Meridian IVR

Installation Guide

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This document is the first standard issue for Meridian IVR release 2.0/I.

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About this guide

Who should use this manual

This Meridian IVR Installation Guide details the steps and procedures required to successfully install the hardware and software for your Meridian IVR system.

This document is intended for those persons who are responsible for installing and maintaining the Meridian IVR system.

Although intensive technical skills are not required to install the Meridian IVR system, this manual assumes that the reader is familiar with Meridian Mail and has received Meridian IVR installation and maintenance training.

The term “Meridian 1” is used throughout this document, and refers to Meridian 1 and “Meridian 1-ready” systems, such as Meridian SL-1 style cabinets that have been upgraded.

How to use this manual

This manual contains the following chapters:

Chapter 1: Installation overview

Provides an overview of the Meridian IVR equipment.

Chapter 2: Installation

Explains how to unpack and inspect your Meridian IVR system and describes the procedures to install Meridian IVR.

Chapter 3: Configuring Meridian IVR for testing

Describes the procedures to configure a Meridian IVR system to test the installation properly.

Chapter 4: Running the test application

Describes the operation of the test application.

Chapter 5: Configuring Meridian IVR for customer applications

Provides examples of channel configuration types to enable you to configure the customer's application.

Appendix A: Meridian IVR components

Provides a list of the main Meridian IVR components along with common product and product engineering codes.

Appendix B: Making changes

Provides information about upgrading and converting Meridian IVR.

Appendix C: Cable pin out data

Provides Meridian IVR cable pin out statistics.

Appendix D: Customized screen text

Provides information about changing screen text into other languages.

Appendix E: Meridian Mail platform compatibility

Summarizes the Meridian Mail platforms which can be used with Meridian IVR and the compatible software releases.

Appendix F: ACCESS tool kit diagnostics

Describes the Meridian ACCESS-related utilities. (Meridian IVR is based on ACCESS.)

Glossary

Describes the terms and acronyms used throughout this guide.

Additional Meridian IVR guides

You may find the following guides useful while reading this manual.

Manual	NTP Number
Meridian IVR Product Guide	555-9001-010
Meridian IVR Planning and Engineering Guide	555-9001-200
Meridian IVR System Administration Guide	555-9001-300
Meridian IVR Getting Started Guide	555-9001-301
Meridian IVR Application Development Guide	555-9001-310
Meridian IVR 3270 Gateway Development Guide	555-9001-312
Meridian IVR SQL Server Guide	555-9001-314
Meridian IVR VT100 Gateway Development Guide	555-9001-316
Meridian IVR 5250 Guide	555-9001-318
Meridian IVR Fax Application Guide	555-9001-350
Meridian IVR Maintenance and Diagnostics Guide	555-9001-500

Chapter 1: Installation overview

All new Meridian IVR systems are shipped as complete units which do not require any software installation procedures; however, if any optional software packages are shipped separately with a new installation, they must be properly installed and the system configured. See " Upgrades, conversions, and expansion" on page 1-2 for more information.

Before installing the IVR system

Before you begin to install the IVR system, it is mandatory that you complete all of the following steps:

1 Read the Meridian 1 System Installation procedures.

2 Install the AC power and ground cables.

3 Properly configure the Meridian 1 switch for IVR.

4 Install and configure Meridian Mail for IVR.

5 Connect Meridian Mail to the PBX interface cabling.

6 Test and verify the Meridian Mail system.

Specific configuration instructions for the Meridian 1 switch can be found under "Configuring the Meridian 1 switch" on page 3-5.

Specific configuration instructions for the Meridian Mail system can be found under "Configuring Meridian Mail" on page 3-7.

Upgrades, conversions, and expansion

Although your new system comes complete and does not require any software installation procedures, there are three discrete situations which can arise that make software (re)installation necessary:

- moving from Release x.yy of Meridian IVR to Release x.zz
- moving from Release x to Release y
- adding new features to an existing release.

These situations are known as upgrading, conversion and expansion.

Upgrade A Meridian IVR system may need to be upgraded for any or all of the following reasons:

- The SCO operating system needs to be upgraded.
- A Run-Time system needs to be upgraded to a Development system.
- The Meridian IVR system needs to be upgraded to a higher release.

Conversion Applications written on Meridian IVR Release 1.2 can be moved to Meridian IVR Release 2.0/I. User functions moved to the Release 2.0/I platform require porting and recompilation.

Expansion If additional features or options are required by a customer already running a Meridian IVR Release 2.0/I system, a new keycode is issued and used to reinstall the new features onto the customer's system.

Where to go for more information Software reinstallation procedures are provided under "Appendix B: Making changes" on page B-1.

Refer to the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500) for additional information on related topics.

Configuring your system

System configuration consists of setting up the Meridian 1, Meridian Mail, and the Application Processor so that the applications work properly. On a development system, part of the configuration is done using the System Configuration option on the System Administration Interface (SAI) of the Meridian IVR GUI main menu. On a Run-Time system, the process is completed using the System Configuration option in the System Administration menu.

System configuration tasks include:

- identifying and defining the number of system prompts
- identifying and defining node and channel characteristics
- configuring the channels as inbound or outbound and shared or dedicated
- saving configuration changes

Information about planning a customized system configuration is available from the *Meridian IVR Planning and Engineering Guide* (NTP 555-9001-200).

Choosing your language

Meridian IVR allows the use of languages other than English to be used for Meridian IVR processes. This function, called “screen text localization ” can be used to customize all screen text and is provided through the inclusion of screen language files which can be edited to suit individual requirements. This customization is limited to processes which interact directly with the user through the GUI or the text-based interface. See “Appendix D: Customized screen text” on page D-1 for more information on using this feature.

Warranties

It is extremely important that you read and understand the warranties issued with your Meridian IVR equipment.

ATTENTION!

Under no circumstances should you void your warranty for the sake of following any instruction given in this or any other document. Be sure to register your warranties with the appropriate companies where required.

Chapter 2: Installation

The installation process

The installation process must be coordinated with the following personnel:

- the customer network engineer
- a designated customer system administrator
- the distributor responsible for the Meridian ACCESS installation
- any local contractors required for wiring phone lines, power, and data cables to the incoming system

ATTENTION!

These procedures should only be performed by fully qualified, trained personnel.

Tools and equipment

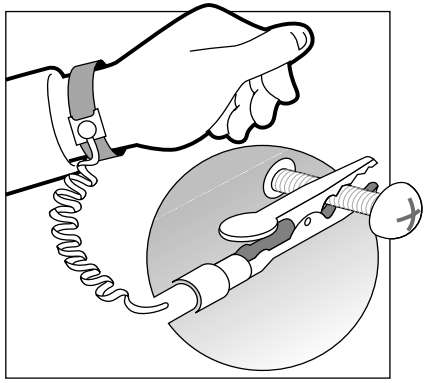
This section describes the required tools and equipment you need to install the Meridian IVR system.

Antistatic wrist strap

Electrostatic discharge (ESD) can seriously damage component parts such as disk drives and add-in boards. We recommend the procedures described in this chapter be performed at an ESD workstation.

If an ESD workstation is not available, you can provide some ESD protection by wearing an antistatic wrist strap. Ground the ESD wrist strap by attaching it to any unpainted surface on your system chassis, as shown in Figure 2-1.

Figure 2-1
Connecting the ESD wrist strap



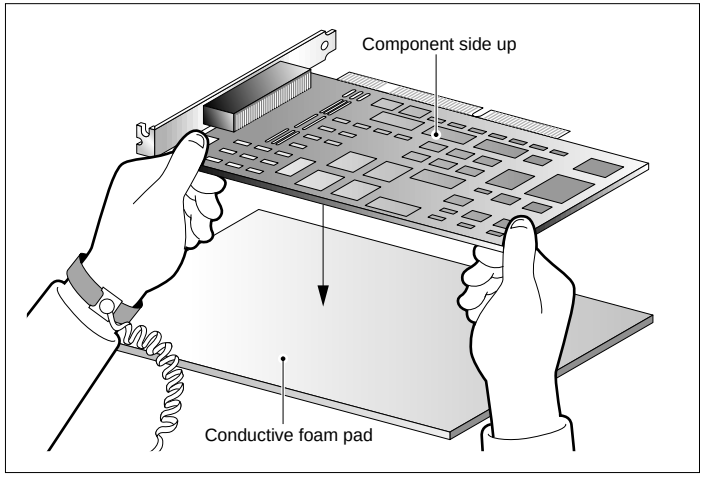
Conductive foam pad

Add-in boards are extremely sensitive to ESD. After removing a board from its protective wrapper or from the system, place it component side up on a conductive foam pad, as shown in Figure 2-2.

Do not place the board on its wrapper.

Do not slide the board over any surface.

Figure 2-2
Using the conductive foam pad

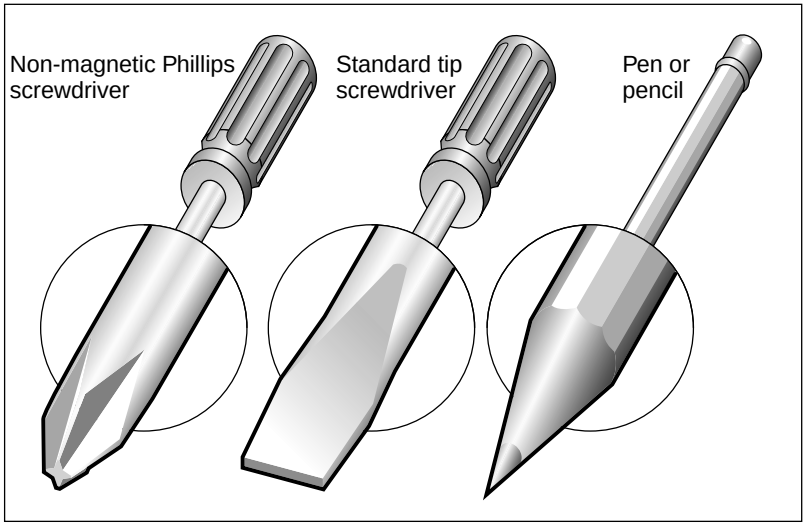


Required tools

You will need the following tools to perform the installation activities described in this chapter:

- Magnetic Phillips screwdriver with a #2 bit
- Standard (slot-head) screwdriver (1/4" – 1/2")
- IC removal tool
- ESD wrist strap
- conductive foam pad
- pen or pencil

Figure 2-3
Required tools



Installation sequence

The following steps are used to install your Meridian IVR system:

1 Select a site.

2 Unpack and set up the application processor.

3 Apply physical security.

4 Visually inspect the internal components.

5 Connect the peripheral devices.

6 Install the key lock security device.

7 Make all the cable connections:

- Meridian IVR cables
- ACCESS link cabling

8 Install the SVGA monitor.

9 Install the HP LaserJet 4M Plus printer (or the dot matrix printer).

10 Install any optional hardware devices.

11 Connect the power cords.

12 Turn on your system.

13 Monitor the power-on self-test (POST).

14 Complete the power up and sanity check procedures.

15 Set time zones and daylight savings.

16 Check the key lock security device.

17 Print the HP LaserJet 4M Plus (or dot matrix) self-test page.

18 Connect Meridian IVR to a host system (optional).

19 Configure the US Robotics modem.

20 Configure network options.

Selecting a site

The site you choose for the Application Processor must meet the following conditions:

- near a grounded, three-pronged power outlet
- clean and dust-free
- well-ventilated and away from heat
- isolated from strong electromagnetic fields and electrical noise produced by electrical devices (such as air conditioners, large fans, large electrical motors, radio and television transmitters, and high-frequency security devices)
- away from sources of vibration or physical shock
- spacious enough to provide at least five inches (13 centimeters) of clearance at the back of the system and three inches (8 centimeters) of clearance on each side of the system.

