S1: 1 - OFF (-9.0/-12)
2 - OFF (AT ENA)
3 - OFF (SQ ABT)
4 - ON (ORG/ANS)

S2 1 - ON (SW/SFT)
2 - OFF (ASYN/SYN)
3 - OFF (CLK/RX)
4 - OFF (INT/EXT)
5 - OFF (DSR ON)
6 - OFF (DTR RL)
7 - ON (SN/PL)
8 - OFF (CNST/CNTR)

Verify that all the buttons on the front panel are not activated.

Once the switch settings are set, use the AT commands to program the required settings. A terminal is needed in order to enter the parameters. First load the factory defaults:

AT&F <Return>

AT&L3 <Return>

The preceding two commands might be the only ones required to set the parameters. Verify that the current parameters are correct by typing the following: **AT$** to print the command help menu, **AT&S** for the extended help menu (both of which will display the current parameter settings), and **ATS$** for the register summary. If there are any discrepancies, use the AT commands to set the parameters and ATSx for the registers. The help menu follows.

AT$ - GDC DATACOMM 224+ MASTER HELP MENU

Actual Actual

BAUD0=300, 2=1200, 3=2400 <=3 A ANSWER INCOMING CALL
A/ REPEAT PREVIOUS COMMAND BN 1=BELL
212A 0=CCITT V.22 <=1
CN CARRIER 0=OFF, 1-REAL DN DIAL: 0>9 NUMBERS
EN ECHO 0=OFF, 1=ON <=1 P=PULSE DIAL
HN 0=HANGUP, 1,2=ONLINE R=CALL AN ORIGINATE MODEM
IN 0=PRODUCT CODE, 1=CHECKSUM ,=PAUSE
FOR SREG8 TIME
2=COMPARE CHECKSUMS W=PAUS
E FOR SREG7 TIME
JN 0=ROM CHKSUM, 1=CAL CHKSUM @=PAUS
E FOR SREG6 TIME
N N"string" SECURITY <=DISABLE !=INITIAT
E A FLASH
N1 REENABLE PASSWORD S=STORED NUMBER
O 0=ON-LINE, 1=2400 RETRAIN P PULSE
DIAL <=ENABLED
QN QUIET MODE 0=OFF, 1=ON <=0 R REVERSE
MODE (ANS&ORG)
SN? READ S-REGISTER N T TONE DIAL (DTMF) <=DISABL
ED)
SN= SET CONTENTS OF S-REGISTER N VN
VERBOSE 0=OFF, 1=ON <=1
XN CODES 0=BASIC, 1>4=EXTENDED <=4 YN
LS DISCONNECT 0=OFF, 1=ON <=1
Z RECALL SETTINGS/DO SELF TEST &$
EXTENDED COMMAND HELP MENU
S$ S-REGISTER HELP MENU

AT&$ - GDC DATACOMM 224+ Extended command help menu

Actual Actual

&Cn DCD 0=Forced on, 1=Real <=0 &Dn DTR
0=ignr on>off: 1=cmd md <=0
&F Load factory configuration 2=hang-up, 3=reset
&L0,2 Switch Network <=Disabled &Mn Mode
0=Asyn, 1=Async/Sync <=0
&L1,3 Leased Line <=Enabled
2=Sy/Dtr Dial, 3=Sy;/Man DL
0=-9sw/0pl 1=-2sw/-12pl <=1 &m4 isynch(&m
1 forced) <=disabled
&Pn Pulse dial 0=U.S.>, 1=U>K <=0 &Rn Cts
0=Trail RTS 1=ON w/o RTS <=1
&Sn DSR 0=FCD, 1=Pseudo-Real <=0 &W write
configuration

&S2 DSR trail dcd (&s1 fcd) <=Disabled &Xn Clock: 0=Int, 1=Dte, 2=Rd tx <=0
&Tn Test mode 0=Terminate Test &Tn1=Analoop Test <=Disabled
3=Digiloop Test <=Disabled 4=Reception Of rdl <=Enabled
5=Inhibit RDL test <=Disabled 6=Do RDL test <=Disabled
Do RDl selftest <=Disabled 8=Do Analoop selftest <=Disabled
RDL from remote <=Disabled &Z Store telephone number