Unpacking the Application Processor

The Application Processor comes packaged with all cards and internal devices already installed. The monitor, printer, keyboard, mouse, external modem, UPS, and required cabling are packaged separately. When unpacking the Application Processor and peripheral equipment, carefully remove and inspect each component.

Setting up the Application Processor

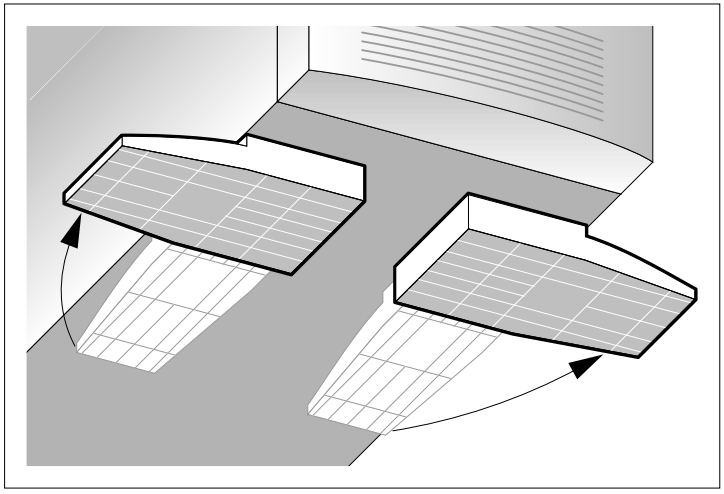
The Application Processor is equipped with four feet on its base. Each foot folds out independently to support the system. After unpacking the Application Processor, rotate the four plastic feet on the bottom of the chassis 90 degrees from their original positions.

CAUTION!

Risk of personal injury

The Application Processor is unstable without the feet properly deployed. Failure to rotate them before placing the Application Processor in the upright position may result in damage to the cabinet or in personal injury.

Figure 2-4
Setting up the Application Processor



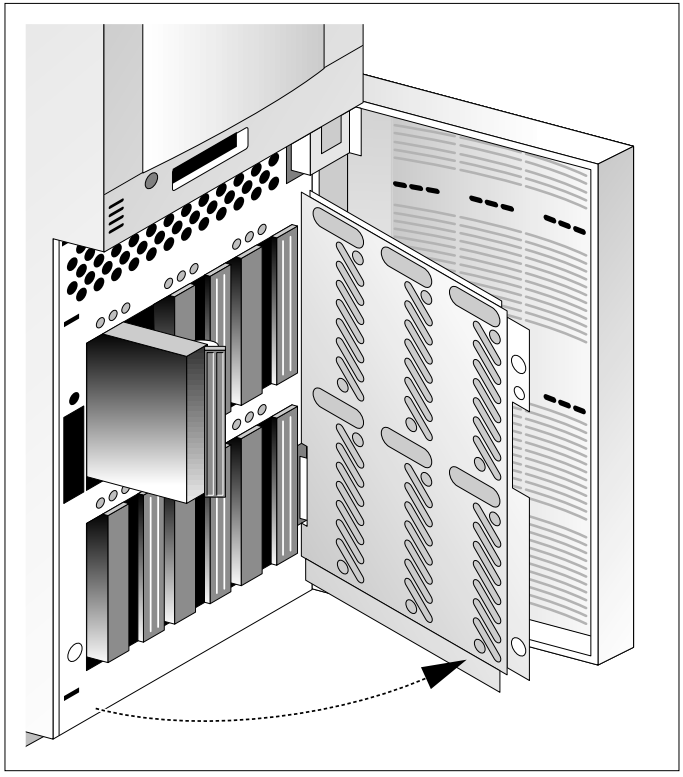
Physical security

The Application Processor has a security lock mounted in the upper front door panel. Two keys are provided in a plastic bag taped to the inside of the door. The doors on the front of the Application Processor are shown in Figure 2-5.

You can secure the Application Processor further using padlocks (not supplied) to

- secure the cabinet bay metal door to the chassis using the slot in the bay cover
- secure the side cover to the chassis using the metal tab protruding through the back of the cover

Figure 2-5
Cabinet bay doors



Visual inspection

Conduct the following visual inspection of the Application Processor:

- Is the I/O panel seated on the system board?
- Are all cables correctly connected and secured?
- Are all add-in boards, modules, and components fully seated in their slots on the system board?
- Are jumper settings on the system board correct?
- Are all jumper and switch settings on add-in boards and peripheral devices correct? See the manufacturer's documentation. Ensure there are no conflicts. For example, two add-in boards sharing the same interrupt.

- Are all add-in boards and peripheral devices installed correctly?
- If the system has a hard disk drive, is it properly formatted, defined, and recognized?
- Is the SCSI backplane configured and terminated correctly?
- Are device drivers properly installed?

Meridian IVR physical configuration

Diagrams of the Meridian IVR system configuration are shown in Figure 2-6 and Figure 2-7. The supported peripheral devices and related cable information are described in this section.

Figure 2-6
Sample Meridian IVR system configuration

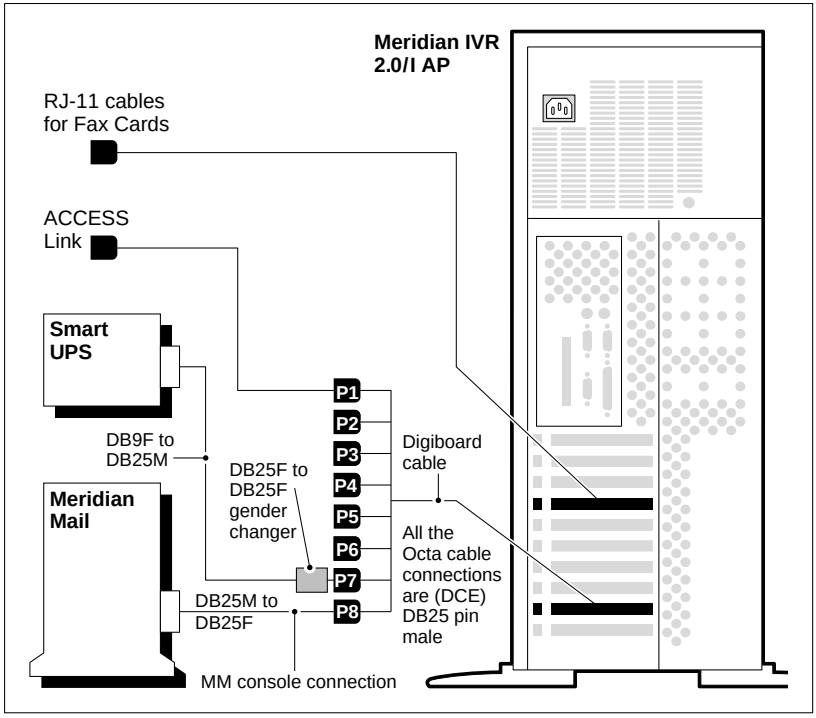
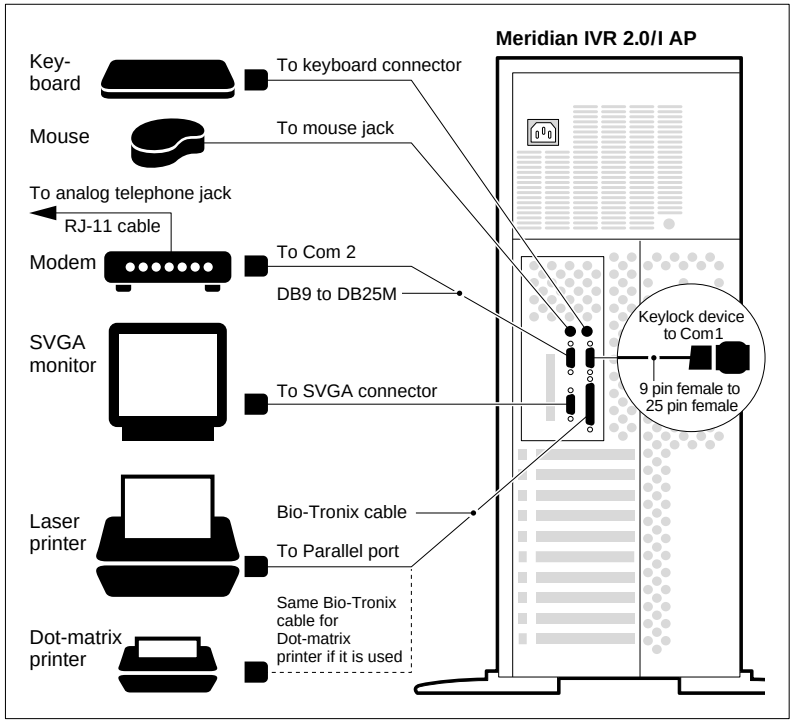
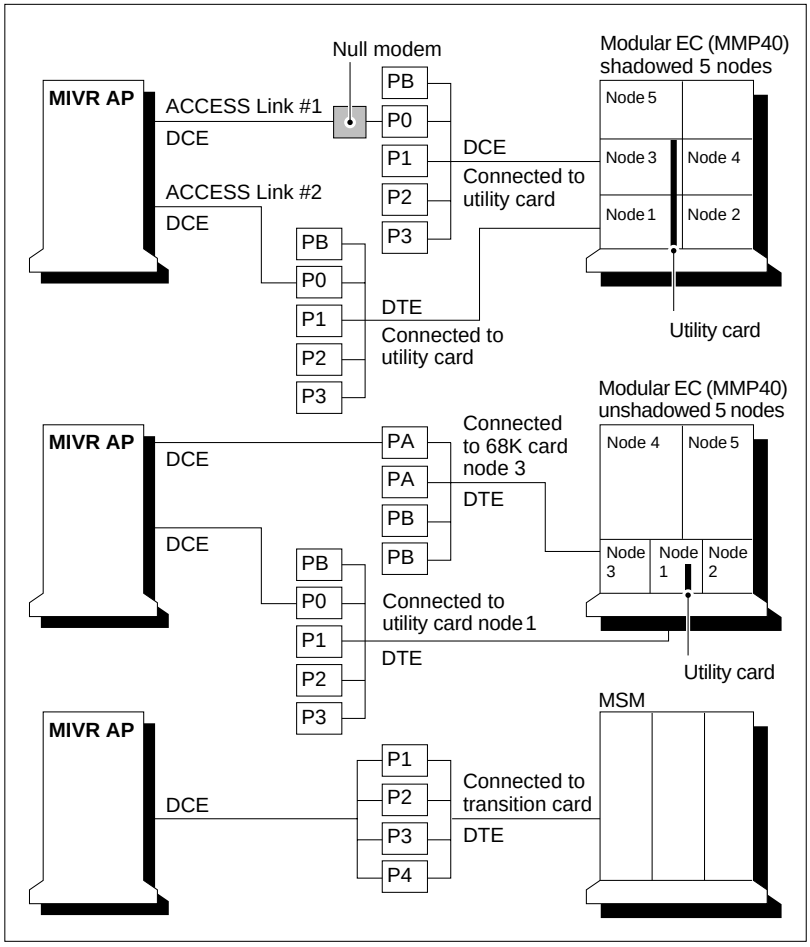


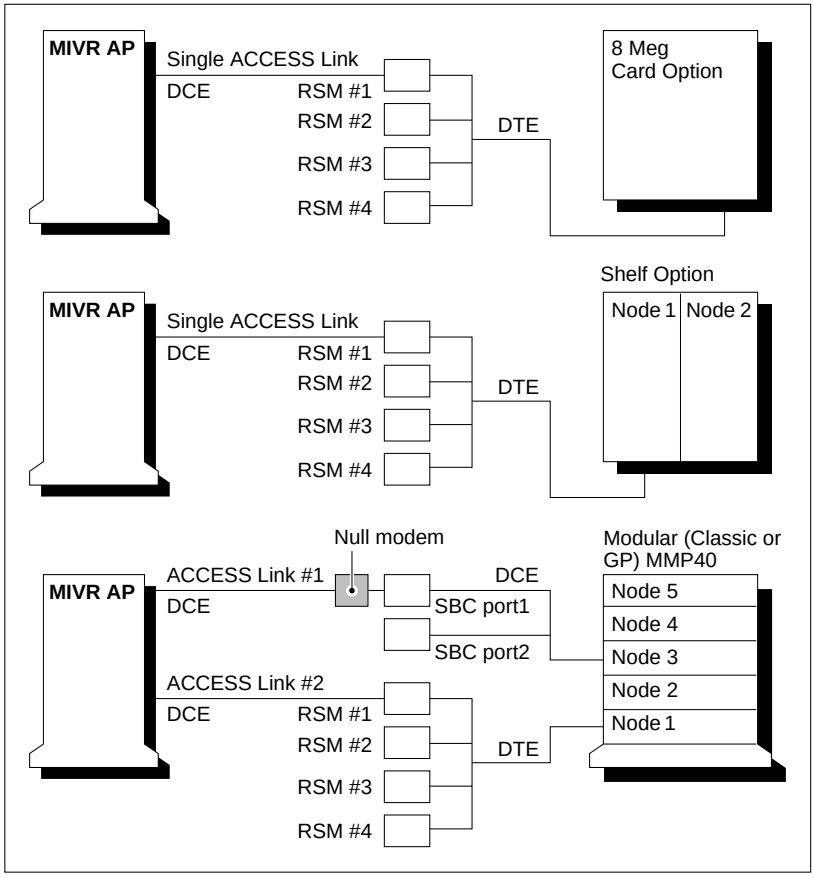
Figure 2-7
Meridian IVR system configuration (peripherals)



The following diagrams show some of the possible Meridian IVR 2.0/I and Meridian Mail configurations.

Figure 2-8
Meridian IVR configurations




MIVR AP
Single ACCESS Link
DCE
RSM #1
RSM #2
RSM #3
RSM #4
DTE
8 Meg
Card Option
MIVR AP
Single ACCESS Link
DCE
RSM #1
RSM #2
RSM #3
RSM #4
DTE
Shelf Option
Node 1
Node 2
Null modem
MIVR AP
ACCESS Link #1
DCE
DCE
SBC port1
SBC port2
ACCESS Link #2
DCE
RSM #1
RSM #2
RSM #3
RSM #4
DTE
Modular (Classic or
GP) MMP40
Node 5
Node 4
Node 3
Node 2
Node 1

Cable connections

Meridian IVR cables

The Meridian IVR Application Processor uses two types of cables:

- Cables inside the Application Processor which are used to connect SCSI devices and the power supply
- External cables which are used to connect the Application Processor to the external peripherals, including the Meridian Mail system and host computers

See the following for cabling information:

- Table 4-1, "Device name and legends," on page 4-2 of the *Meridian IVR Planning and Engineering Guide* (NTP 555-9001-200) provides cable reference information for the Meridian IVR Application Processor.
- Figure 2-7 shows the rear view of the Application Processor.

ACCESS link cabling

For Meridian Mail dataport configuration for the ACCESS link see "Configuring Meridian Mail" on page 3-7.

Note: You will need to know which dataport is configured for the ACCESS link before you can proceed with the connecting cable to determine which connector of the multiport cable to attach to the NTND91AA cable.

On Meridian IVR, the ACCESS link is attached to the Octa cable on the 8-port serial card. See Figure 2-9 for an overview of the cabling setup.

In Meridian Mail, the RS-232 service module (RSM) provides four RS-232 ports and alarm capabilities. When you install the Modular Option system, the Utility Card will be present to serve in this capacity providing enhanced facilities over the RSM.

Procedure 2-1
Connecting the ACCESS link to the Meridian Mail Options platform

1 Connect the single end of the Octa cable to the 78-pin serial card connector on the back of the Application Processor. The 8-port serial card resides in slot 1 (the bottom slot) of the Application Processor. An optional 8-port serial card may reside in slot 2.

2 Connect the first available DB-25 connector at the other end of the multiport serial cable to one end of the NTND91AA cable.

3 Connect the other end of the NTND91AA cable to the appropriate connector of the multiport cable (NT4R20AA/AB).

See Figure 2-10 for details on the cables, connectors, and data ports.

Procedure 2-2
Connecting the ACCESS link to the Modular Option EC platform

1 Connect the single end of the Octa cable to the 78-pin serial card connector on the back of the Application Processor. The 8-port serial card resides in slot 1 (the bottom slot) of the Application Processor. An optional 8-port serial card may reside in slot 2.

2 Connect the first available DB-25 connector at the other end of the multiport serial cable to one end of the NTND91AA cable.

3 Connect the first available DB-25 connector at the other end of the multiport cable to one end of the NTND91AA cable.

4 Connect the other end of the NTND91AA cable to the appropriate connector of the RS-232 fanout cable.

This cable will be either a five-port (NT6P0109) or a four-port (NT6P0110) cable. See Figure 2-9 to Figure 2-11.