ATS$ - GDC DATACOMM 244+ S-REgister Summary

S0=001 Rings to answer S1=000 Rings detected
S2=043 Escape code character S3=013 Carriage RET character
S4=010 Line Feed character S5=008 Backspace character
S6=002 Wait before Dial (sec) S7=030 Wait for carrier (sec)
S8=002 Dial (,) pause time (sec) S9=006 carrier det. Response (.1 sec)
S10=003 No Carr/Hangup (.1 sec) S12=050 ESC code guard time (1/50 sec)
S14=042 Bit mapped options S16=000 Bit mapped test modes
S18=000 Test timer (sec) S21=132 Bit mapped options
S22=070 Bit mapped options S23=023 Bit mapped options
S25=005 Delay to DTR (sec) S26=000 Rts to Cts delay
S27=068 Bit mapped options S30=000 Bit mapped options
S46=000 Char ABT options S47=000 Dumb/lockout options
S48=004 Bit mapped options S49=004 Bit mapped options
S50=000 Bit mapped options S51=000 Bit mapped options

Case Rixon modem setup

The required switch settings for the Case Rixon DCM4222 modem follow. This modem is only supported at 2400 baud.

S1: Switches 4, 7, and 8 are set to ON, the rest are set to OFF
S2: Switch 9 is set to ON, the rest are set to OFF
S3: Switches 1, 2, and 9 are set to ON, the rest are set to OFF

Make sure none of the front panel buttons are (pressed) ON. A terminal needs to be hooked up to set the parameters.

First set the factory defaults by entering the following commands:

AT&F <Return>

AT&L1 <Return>

ATS0=1 <Return>

Display the current parameter settings and verify that they are as follows:

Modem speed	*2400*	*AT*	*Leased Line*	*ON*	*AT&L1*
Serial speed	*2400*	*AT*	*Syn mode*	*O*	*AT&M0*
Parity	*8N*	*AT*	*Pulse ration*	*US*	*AT&P0*
Max blk size	*256*	*AT\A3*	*CTS/RTS*	*ON*	*AT&R0*
Auto-Rel Buff	*0*	*AT\CO*	*RDL Enable*	*OFF*	*AT&T5*
Modem Flow	*OFF*	*AT\G0*	*Compression*	*ON*	*AT%C1*
Async cts ctrl	*0*	*AT\H0*	*Auto Ans*	*ON*	*ATS0=1*
BPS Adjust	*ON*	*AT\J1*	*Escape Code*	*043*	*ATS2=43*
Break Type	*5*	*AT\K5*	*Pause Time*	*002*	*ATS8=2*
Operating Mode	*DIR*	*AT\N1*	*Bell/CCITT*	*BELL*	*ATB1*
Serial Flow	*OFF*	*AT\Q0*	*Cmd Echo*	*ON*	*ATE1*
Ring Ind	*1*	*AT\R1*	*Speaker Ctrl*	*1*	*ATM1*
Inact Timer	*00*	*AT\T0*	*Dial*	*Tone*	*ATT*
Flow Ctrl	*2*	*AT\X0*	*Result Code*	*ON*	*AQX0*
Serial CO Ctrl	*1*	*AT&C1*	*Dial Mode*	*4*	*ATX4*
DTR Ctrl	*3*	*AT&D2*	*Speed Disc*	*OFF*	*ATY0*
Guard Tone	*0*	*AT&G0*	*Result Form*	*Long*	*ATV1\V0*
Last number Dialed:					

Appendix B: Restore

The purpose of this appendix is to provide some background information about the disk and tape devices used in Meridian Mail MSM systems. The administrator should be trained in Meridian Mail MSM system support and operation before attempting a restore and voice volume recovery on the system.

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 perform a system backup on a regular basis.

Meridian Mail MSM backup devices for non-shadowed systems

Meridian Mail MSM 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 onto another Meridian Mail MSM system if necessary.

Meridian Mail MSM backup

Meridian Mail MSM systems have two (or four) disk drives per node. On these systems, all data is written to both (or pairs of) disks. In the event that one disk fails, the system automatically writes data to and reads 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 failures (MTBF) of the disk drives used in Meridian Mail MSM is 17 years for the 3-1/2 inch drives and 11 years for the 5-1/4 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 "medium error" which results in an unrecoverable read error and loss of data. Medium errors are caused by defects or scratches in the coating on the disk platters. When such defects occur, Meridian Mail MSM system operation is likely to become unreliable unless repair action is taken.