Figure 2-9
ACCESS link cabling

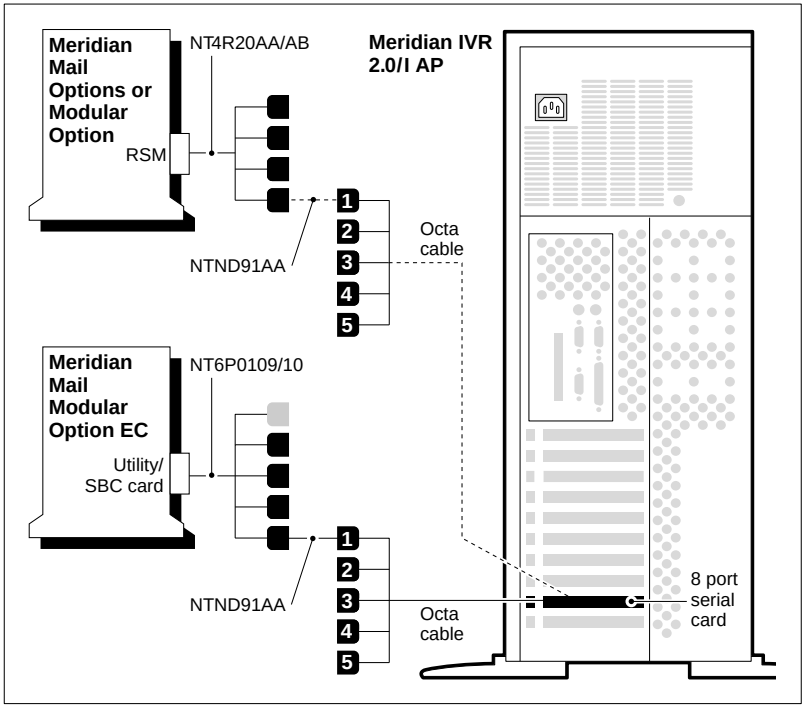


Figure 2-10
Modular Option EC cabling overview for RS-232 multi-port cables

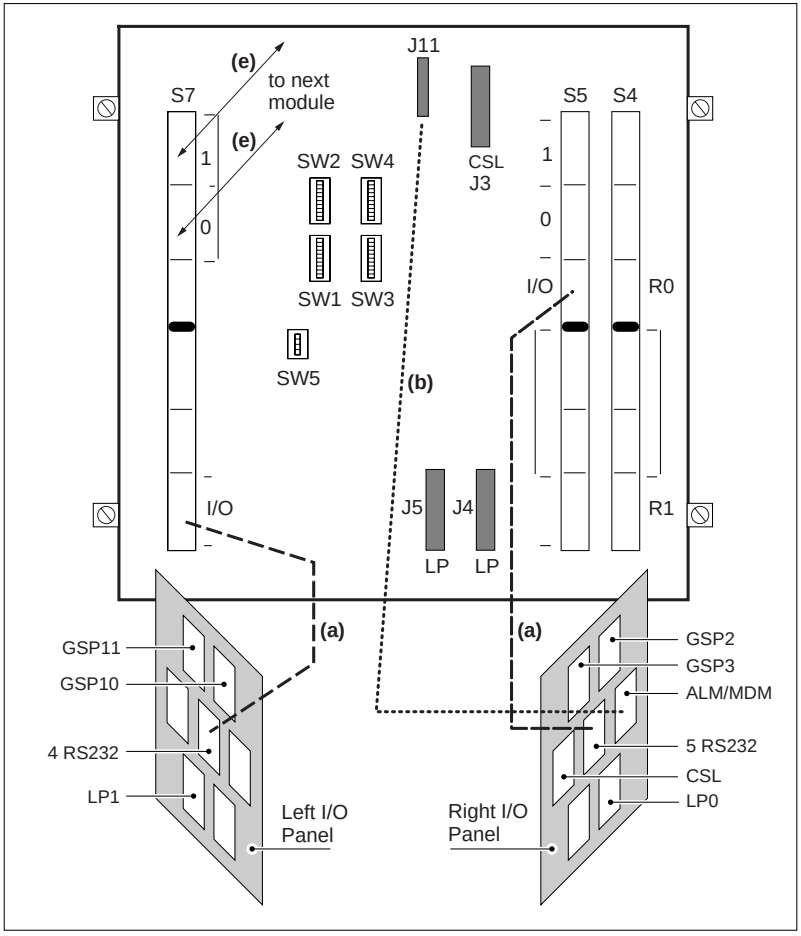
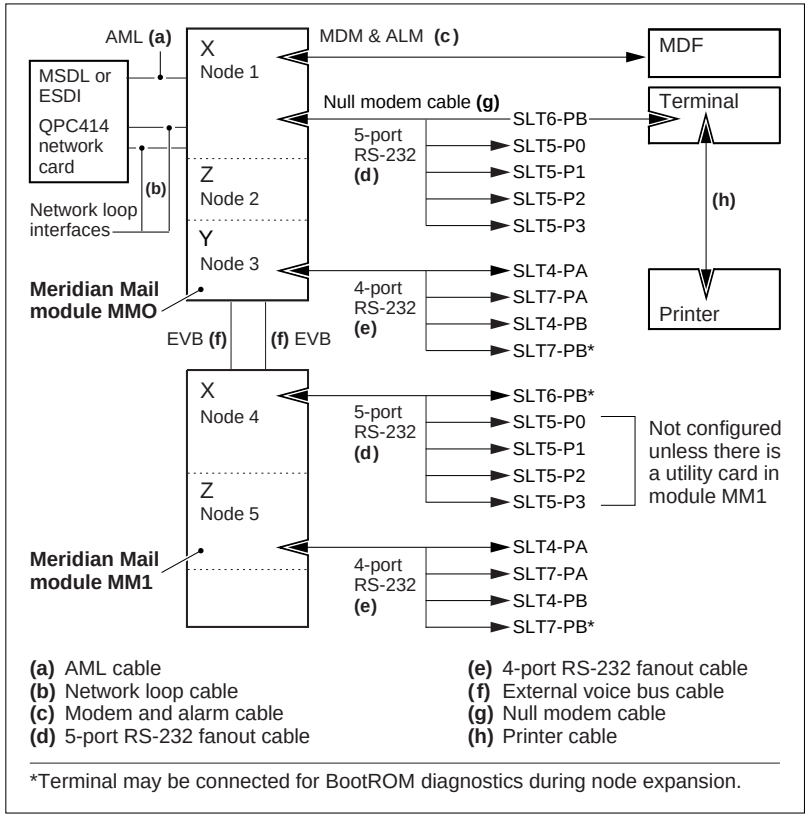


Figure 2-11
Modular Option EC unshadowed system—ports for peripheral devices



(a) AML cable
(b) Network loop cable
(c) Modem and alarm cable
(d) 5-port RS-232 fanout cable
(e) 4-port RS-232 fanout cable
(f) External voice bus cable
(g) Null modem cable
(h) Printer cable

*Terminal may be connected for BootROM diagnostics during node expansion.

Connecting peripheral devices

Once the Application Processor has been positioned, connect the peripheral devices as follows:

1 Connect the monitor and keyboard to the Application Processor.

2 Connect the printer to the Application Processor.

3 Connect the UPS (optional).

4 Connect the external modem.

Procedure 2-3
Connecting the monitor and keyboard to the Application Processor

1 Connect the video cable on the monitor to the 15-pin output of the display adapter on the Application Processor and tighten the fastening screws.

2 Connect the power cord to the monitor.

3 Connect the mouse and keyboard connectors to the respective DIN connectors on the back of the Application Processor.

Procedure 2-4
Connecting the printer to the Application Processor

This procedure describes how to connect the HP LaserJet 4M Plus printer to the Application Processor. Follow the same procedure for connecting the dot matrix printer.

To connect the HP LaserJet 4M Plus printer to the Application Processor:

1 Connect the wide end of the printer cable (Centronics connector) to the printer connector and secure it with the wire clips on either side of the connector.

2 Connect the other end of the printer cable (DB25 connector) to the parallel connector on the back of the Application Processor and tighten the fastening screws.

3 Ensure that the printer is turned off by pressing the 0 on the ON/OFF switch.

4 Connect the power cord to the printer.

5 Set up the printer according to the directions given in the manual provided with the printer.

Note: See the HP LaserJet 4 and 4M Printers Users Manual (HP Part No. C2001-90912)

Configuring the printer The HP LaserJet 4M Plus should be connected to the Application Processor through the UNIX device lp0. This printer device permits the printing of ASCII text and PostScript files.

Note: The dot matrix printer can print only ASCII text files.

Refer to "Configuring printer drivers" on page 2-29 for the correct device settings.

Procedure 2-5
Connecting the UPS

1 Connect one end of the serial communications cable (DB9 connector) to the UPS and tighten the fastening screws.

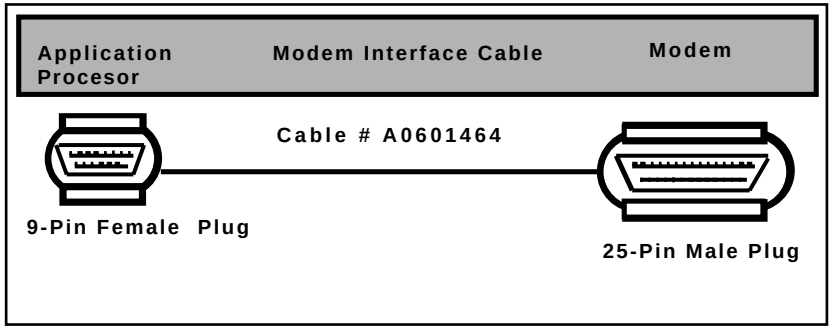
2 Connect the other end of the serial communications cable to Digiboard connector number P7.

3 Connect the power cord to the UPS.

Procedure 2-6
Connecting the external modem (optional)

The following illustration shows the cable connection between the external Modem and Meridian IVR.

Figure 2-12
Modem cable connections



1 Connect one end of the modem interface cable to the modem and tighten the fastening screws.

2 Connect the other end of the cable to the COM 2 connector on the back of the Application Processor.

3 Connect one end of the telephone cable (RJ-11 jack) into the modem.

4 Connect the other end of the telephone cable into a wall jack dedicated for data communication.

5 Connect the power cord to the modem.

Optional hardware devices

The following hardware options can be ordered separately for the Application Processor:

Audio line interface

The Audio Line Interface (ALI) is used for transferring voice prompts from audio tape to the Meridian Mail system. The ALI package includes a Multi Purpose Amplifier (MPA), an AC adapter for MPA, an ALI cable and a stereo headset.

To transfer the prompts to Meridian Mail, you need to connect the ALI and the tape recorder to your telephone set.

Procedure 2-7
Using the optional Audio Line Interface

1 Disconnect the handset cord from the base of the telephone.

2 Plug the RJ11 cable (the short straight cable) in the RJ11 connector on the telephone.

3 Unplug the headset cord from the bottom of the ALI.

4 Plug the ALI cable in the headset cord outlet on the bottom of the unit.

5 Connect the remaining cable ends on the ALI cable.

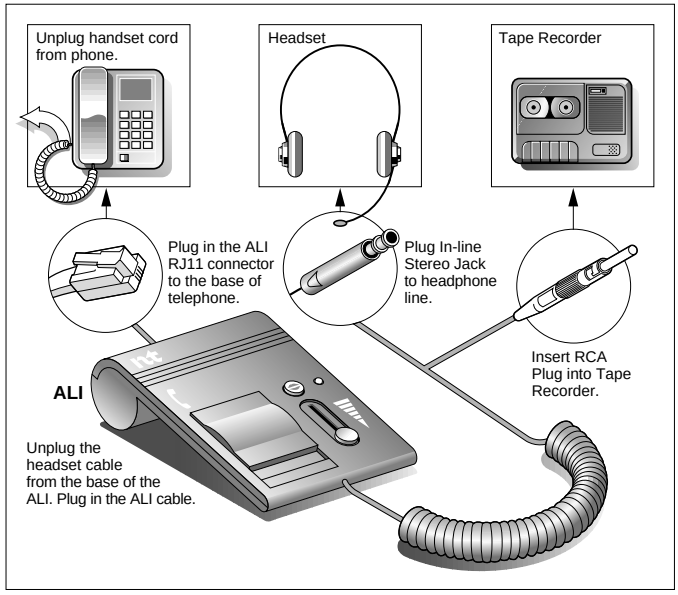
6 Insert the RCA plug (male connector) in the tape recorder.

7 Connect the other end of the cable, the In-Line Stereo Jack, to the headset.

The headset is used for listening to the prompts as they are played back. It is not used for recording because it has no microphone.

Figure 2-13 shows the connections for the Audio Line Interface.

Figure 2-13
Connecting the Audio Line Interface



DEC dot matrix printer

This optional printer can be used for Meridian IVR application development and report generation.

- See Procedure 2-4 for instructions on cabling the printer.
- See Procedure 2-12 for instructions on configuring the printer.

Installing the key lock security device

The key lock security device (also known as the “dongle”) is pre-initialized by Nortel manufacturing. This device is shipped separately and must be installed on site.

The device is encoded with the Meridian Mail system serial number. An exact match between the information on this device and the installed software is required before the Meridian IVR system will operate.

Procedure 2-8
Connecting the key lock security device

1. Connect the DB25 male connector of the key lock security device (NT7D6IBB) to the COM 1 port on the back of the Application Processor.
2. Tighten the fastening screws on the key lock.

If any problems occur with your key lock security device, refer to the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500) for instructions.

Connecting the power cords

When the hardware installation is complete, connect the power cord to the Application Processor. Connect the other end of the power cord into a three-wire grounded AC wall outlet or power bar. Connect the power cords for all peripherals (monitor, printer, and modem) to properly grounded AC outlets as well.

CAUTION!
Risk of damage and personal injury

Use a properly shielded and grounded AC power bar to protect the Application Processor and peripheral devices.

Failure to properly ground the Application Processor may cause unpredictable results and pose a shock hazard to personnel.

Turning on your system

Once all the peripherals and power cords have been connected and additional hardware options have been installed, you can power up the Application Processor. Starting with the monitor and the Application Processor box, power up each component. This procedure is described under "Powering up Meridian IVR" on page 2-25.

Notes:

1 Ensure that you have removed the drive protection cards (if present) from the diskette and tape drives before you turn on the system.

2 If the Application Processor does not come on when you plug it into the AC outlet, turn it on by pressing the DC on/off push button switch on the front panel.

3 Verify that the power-on light on the front panel is lit. After a few seconds the power-on self-test (POST) begins.

Power-on self-test

Each time the Application Processor is turned on, the power-on self-test (POST) runs automatically. This is a comprehensive test which checks the following:

- memory modules
- keyboard
- system baseboard (hard drive configuration, floppy drive, cache, EISA bus, and CMOS).

Hardware options can be tested separately after the power-on self-test has completed successfully. For more information on testing additional hardware components and performing diagnostics, refer to the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500)

Monitoring POST

If the Application Processor halts before POST completes running, POST emits a beep code indicating a fatal system error that requires immediate attention. Note the window display, and write down any beep code emitted. This information is useful to your service representative.

For a listing of POST beep codes and error messages, see the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500).

If you have problems

Problems that can occur at initial system start-up are usually caused by omissions in the installation procedure itself or by device configuration errors. Hardware failure is a less frequent cause.

If problems do occur during the power-up of the Meridian IVR system refer to the "Fault checklist" on page 2-26.

Verify the key system indicators

As POST determines the system configuration, it tests for the presence of each mass storage device installed in the system. As each device is checked, its activity light should turn on briefly. Check for the following:

- Does the diskette drive activity indicator turn on briefly?
- If a second diskette drive is installed, does its activity indicator turn on briefly?
- If there is a hard disk drive or SCSI devices installed in the system, does the hard disk drive activity indicator turn on briefly?

Left indicator When lit, it indicates that a hard disk drive is in a particular slot on the docking bay.

Middle indicator When lit, it indicates activity on a particular hard disk drive.

Right indicator This light is inactive.

Power switch operation

The Application Processor has a single DC power switch (the top button on the front of the Application Processor) controlling power to the Application Processor. All peripheral devices are powered up individually.

Procedure 2-9
Powering up Meridian IVR

1 Check that all cabling to and from the Application Processor is connected properly.

2 Apply power to applicable peripheral devices (printer, monitor, remote support modem, and UPS).

3 Apply power to the Application Processor by pressing the power switch on the front panel.

The console will immediately begin displaying messages as the Application Processor boots up. The entire boot cycle will take less than a minute.

Note: If the system fan does not run, the display remains blank, or LEDs remain unlit, refer to the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500).

Power up and sanity check

The power up and sanity check procedure is used to verify that the Meridian IVR Application Processor will start up properly and will present a login window on the display. This will indicate whether or not the equipment has been properly installed up to this point.

The system displays the following messages, followed by the console login prompt:

- system start-up messages
- system start-up messages if the Meridian ACCESS link is not connected
- system start-up messages if the Meridian ACCESS link is connected

The system has now completed its bootup. The console can be used at this point to log in to any desired account. A warning is displayed if Meridian IVR nodes and channels have not been configured through Meridian IVR System Configuration.

Note: If normal system start-up messages are not displayed, refer to the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500).

Fault checklist

- Is AC power available at the wall outlet?
- Is the system power cord properly connected to the system and plugged into a NEMA 5-15R outlet for 100-120 VAC or a NEMA 6-15R outlet for 200-240 VAC?
- Did you press the DC power on/off push-button switch on the front panel to turn the system on (power-on indicator should be lit)?
- Is the I/O panel seated on the system board?
- Are all cables correctly connected and secured?
- Are all add-in boards, modules, and components fully seated in their slots on the system board?
- Are jumper settings on the system board correct?
- Are all jumper and switch settings on add-in boards and peripheral devices correct? See the manufacturer's documentation. Ensure there are no conflicts; for example, two add-in boards sharing the same interrupt.
- Are all add-in boards and peripheral devices installed correctly?
- If the system has a hard disk drive, is it properly formatted, defined, and recognized?
- Is the SCSI backplane configured and terminated correctly?
- Are device drivers properly installed?
- Is the operating system properly loaded? See the operating system documentation.

If these items check out correctly, but the problem recurs, refer to the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500).

ATTENTION!

If you cannot start or restart the Application Processor contact your technical assistance service before proceeding to test the hardware devices or to attempting to re-install Meridian IVR software.

Setting time zones and daylight savings

The system is shipped from the factory with default settings for time zone and daylight savings. The value-added developer (VAD) is responsible for ensuring that these values are set correctly for the customer's location.

Checking the key lock security device

After the system has booted, check that the key lock security device is properly installed and matches the system ID, to ensure that your system is working properly. Also verify that the number of ports and the options match what was purchased.

Procedure 2-10
Checking the key lock security device

1 From the console login, type **vad** and press <Enter>.

2 Enter the vad password. The default password is vad1.

3 From the vad account, and in the UNIX window, type **readdongle a**nd press <Enter>.

Note: "readdongle" is used to verify the integrity of the key lock security device.

Refer to "Connecting the key lock security device" on page 2-22 to connect the key lock security device ("dongle") to the Meridian IVR system.

4 If the sanity check is successful, continue with the remaining procedures in this chapter which apply to your installation.

If not, refer to the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500) for help.

After completing all applicable procedures in this chapter, go to "Configuring Meridian IVR for testing" on page 3-1.

Printing the HP LaserJet 4M Plus self-test page

Figure 2-14 describes the settings for the self-test page for the printer. It shows the Meridian IVR standard menu selections and menu items in the order they appear on the control panel display. Follow Procedure 2-11 to print the test page.

Procedure 2-11
Invoking the HP Laserjet 4M Plus self-test

1 Take the printer off line by pressing the On line key on the printer control panel.

The On line indicator will no longer be lit.

2 Press the Menu key until "TEST MENU" appears on the printer's display.

3 Press the Item key until "self-test" appears on the printer's display.

4 Press <Enter> to run the test.

5 Once the self-test page has printed, press the On line key on the printer to return the printer on line.

The On line indicator lights up.

Figure 2-14
Meridian IVR settings for self-test page for the HP LaserJet 4M Plus printer

```
                    ----self-test----

PRINTING MENU               PCL MENU                    PS MENU
COPIES          = 1         FONT SOURCE = I (Internal)  PRT PS ERRORS = OFF
PAPER           = LETTER    FONT NUMBER = 0
ORIENTATION     = P (Portrait) PITCH        = 10.00
FORM            = 60 LINES  SYM SET       = ROMAN-8
MANUAL FEED     = OFF
RET             = MEDIUM

JOB MENU                    CONFIG MENU                 PARALLEL MENU
PAGEPROTECT     = OFF       MP TRAY       = CASS        HIGH SPEED    = YES
RESOLUTION      = 600       LOCK          = NONE        ADV FNCTNS    = OFF-8
PERSONALITY     = AUTO      CLR WARN      = ON
TIMEOUT         = 15        AUTO CONT     = OFF
MANUAL FEED     = OFF       DENSITY       = 3
RET             = MEDIUM    LOWER TONER   = ON

SERIAL MENU
SERIAL          = RS-232
PACING          = XON/XOFF
BAUD RATE       = 9600
ROBUST XON      = ON
DTR POLARITY    = HI
```

Configuring printer drivers

Before using the printer you must configure the printer drivers on the Application Processor.

The following text describes the configuration process for the HPLaserJet 4M Plus printer. If you are configuring the dot matrix printer, the only divergence from these steps will be the substitution of the appropriate entries in Figure 2-19 and Figure 2-21.

Procedure 2-12
Configuring the printer drivers

1 Make sure that you are logged into the system as the root user.

2 At the system prompt (#) type **sysadmsh** and press <Enter>.

The following window appears.

Figure 2-15
System administration window

3 Highlight Printers on this window and press <Enter>.

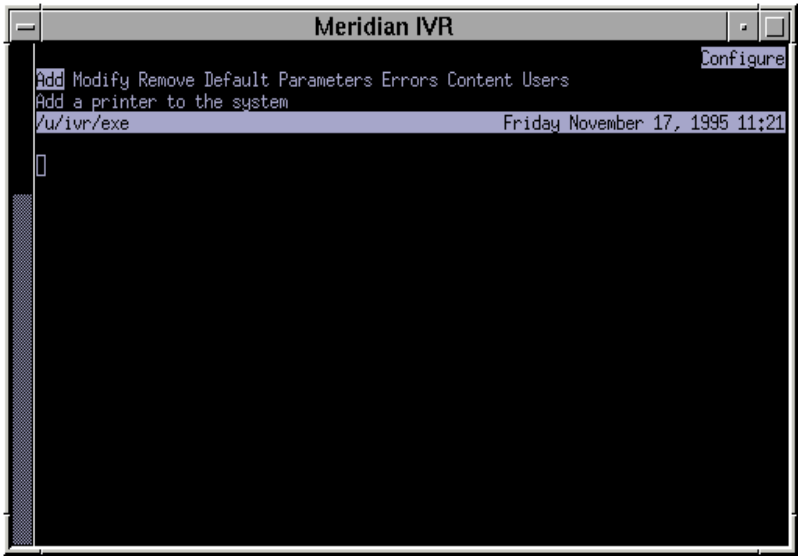
The system displays the following window.