When a medium error occurs, 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 seriously affected.

Related system event and error reports (SEERs) may also be generated as higher-level software components report that they encountered a disk error. These 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

System reliability is impaired by a defective disk. When a disk generates errors, it should be reformatted or replaced with a new disk. The data on the new or reformatted disk should be restored from the most recent backup.

Disk drive reformatting and restore

A disk drive which generates medium errors can often be repaired by physically reformatting it. As part of the reformatting operation (which takes 45 minutes), each block on the disk is checked. The system substitutes a good block for any defective ones by drawing on a pool of spare blocks. This does not reduce the capacity of the disk in any way since spare blocks have already been set aside. All data is erased from the disk and a restore must be done from the most recent backup.

The utility used to format a disk is called SCSI_UTIL or SCSI_PKG.

Electronics replacement

If the drive failure is not in the medium or read/write head assemblies, it is sometimes possible to repair a drive without loss of data by changing the electronics on the disk drive subsystem. This technique allows recovering data even though a backup is not available. Contact Nortel for details.

Sector reallocation

It is possible to replace a bad disk sector by reallocating a good one from the pool of spare sectors without having to reformat the whole disk. The data from the bad sector will be lost, but the remaining data on the disk is preserved. The disk capacity is not reduced since spare sectors have already been set aside. If critical data has been lost, a restore-from-backup procedure must be done. However, if the data lost is not critical (for example, a voice block in a voice message, approximately 3.4 seconds of voice), it may be possible to avoid having to do a restore.

If sector reallocation is necessary, contact your Nortel support organization.

A disk drive with many bad sectors should be replaced since the number of spare sectors is limited.

Tape drive

Meridian Mail MSM systems use industry-standard 1/4-inch tape 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 to 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 voice 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 eight 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.

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. Voice mail software automatically retensions tapes before writing or reading them to increase tape reliability. The retensioning takes about 2 minutes for a 137.16 m (450 ft) tape and about 5 minutes for a 304.80 m (1000 ft) tape.

Tape drive formats

MM10 systems that are newly installed will use the Tandberg TDC 4220 tape drive. The Tandberg can write up to 60Mbyte on a DC600 (QIC-120 format), 155 Mbyte on a DC6150 (QIC-150 format), 250 Mbyte on a DC6250 (QIC-150 format), 525 Mbyte on a DC 6525 (QIC-525 format), 1 Gbyte on a DC9100 (QIC-1000 format), 2 Gbyte on a Magnus 2.0 (QIC-2 Gbyte format), and 2.5 Gbyte on a Magnus 2.5 (also called a DC9200XL) (QIC-2 Gbyte format). The Tandberg drive is read only on QIC-24 format tapes.

The Tandberg drive is "hot–pluggable" on MSM systems. An MSM partial backup which would take, on average, five tapes and 3.3 hours using a Viper drive will take one tape and 1.3 hours with a Tandberg drive.

The more recent Meridian Mail MSM systems use a tape drive called Viper, manufactured by Archive Corporation. It can write up to 120 Mbyte on 182.88 m (600 ft) DC600A tapes (in 15-track QIC-120 format), up to 150 Mbyte on DC6150 tapes (in 18-track QIC-150 format), and up to 250 Mbyte on DC6250 tapes (in 18-track format).

The Viper drive can read the standard 137.16 m (450 ft) DC300XL/P tapes (9-track QIC-24 format) but cannot write them. It can also read 182.88 m (600 ft) DC600A tapes recorded in QIC-24 format but does not write these tapes in this format.

> ***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 data written to bad blocks will have to be rewritten to good blocks.

Volume and backup information

Disk volume summary

The Meridian Mail MSM system consists of a number of nodes, with two disks per node. Each 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 1 k block size. If it ends in V, it is a *voice volume* having an 8 k block size. The last two digits of a volume name are the node number on which it is stored, except for VS1 and VS2 which are both stored on node 1.

Boot tracks

The operating system of all Meridian Mail MSM systems is stored in the first 1016 k of the disk on node 1. These are not disk volumes in the normal sense. The boot tracks are rewritten as part of the MSP 1 disk initialization procedure.

VS1T

This volume is on node 1 and has a 1 k block size. It is the *software volume* which stores

- user directory information
- system distribution lists
- organization profile
- operational measurements
- languages for Meridian Mail MSM
- other system information.

This volume may also include the voice menus.

VS1T is also the *system volume* which stores

- user directory information
- system distribution lists
- organization profile
- operational measurements
- other system information.

VS1V

This is a voice volume associated with VS1T. It stores the user personal verifications and may also store voice menus and announcements. On single-language systems converted from SP4, VS1V will store the voice portion of languages. VS1V is on node 1 and has an 8 k block size.

VS2T

This is on node 1. It stores languages one and two for all systems. It has a 1 k block size.

VS2V

This is the voice volume associated with VS2T. It stores the voice portion of languages one and two.

VS2xxT

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.

VS2xxV

This is the voice part of VS2xxT holding user voice messages and greetings on node 2. It also has a copy of the voice prompts.

VSxxxB

Volumes ending in the letter B are temporary volumes created during an on-line backup of the VS*xx* volume. It has a 1 k block size and is deleted after it has been copied to tape.

VS901T

This exists on node 1. It stores a copy of all the user profiles on user volumes VS203a and VS210. This includes personal distribution lists. The profiles are copied to VS901 by a partial backup. In the case of a disk-to-tape backup, VS901T is then copied to tape.

VS902T

This is present on node 2 but only on a 2-node system. It holds copies of all user profiles on volume VS2. The profiles are copied to VS902 by a partial backup. In the case of a disk-to-tape backup, VS902T and VS902V are then copied to tape.

Types of backup

Full backup

A full backup copies all system and user data. 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.

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

- user directory
- user profiles
- personal distribution lists
- system distribution lists
- personal verifications
- user passwords

- operational measurements
- network configuration
- other system configuration information

Note: If the voice services cabinet has been moved to VS203, *it will not be backed up* by a partial backup.

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 messages.

Online backup

Normally an administrator will do an online backup while the system is still providing service. The online 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.

Online 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. Online backups can be scheduled, or they can be executed immediately.

Offline backup

An offline backup is a backup which is done by Nortel personnel.

Appendix C: Remote access

Remote access procedures

Procedure 15-1
Remote access installation

1 Set up the remote access cabling as in Table 15-1.

Table 15-1
Remote Access Installation

I/O panel connector	I/O panel PIN number	Signal name	Binder	Color	Port description, right shelves	
					Relays energized	**Relays un-energized**
P1A	3 13	MR02 MT02	Blue	G2W G1W	Remote Access Modem Port (MSP 1) Shelf 26 Right	Remote Access Modem Port (MSP 1) Shelf 26 Right
P1B	1 11	MR12 MT12	Blue	BL2BK BL1BK	Remote Access Modem Port (MSP 2) Shelf 26 Right	Remote Access Modem Port (MSP 2) Shelf 26 Right

I/O panel connector	I/O panel PIN number	Signal name	Binder	Color	Port description, left shelves	
					Relays energized	**Relays un-energized**
					Shelf 26 Left	Shelf 39 Left
P1A	3 13	MR02 MT02	Blue	G2W G1W	SPN 1 (Port 2) Modem Port	SPN 5 (Port 2) Modem Port
P1B	1 11	MR12 MT12	Blue	BL2BK BL1BK	SPN 2 (Port 2) Modem Port	SPN 6 (Port 2) Modem Port
P1B	8 18	MR22 MT22	Orange	O2W O1W	SPN 3 (Port 2) Modem Port	SPN 7 (Port 2) Modem Port
P10	6 16	MR42 MT42	N/A	R(BL) BL(R)	SPN 4 (Port 2) Modem Port	SPN 8 (Port 2) Modem Port

Overview

Procedure 15-2
Remote terminal and modem installation

1. Place the VT220-compatible terminal and modem in a suitable location for remote administration.
2. Plug the power cord for the remote terminal into an AC receptacle.
3. Plug one end of the 3.41m (10 ft), 9-pin RS-232 modem cable (A0355244) into the modem's RS-232 connector marked RS-232/EIA (DTE on the UDS modem).
4. Attach the other end of the cable to port A of the remote terminal and tighten the retaining screws.