Figure 2-16
Configure printer window

4 Highlight Configure on this window and press <Enter>.

The system displays the following window:

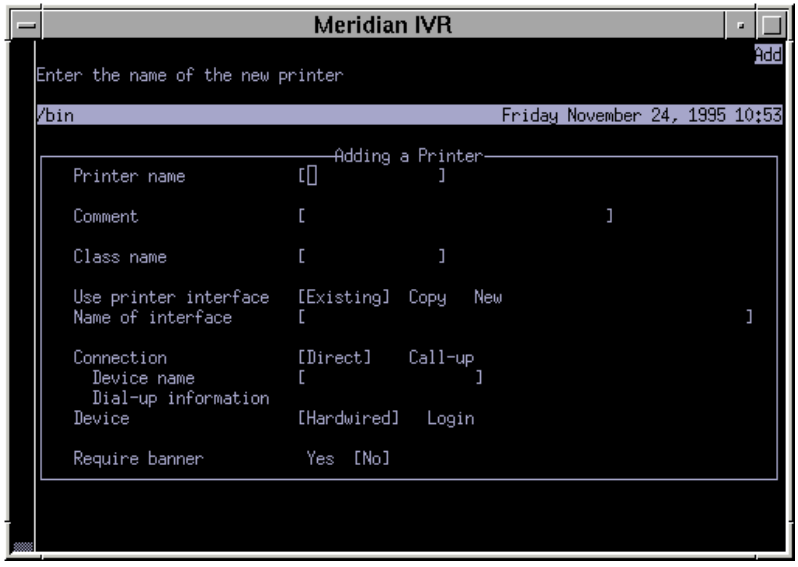
Figure 2-17
Adding a printer to the system



5 Highlight Add on this window and press <Enter>.

The system displays the following window:

Figure 2-18
Printer configuration window

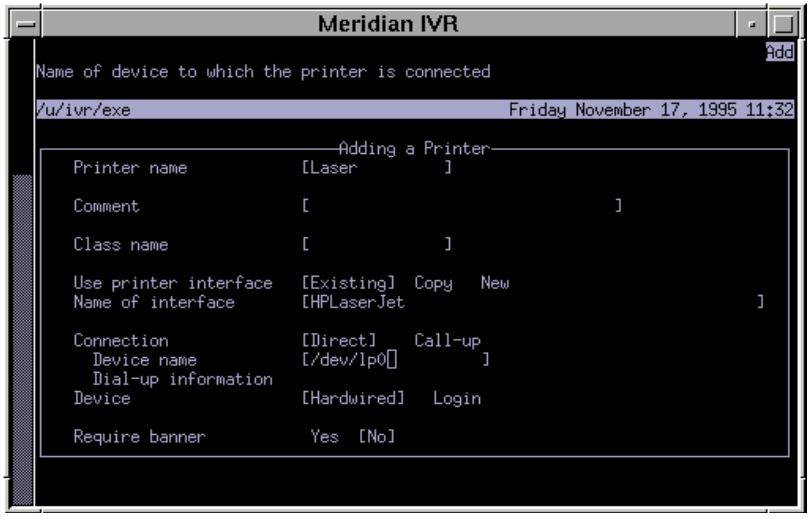


The following description is for configuring the laser printer; the procedure for configuring the dot matrix printer is identical. You must substitute the appropriate values in the printer selection field and the device name field when doing this procedure for the dot matrix printer.

Printer Selection	**Value**
Printer	HPLaserJet
Device Name	/dev/lp0

Note: For all other fields use the system-supplied defaults. Do this by pressing <Enter> in each field as it becomes highlighted.

Figure 2-19
Adding printer information

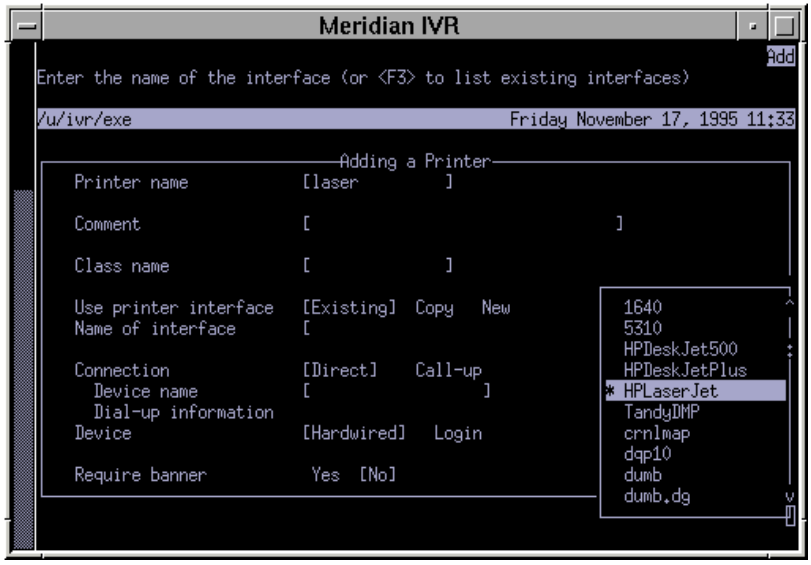


6 Type **Laser** in the Printer name field.

7 Press the <Enter> key to move down to the Printer selection field.

8 Press <F3> to display the printer selection pop-up.

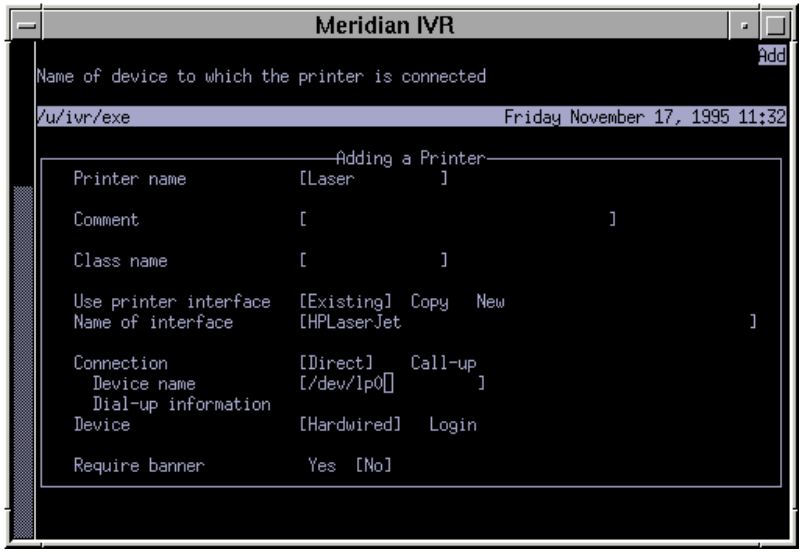
Figure 2-20
Printer pop-up window



9 Highlight HPLaserJet and then press <Enter>.

10 Type **/dev/lp0** in the Device name field.

Figure 2-21
Adding the printer values



11 Press <Enter> repeatedly until you get to the bottom of the window, this will supply all the system default values.

12 Press <Enter> one more time to display a window containing informational text which indicates the printer's status.

13 Press any key to continue.

The system redisplays the Configure window.

14 Press <esc> to Enter to the Sysadmsh window.

15 Select Quit and press <Enter>. The system displays a confirmation panel.

16 Highlight Yes and press <Enter> to exit from the system administration shell.

Connecting Meridian IVR to a host system

The host connectivity card or cards on the Application Processor are used to connect to one or more host computers. See Figure 2-22 for an overview of the procedure.

Note: The first port can be used for either a local or a remote host, and the second port only for a local host. If you are directly connecting to a local host you do not need the modem.

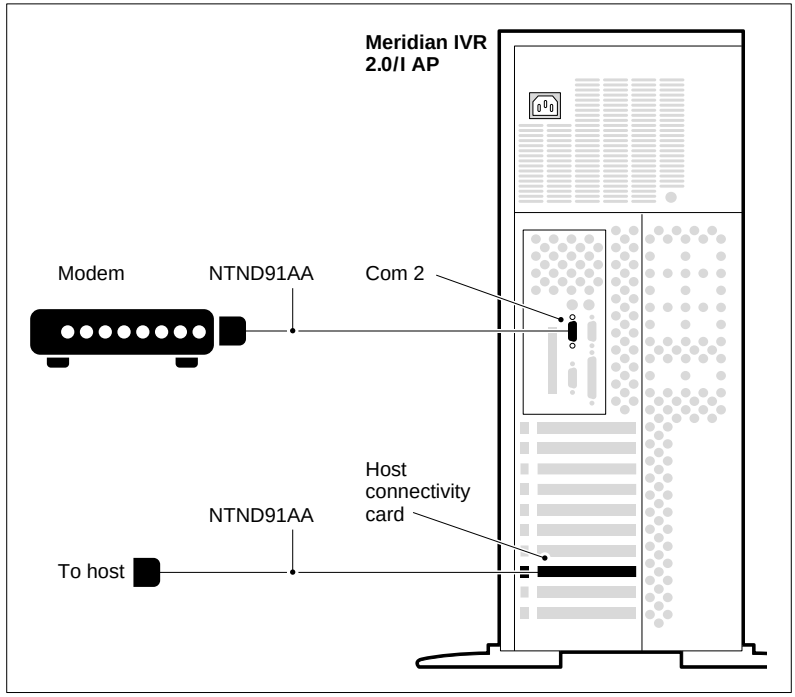
Procedure 2-13
Connecting Meridian IVR to a host computer

1 Connect one end of the NTND91AA (straight-through cable) to the host connection on the Application Processor.

2 Connect the other end of the NTND91AA cable to the host.

3 Dial in to the host from the modem.

Figure 2-22
Connecting Meridian IVR to the host



Configuring the US Robotics modem

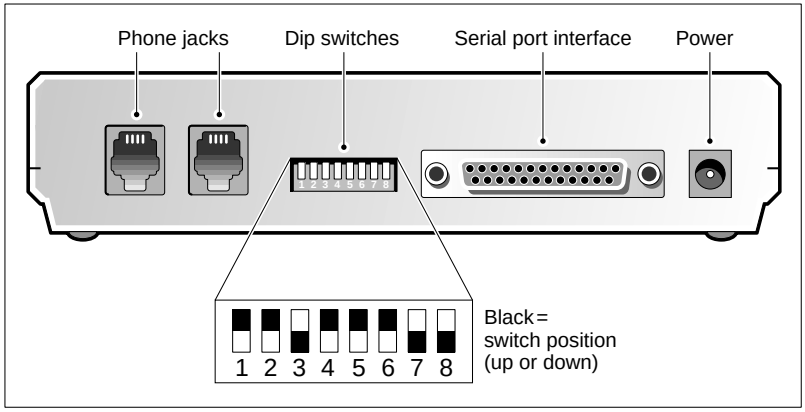
The 14 400 bps US Robotics Fax/Modem is used for remote support. The modem is connected to the COM2 port on the Application Processor.

Procedure 2-14
Configuring the US Robotics modem

1 Set the switch settings for the modem as specified in Figure 2-23.

2 Ensure that the modem cables are correctly and securely connected.

Figure 2-23
Modem configuration settings



Adding networking options

This section provides procedures for configuring the following networking options with Meridian IVR:

- ZNYX Ethernet adapter (for LAN connectivity)
- Madge Token Ring adapter (for LAN and host connectivity)
- Arnet SYNC/570 adapter

Note: Setting up the Madge Token Ring adapter requires configuration from DOS and UNIX.

Configuring the Ethernet adapter for LAN

The Ethernet adapter must be configured from UNIX. Before configuring the adapter, ensure that it has been installed and the dip switches have been set properly.