   For the Ven-Tel modem, plug one end of the RJ-11c jacked cable (RJ-11 for UDS modem) into the modem's telephone company receptacle and the other end into the telephone outlet installed for the remote site.
5. Plug the modem's power cord into an AC receptacle.

Remote access enable/disable

Once the remote access has been enabled from the local console, the remote access user simply calls in and hits the break key to gain control of the main console screen. (The main console screen contains the MMI virtual window, the CONSOLE virtual window, and the Cobra selection window.) After gaining control, hit <Return>. If <Return> does not return with any prompt, then hit <Ctrl-R> to redraw the current screen.

To enable remote access from virtual windows, use the CobraVT selection window. This will turn the modem on and set the modem to Auto Answer.

Procedure 15-3
Enabling/disabling remote access

1. To bring up the CobraVT selection window, type <Ctrl> followed by <w>.

   Note: For help using CobraVT, type a question mark (?). A help screen will appear.

2. Type **M** (case does not matter).

   To disable the remote access, repeat the above steps as the enabling process is a toggle.
3. The DCD status of the modem port (which indicates whether a remote connection is present or not) is not available to the user.

Remote access status

Procedure 15-4
Remote access status

1. Typing <Ctrl > followed by <w> will bring up the Cobra selection window that shows the current status of the remote access.
2. If-M appears in the top right hand corner, remote access is enabled.

   A CobraVT selection window with remote access enabled looks like the following:

CobraVT	1/6 Loc	Stat	-M
CONSOLE	1	R	
MMI	5	R	

The data carrier detect (DCD) status of the modem port is not available to the user.

Gaining control

To gain control of the main console port, hit the <Break> key (in Crosstalk or Kermit programs, the <Break> key may be mapped to the <Alt-Break> or <Ctrl-Break> keys), causing the main console port to be routed to that port. This works for either remote or on-site users. Due to the line characteristics, it may be necessary for the operator at the remote site to hold the <Break> key until gaining control of the console.

Security

Security is the responsibility of the on-site administrator ensuring that the modem is on only when necessary. The Cobra selection window can get the remote access status at any time.

Booting up

When the operating system is booting, it checks whether the modem is connected. If the modem carrier is detected, the system routes the main console port to the modem port. This allows the remote user to boot the system without intervention from the on-site user.

Errors

Modem or phone line malfunction

Upon detection of loss of carrier, modem access will be disabled, and the console will be set to the local administrator.

Redundancy switchover

Within a redundant MSP environment, if a switchover occurs, the console will be set to the local administrator.

If a switchover occurs during a remote session on the active MSP, the remote session will not switch over to the new active MSP. The remote user will remain connected to what is now the backup MSP. To regain remote access to the now active MSP, the local user must enable the remote access on the newly active MSP, and the remote user must dial in to the line going to the active MSP.

Internal modem configuration

Autoconfiguration

The internal modem is automatically configured as soon as the Meridian Mail system is turned on. The parameters are as follows:

Table 15-2
Internal modem, default parameter settings

Parameter	Default Setting
Datatype	Terminal
Parity	None
Start Bit	1
Stop Bit	0
Terminal Type	VT220
Duplex	Yes
Global Register	Yes
Number of Windows	1
Baud Rate	2400
Window Width	80
Window Height	24
Name	(variable)
TermCap	sp5_vt220

List of terms

68K card

68010 processor card. This is a card with a 12 Mhz 68010 processor, SCSI interface, and serial port, and the capability of addressing either 6 or 8 Mbyte of accessible RAM.

ACCESS

ACCESS is a software package that allows customers to develop and maintain their own telephone-based voice applications. The most common application is an Interactive Voice Response (IVR) system, which provides a caller with information or accepts a command from a caller.

AMIS

See Audio Messaging Interchange Specification (AMIS).

Analog transmission

Transmission of a continuously variable signal as opposed to a discretely variable signal.

Audio Messaging Interchange Specification (AMIS)

An industry standard specification that allows users of voice messaging products residing on systems of differing architectures to exchange voice messages.

Card

Card is the term for a plug-in printed circuit pack or board.

Carrier

A term equivalent to central office (CO).

Central office (CO)

A switching office for terminating subscriber lines and establishing connections to and from other switching offices. It is synonymous with class 5 office, end office and local office. See *carrier*.

CO

See central office (CO).

CPE

See Customer premises equipment (CPE).

Cumulative baud rate

The total baud rate for the Access and AdminPlus features per card or node. The cumulative baud rate can vary from 9.6 kbps for single node, single link, to 172.8 kbps for a 5 node, 8-link system.

Customer premises equipment (CPE)

Refers to equipment that is located on the customer's premises.

Dial pulse (DP)

Method of transmitting signaling information from a telephone set or a trunk circuit. Dial pulses are generated by alternately opening and closing a contact in the telephone through which the DC current flows.

Digital

Pertaining to digits or to the representation of data or physical quantities by digits. It contrasts with analog.

Digital multiplex system (DMS)

A central office switching system in which all external signals are converted to digital data and stored in assigned time slots. Switching is performed by reassigning the original time slots.

Directory number (DN)

The full complement of digits required to designate a subscriber's station within one NPA—usually a three-digit central office code followed by a four-digit station number.

DMS

See Digital multiplex system (DMS).

DMS SuperNode

A central control complex for the SL-100. The two major components of DMS SuperNode are the computing module and the message switch.

DN

See directory number (DN).

DP

See dial pulse (DP).

DTMF dialing

See dual-tone multifrequency (DTMF) dialing.

Dual-tone multifrequency (DTMF) dialing

A service-related telephony feature that provides for the generation of address information from a telephone set in the form of DTMF signals by pressing non-locking buttons. It contrasts with dial pulse.

EIU

See Ethernet interface unit (EIU).

Ethernet Interface Unit (EIU)

The EIU provides an interface to the DMS Bus and the Ethernet LAN to allow connectivity between the computing module and the SPMs. Data that is passed between the computing module and SPM nodes travels on the Ethernet LAN.

Ethernet LAN

The Ethernet LAN allows communication between the computing module, SPMs and the ISN OAM&P positions.

Frame supervisory panel (FSP)

Accepts the frame battery feed and ground return from the power distribution center and distributes the battery feed to the shelves of the frame or bay in which it is grounded. The FSP also contains alarm circuits.

FSP

See frame supervisory panel (FSP).

Full service multimedia port

Full service multimedia ports are required to support the transmit and receive functions required by the fax feature. This port configuration provides more digital signal processing power. All Voice-Only features can also be supported on multimedia ports.

Full service voice port

A full service voice port may be used for voice menus and ACCESS applications such as interactive voice response (IVR). It also supports all other Meridian Mail voice-related features including Express Messaging, Voice Administration, AMIS, Outcalling, Hospitality, Voice Forms, and Networking.

I/O

See input/output (I/O).

Input/output (I/O)

Refers to a device or medium that is used to achieve a bidirectional exchange of data.

Intelligent Service Node (ISN)

An SL-100 platform offering advanced services to central office subscribers.

ISN

See Intelligent Service Node (ISN).

LAN interface node (LIFN)

The LIFN provides the Ethernet LAN interface for the SPM in a DMS VoiceMail system.

LIFN

See LAN interface node (LIFN).

Link interface unit 7 (LIU7)

The LIU7 is a peripheral module that processes messages entering and leaving a link peripheral processor (LPP) through an individual signaling data link.

Link peripherial processor (LPP)

The LPP is an equipment frame that contains peripheral modules, such as LIU7s, EIUs, and an LMS.

LIU7

See link interface unit 7 (LIU7).

LMS

See local message switch.

Local message switch

The LMS controls messaging between LIU7s, EIUs, and other application processors in a link peripheral processor (LPP). The LMS also controls messaging between the LPP and the DMS Bus.

Log system

Used by the Meridian Mail software to record (that is, log) the occurrence of all significant events (for example, equipment failure), and then report the events to operating company personnel.

LPP

See link peripheral processor (LPP).

Maintenance and Administrative Position (MAP)

The MAP provides a man-machine interface between operating company personnel and the SL-100 switch. It consists of a visual display unit and keyboard, a voice communications module, test facilities, and MAP furniture.

MAP

See Maintenance and Administrative Position (MAP).

MDC

See Meridian Digital Centrex (MDC).