Procedure 2-15
Configuring the Ethernet adapter

1 Type netconfig at the UNIX prompt.

The following messages appear:

```
Currently configured chains:
 1. sco_tcp->lo0
       sco_tcp SCO TCP/IP for UNIX
       lo0     SCO TCP/IP Loopback driver

Available options:
 1. Add a chain
 2. Remove a chain
 3. Reconfigure an element in a chain
 q. Quit
Select option:
```

2 Select 1 and press <Enter>.

The following messages appear:

```
Num  Name       Description
1.   sco_tcp    SCO TCP/IP for UNIX
Select top level of chain to Add or q to quit:
```

3 Select 1 and press <Enter>.

The following messages appear:

```
Add chain : sco_tcp->
Num  Name  Description
1. e3A0    3Com 501 Ethernet driver, board 0
2. e3B0    3Com 503 Ethernet driver, board 0
3. e3D0    3Com 507 Ethernet driver, board 0
4. e3E0    3Com EtherLink III Ethernet driver, board 0
5. eeA0    Intel EtherExpress 16 & MCA driver, board 0
6. eeB0    Intel EtherExpress Flash32 driver, board 0
7. exos0   Excelan 205 Ethernet driver, board 0
8. hpe0    HP EISA LAN Adapter/32 TP, board 0
9. hpi0    HP EtherTwist ISA LAN Adapter, board 0
10.i3B0    Racal InterLan LLI ES-3210 STREAMS driver, board 0
11. i6E0    Racal InterLan LLI NI-6510 STREAMS driver, board 0
12. lo0     SCO TCP/IP Loopback driver
13. mtok0   Madge Networks Smart Ringnode driver, board 0
14. mtok1   Madge Networks Smart Ringnode driver, board 1
15. mtok2   Madge Networks Smart Ringnode driver, board 2
16. mtok3   Madge Networks Smart Ringnode driver, board 3
17. nat0    Novell NE2000 Ethernet driver, board 0
18. ne0     Novell NE3200 Bus Master Ethernet driver, unit 0
19. pnt0    AMD PCNET Family Ethernet driver, board 0
20. ppp0    PPP Interface 0
21. sebm0   SMC Elite32 Ultra 82M32 LAN Adapter driver, board 0
22. sl0     SLIP Interface 0
23. sme0    SMC EtherCard Elite16 Ultra LAN Adapter driver,
board 0
24. tok0    IBM Token Ring Network Adapter driver, board 0
25. wdn0    SMC/WD 8003/8013 Series driver, board 0
26. wwdu0   IBM Streamer Family Adapter driver, board 0
27. zp20    ZNYX ZX312 PCI EtherAction, board 0
Select next level of chain to Add or q to quit:
```

4 Type 27 and press <Enter> to select the ZNYX Ethernet adapter.

The following message appears:

```
Add chain sco_tcp->zp20 (y/n):
```

5 Type **y** and press <Enter>.

The following messages appear:

```
Adding: sco_tcp->zp20
Installing ZX312 LLI Driver zp20 under sco_tcp...
```

```
Configuration of Hardware Parameters for the first
ZNYX ZX312 PCI EtherAction board.

Valid choices for the PCI Bus Number are :
   0 - 255
Enter PCI Bus Number [0] :
```

6 Type 0 and press <Enter>.

The following messages appear:

```
Selected : 0

Valid choices for the PCI Device Number are :
 0 - 21
Enter PCI Device Number [0] :
```

7 Type 0 and press <Enter>.

The following messages appear:

```
Selected : 0

Valid choices for the Interrupt Channel are :
 2 3 4 5 7 9 10 11 12 14 15
Enter Interrupt Channel [10] :
```

8 Type 10 and press <Enter>.

The following messages appear:

```
Selected : 10

Network Media Type Selection

Enter  1 for Automatic Media Detection,
       2 to use 10Base-T Ethernet (RJ-45 connector),
       3 to use 10Base-T Full-Duplex Ethernet(RJ-45 connector)
       4 to use 10Base-2 Thin Ethernet (BNC connector),
       5 to use 10Base-5 Thick Ethernet (AUI connector).

Valid choices for the Network Media Type are :
   1 2 3 4 5
Enter Network Media Type [1] :
```

9 Type 1 and press <Enter>.

The following messages appear:

```
Selected : 1
```

```
Configuration of Hardware Parameters for the first ZX312 board
driver zp20 is complete.

Enabling zp21 configuration files.

Installing SCO TCP/IP over zp20

Please enter the following information in order to configure
zp20
Enter the internet address of this interface: 50.100.200.10
Enter the netmask for this interface (default: 255.0.0.0):
255.255.0.0
Does the interface use a broadcast address of all 1's? (y/n)
(default: y):
Enter the broadcast address for this interface
       (default: 50.100.255.255):
```

10 Type the appropriate values for the above prompts. See your system administrator for the correct network information. The numbers shown in bold are examples only.

The following messages appear:

```
Interface Address:              50.100.200.10
Netmask:                        255.255.0.0
Broadcast address:              50.100.255.255

Are these values correct? (y/n):
```

11 Type **y** and press <Enter> to accept the values.

The following prompt appears:

```
Enter local host name or enter q to quit [mivr]:
```

12 Press <Enter> to accept the default host name or choose another name and press <Enter>.

The following prompt appears:

```
32 Pseudo ttys are currently configured, do you want to:

       1. Add Pseudo ttys
       2. Remove Pseudo ttys

Select an option or enter q to quit [q]:
```

13 Type **q** to quit.

The following prompt appears:

```
512 TCP connections currently configured, do you want to:

       1. Add TCP Connections
       2. Remove TCP Connections

Select an option or enter q to quit [q]:
```

14 Type **q** to quit.

The following messages appear:

```
TCP/IP Configuration Complete.

Currently configured chains:
   1. sco_tcp->lo0
       sco_tcp SCO TCP/IP for UNIX
       lo0     SCO TCP/IP Loopback driver
   2. sco_tcp->zp20
       sco_tcp SCO TCP/IP for UNIX
       zp20    ZNYX ZX312 PCI EtherAction, board 0

Available options:
   1. Add a chain
   2. Remove a chain
   3. Reconfigure an element in a chain
   q. Quit
Select option:
```

15 Type **q** and press <Enter> to quit.

The following prompt appears:

```
Do you want to relink the kernel now?
```

16 Type **y** and press <Enter>.

The following messages appear:

```
   The UNIX Operating System will now be rebuilt.
   This will take a few minutes.  Please wait.

   Root for this system build is /.

   The UNIX Kernel has been rebuilt.

Do you want this kernel to boot by default? (y/n)
```

17 Type **y** and press <Enter>.

The following messages appear:

```
Backing up /unix to /unix.old
Installing new /unix

The kernel environment includes device node files and
/etc/inittab.
The new kernel may require changes to /etc/inittab or device
nodes.

Do you want the kernel environment rebuilt? (y/n)
```

18 Type **y** and press <Enter>.

The following messages appear:

```
The kernel has been successfully linked and installed.
    To activate it, reboot your system.

Setting up new kernel environment
```

The Ethernet adapter is configured. Reboot the system for the changes to take effect. Once the system has rebooted, use the following command to check the network connection:

ping *hostname* <Enter>

where ***hostname*** is the IP address or name of your system.

This should produce output similar to the following:

```
----hostname.xxx.yy.com PING Statistics----
87 packets transmitted, 87 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 0/0/3
```

Press <Ctrl-C> after you have received several lines of output to cancel it. If no output is produced there may be a problem with the card.

Configuring the Madge Token-Ring adapter

The Token-Ring adapter must be configured from both DOS and UNIX for either LAN or 3270/5250 host connectivity. Before configuring the adapter, ensure that it has been installed and the dip switches have been set properly.

Procedure 2-16
Configuring the Token-Ring adapter from DOS

1. Boot the AP from the floppy drive using a DOS 6.22 (or higher) system diskette.
2. Change directory to c:\token using the following command:

   cd token `<Enter>`
3. Enter the following command to run the configuration:

   trcfg `<Enter>`
4. Press <F4> to start.

   This will search for the available card.
5. Select the adapter using arrow keys then press <F4>.
6. Select the proper IRQ, I/O port address and DMA channel. Refer to Table 2-1 for the correct settings. The port address must correspond to the dip switch settings on the card.

Table 2-1
Token-Ring Interrupt/Memory address and I/O port address list

IRQ	Mem Address	I/O Port Address	DMA Channel	Switch 1	Switch 2	Note
10	DC000	1a20	6	ON	OFF	For LAN Connectivity only
15	DE000	3a20	5	ON	ON	For Host Connectivity only

7. Save the changes and exit the trcfg utility.
8. Refer to the following sections for configuring the adapter for either LAN or host connectivity:
   - Figure 2-17 on page 2-46 for LAN connectivity
   - Figure 2-18 on page 2-51 for host connectivity

Procedure 2-17
Configuring the Token-Ring adapter for LAN connectivity from UNIX

1 Remove the DOS disk from the floppy drive

2 Reboot the AP.

3 Type netconfig at the UNIX prompt.

The following messages appear:

```
Currently configured chains:
 1. sco_tcp->lo0
       sco_tcp SCO TCP/IP for UNIX
       lo0     SCO TCP/IP Loopback driver

Available options:
 1. Add a chain
 2. Remove a chain
 3. Reconfigure an element in a chain
 q. Quit
Select option:
```

4 Select 1 and press <Enter>.

The following messages appear:

```
Num  Name       Description
1.   sco_tcp    SCO TCP/IP for UNIX
Select top level of chain to Add or q to quit:
```

5 Select 1 and press <Enter>.

The following messages appear:

```
Add chain : sco_tcp->
Num  Name  Description
1. e3A0    3Com 501 Ethernet driver, board 0
2. e3B0    3Com 503 Ethernet driver, board 0
3. e3D0    3Com 507 Ethernet driver, board 0
4. e3E0    3Com EtherLink III Ethernet driver, board 0
5. eeA0    Intel EtherExpress 16 & MCA driver, board 0
6. eeB0    Intel EtherExpress Flash32 driver, board 0
7. exos0   Excelan 205 Ethernet driver, board 0
8. hpe0    HP EISA LAN Adapter/32 TP, board 0
9. hpi0    HP EtherTwist ISA LAN Adapter, board 0
10.i3B0    Racal InterLan LLI ES-3210 STREAMS driver, board 0
11. i6E0    Racal InterLan LLI NI-6510 STREAMS driver, board 0
12. lo0     SCO TCP/IP Loopback driver
```

```
13. mtok0   Madge Networks Smart Ringnode driver, board 0
14. mtok1   Madge Networks Smart Ringnode driver, board 1
15. mtok2   Madge Networks Smart Ringnode driver, board 2
16. mtok3   Madge Networks Smart Ringnode driver, board 3
17. nat0    Novell NE2000 Ethernet driver, board 0
18. ne0     Novell NE3200 Bus Master Ethernet driver, unit 0
19. pnt0    AMD PCNET Family Ethernet driver, board 0
20. ppp0    PPP Interface 0
21. sebm0   SMC Elite32 Ultra 82M32 LAN Adapter driver, board 0
22. sl0     SLIP Interface 0
23. sme0    SMC EtherCard Elite16 Ultra LAN Adapter driver,
board 0
24. tok0    IBM Token Ring Network Adapter driver, board 0
25. wdn0    SMC/WD 8003/8013 Series driver, board 0
26. wwdu0   IBM Streamer Family Adapter driver, board 0
27. zp20    ZNYX ZX312 PCI EtherAction, board 0
Select next level of chain to Add or q to quit:
```