Meridian Digital Centrex (MDC)

A special DMS business services package that utilizes the data-handling capabilities of DMS-100 family offices to provide a centralized telephone exchange service. It was formerly known as the integrated business network (IBN).

Meridian Mail (MMail)

A voice processing system designed for use with Nortel's Meridian 1 Communication Systems.

Meridian Mail User Interface (MMUI)

Nortel's proprietary voice messaging user interface.

Message Services Module (MSM)

A voice processing system designed to provide call-answering and voice messaging services to private business and institutional customers. MSM subscribers are assigned voice mailboxes which they access using private passwords. Recorded prompts guide users whenever necessary and also assist callers to leave messages. An MSM system consists of at least one Message Services Module and Meridian Mail voice processing software.

Message Waiting Indicator (MWI)

A visible or audible indicator (that is, lamp or stutter dial tone) at the subscriber's set that informs the subscriber of a message waiting in his or her voice mailbox.

MMail

See Meridian Mail (MMail).

MMUI

See Meridian Mail User Interface (MMUI).

MPC

See multiprotocol controller (MPC).

MSM

See Message Services Module (MSM).

MSP

See multiserver processor (MSP).

Multiprotocol controller (MPC)

The MPC is a general purpose data communications card that allows communication between a SL-100 family switch and an external computer. The MPC card resides on the IOC shelf. The MPC supports asynchronous communication between SMDI datalinks and the ISN.

Multiserver processor (MSP)

A node running multiserver programs in a multinode environment on the service peripheral module.

MWI

See Message Waiting Indicator (MWI).

Node

The terminating point of a link. In DMS, it can mean a unit of intelligence within a system, including the central processing unit, network module, and peripheral modules.

OM

See operational measurements (OM).

Operational measurements (OM)

The hardware and software resources of the SL-100 Family switches that control the collection and display of measurements taken on an operating system. OMs organize the measurement data and manage its transfer to displays and records on which maintenance, traffic, accounting, and provisioning decisions are based.

PBX

See private branch exchange (PBX).

Private branch exchange (PBX)

A private telephone exchange, either automatic or attendant-operated, serving extensions in an organization and providing access to the public network.

SBC

See single board computer (SBC).

Service peripheral module ((SPM)

A voice processing server used to provide voice messaging and related services for residential and business subscribers of SL-100 or other central office switches

Signal processing node (SPN)

A node on the service peripheral module that is used for signal processing.

Simplified Message Desk Interface (SMDI)

An interface feature that enables an SL-100 switch to communicate with a message desk. It provides the directory number of the called station, the calling station number (if available), and the reason for the call being forwarded to a message desk. In addition, it provides the message desk with the ability to activate or deactivate the message waiting indication for any station able to forward calls to the desk.

Single board computer (SBC)

A type of computer used on Meridian Mail platforms.

SMDI

See Simplified Message Desk Interface (SMDI).

Speed buffering

Buffering within a modem to match line speed with host/terminal speed.

SPM

See service peripheral module (SPM).

SPN

See signal processing node (SPN).

T1

The standard 24-channel, 1.544MB/s pulse code modulation system used in North America. This digital carrier carries a signal whose designation is DS1.

T-link

An adaptation protocol designed to transfer synchronous or asynchronous data over a digital circuit at a digital trunk equipment data rate of up to 64 kbps.

Telephony interface node (TIFN)

A node that is used to interface between incoming telephony lines and place the communications on the MMail bus of the service peripheral module.

TIFN

See telephony interface node (TIFN).

UAT

See User Administration Terminal (UAT).

User administration terminal (UAT)

A secondary MSM administration terminal that is used to perform user administrative functions but not system administrative functions.

VLS

See Voiceless Server (VLS).

VMUIF

See Voice Messaging User Interface Forum (VMUIF).

VP12A

See voice processor-12A card (VP12A).

Voice Messaging User Interface Forum (VMUIF)

The call answering interface that has been defined by the Voice Messaging User Interface Forum.

Voice processor-12A card (VP12A)

A 12-port card that is used in the Message Service Module for voice processing.

Voiceless Server (VLS)

An Access task available in MM10 release providing processing for many APIs that do not require a voice port.

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Meridian Mail

Message Services Module

System Installation and Modification Guide

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