6 Type 13 and press <Enter> to select the Madge Token-Ring adapter.

The following message appears:

```
Add chain sco_tcp->mtok0 (y/n):
```

7 Type **y** and press <Enter>.

The following messages appear:

```
Adding: sco_tcp->mtok0
Configuring Madge Token Ring Adapter 0

Installing the mtok driver into the link kit
Enter card type (AT MC EISA SM16) [AT] or 'q' to quit:
```

8 Type AT and press <Enter>.

The following prompt appears:

```
Enter IO location (0a20 1a20 2a20 3a20) [0a20] or 'q' to quit:
1a20
```

9 Type **1a20** and press <Enter>.

The following prompt appears:

```
Enter IRQ (2 3 5 7 10 11 12 15) [2] or 'q' to quit: 10
```

10 Type **10** and press <Enter>.

The following prompt appears:

```
Enter the DMA channel (1 2 5 6 NONE) [5] or 'q' to quit: 6
```

11 Type **6** and press <Enter>.

The following prompt appears:

```
Enter LAA (0 = Burnt in address) [0] or 'q' to quit: 0
```

12 Type **0** and press <Enter>.

The following messages appear:

```
Installing SCO TCP/IP over mtok0

Please enter the following information in order to configure
zp20
Enter the internet address of this interface: 50.100.200.10
Enter the netmask for this interface (default: 255.0.0.0):
255.255.0.0
Does the interface use a broadcast address of all 1's? (y/n)
(default: y):
Enter the broadcast address for this interface
       (default: 50.100.255.255):
```

13 Type the appropriate values for the above prompts. See your system administrator for the correct network information. The numbers shown in bold are examples only.

The following messages appear:

```
Interface Address:              50.100.200.10
Netmask:                        255.255.0.0
Broadcast address:              50.100.255.255

Are these values correct? (y/n):
```

14 Type **y** and press <Enter> to accept the values.

The following prompt appears:

```
Enter local host name or enter q to quit [mivr]:
```

15 Press <Enter> to accept the default host name or choose another name and press <Enter>.

The following prompt appears:

```
32 Pseudo ttys are currently configured, do you want to:
```

```
        1. Add Pseudo ttys
        2. Remove Pseudo ttys

Select an option or enter q to quit [q]:
```

16 Type **q** to quit.

The following prompt appears:

```
512 TCP connections currently configured, do you want to:

        1. Add TCP Connections
        2. Remove TCP Connections

Select an option or enter q to quit [q]:
```

17 Type **q** to quit.

The following messages appear:

```
TCP/IP Configuration Complete.

Currently configured chains:
   1. sco_tcp->lo0
       sco_tcp SCO TCP/IP for UNIX
       lo0     SCO TCP/IP Loopback driver
   2. sco_tcp->mtok0
       sco_tcp SCO TCP/IP for UNIX
       mtok0   Madge Networks Smart Ringnode driver, board 0

Available options:
   1. Add a chain
   2. Remove a chain
   3. Reconfigure an element in a chain
   q. Quit
Select option:
```

18 Type **q** and press <Enter> to quit.

The following prompt appears:

```
Do you want to relink the kernel now?
```

19 Type **y** and press <Enter>.

The following messages appear:

```
   The UNIX Operating System will now be rebuilt.
   This will take a few minutes.  Please wait.
```

```
   Root for this system build is /.

   The UNIX Kernel has been rebuilt.

Do you want this kernel to boot by default? (y/n)
```

20 Type **y** and press <Enter>.

The following messages appear:

```
Backing up /unix to /unix.old
Installing new /unix

The kernel environment includes device node files and
/etc/inittab.
The new kernel may require changes to /etc/inittab or device
nodes.

Do you want the kernel environment rebuilt? (y/n)
```

21 Type **y** and press <Enter>.

The following messages appear:

```
The kernel has been successfully linked and installed.
   To activate it, reboot your system.

Setting up new kernel environment
```

The Token-Ring adapter is configured. Reboot the system for the changes to take effect. Once the system has rebooted, use the following command to check the network connection:

ping *hostname* <Enter>

where ***hostname*** is the IP address or name of the system.

This should produce output similar to the following:

```
----hostname.xxx.yy.com PING Statistics----
87 packets transmitted, 87 packets received, 0% packet loss
round-trip (ms)  min/avg/max = 0/0/3
```

Press <Ctrl-C> after you have received several lines of output to cancel it. If no output is produced there may be a problem with the card. Refer the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500) for diagnostic procedures for the Token-Ring adapter.

Procedure 2-18
Configuring the Token-Ring adapter for 3270/5250 host connectivity from UNIX

1 Remove the DOS disk from the floppy drive.

2 Reboot the AP.

3 Type express_adm admin at the UNIX prompt.

The EXPRESS Administration screen appears:

```
EXPRESS Administration
_____________________________________________________

Selection
_____________________________________________________

1. Work with Communication Adapters
2. Remove a System
3. Add/Modify IP Addresses
4. Backup EXPRESS Database
5. Restore EXPRESS Database
6. Tune Interactive Session Resources

Please enter your selection or 'q' to quit: 1
```

4 Type **1** and press <Enter>.

The following screen appears:

```
Work with Communication Adapters
_____________________________________________________

Selection
_____________________________________________________

1. Add Communication Adapters
2. Modify Communication Adapters
3. Remove Communication Adapters
4. Test Communication Adapters
5. Display Communication Adapters

Please select item number
or 'c' to go back to upper level menu: 1
```

5 Type **1** and press <Enter>.

The following screen appears:

```
Add Communication Adapters:
_____________________________________________________________

Selection
_____________________________________________________________

1. Add HPA Adapter(s)
2. Add Emulex Adapter(s)
3. Add ELC Adapter
4. Add Madge Token Ring Adapter

Please select item number
or 'c' to go back to upper level menu:    4
```

6 Type **4** and press <Enter>.

The following messages appear:

```
Attempting to select default parameters for Madge card.
Please wait.

Please press ENTER to continue.
```

7 Press <Enter>.

The Add Madge Adapter screen appears:

```
Add Madge Adapter
_____________________________________________________________

Selection                          Current Value
_____________________________________________________________

1.  Set Bus Type (AT, MC, EISA)      AT
2.  Set Interrupt Level              2
3.  Set I/O Address                  0A20
4.  Set DMA Channel                  1

Please enter your selection
or 'c' to cancel
or 'o' for ok:    2
```

Note: Do not change the default value for the bus type, as it is already set correctly.

8 Type **2** and press <Enter>.

The following prompt appears:

```
Interrupt levels available for the Madge Adapter:
(Current Interrupt level is 2)

2 3 11 15

Please enter the Interrupt level or 'c' to cancel:15
```

9 Type **15** and press <Enter>.

The Add Madge Adapter screen appears with the change:

```
Add Madge Adapter
_____________________________________________________

Selection                          Current Value
_____________________________________________________

1.  Set Bus Type (AT, MC, EISA)      AT
2.  Set Interrupt Level              15
3.  Set I/O Address                  0a20
4.  Set DMA Channel                  1

Please enter your selection
or 'c' to cancel
or 'o' for ok:    3
```

10 Type **3** and press <Enter>.

The following prompt appears:

```
I/O address available for the MADGE Adapter:
(Current I/O address is 0A20)

     0A20  1A20  2A20  3A20

Please enter the I/O address or 'c' to cancel: 3A20
```

11 Type **3A20** and press <Enter>.

The Add Madge Adapter screen appears with the change.

```
Add Madge Adapter
_____________________________________________________

Selection                          Current Value
_____________________________________________________

1.  Set Bus Type (AT, MC, EISA)      AT
2.  Set Interrupt Level              15
3.  Set I/O Address                  3a20
4.  Set DMA Channel                  1

Please enter your selection
or 'c' to cancel
or 'o' for ok:    4
```

12 Type **4** and press <Enter>.

The following prompt appears:

```
DMA available for the MADGE Adapter:
(Current DMA is 1)

     1 3 5

Please enter the DMA channel or 'c' to cancel: 5
```

13 Type **5** and press <Enter>.

The Add Madge Adapter screen appears with the change.

```
Add Madge Adapter
_____________________________________________________

Selection                          Current Value
_____________________________________________________

1.  Set Bus Type (AT, MC, EISA)      AT
2.  Set Interrupt Level              15
3.  Set I/O Address                  3a20
4.  Set DMA Channel                  5

Please enter your selection
or 'c' to cancel
or 'o' for ok:    o
```

14 If the values are correct, type **o** and press <Enter>.

The following messages appear:

```
Updating system configuration files to add Extension Modules
Updating system configuration files to add IPMC Modules
Updating system configuration files to add Gateway Modules
Updating system configuration files to add LU6.2/APPN
Updating system configuration files to add SNA
Updating system configuration files to add Token Ring
Updating system configuration files to add Madge Adapter
Creating "System" file:
MADGEUNIT=1
MADGEIRQ=15
MADGESIOA=3a20
MADGEEIOA=3a2f
Creating "Space.c" file:
MADGEDMA=5

Building new kernel...

    The UNIX Operating System will now be rebuilt.
    This will take a few minutes.  Please wait.

    Root for this system build is /.

    The UNIX Kernel has been rebuilt.

Do you want this kernel to boot by default? (y/n)
```

15 Type **y** and press <Enter>.

The following messages appear:

```
Backing up /unix to /unix.old
Installing new /unix

The kernel environment includes device node files and
/etc/inittab.
The new kernel may require changes to /etc/inittab or device
nodes.

Do you want the kernel environment rebuilt? (y/n)
```

16 Type **y** and press <Enter>.

The following messages appear:

```
The kernel has been successfully linked and installed.
    To activate it, reboot your system.

Setting up new kernel environment

Kernel rebuild succeeded.
Please exit the express_adm and reboot the system, then
bring up express to let the changes you made take effect.

Please press ENTER to continue.
```

17 Press <Enter> to redisplay the Add Communication Adapters screen.

18 Type **c** and press <Enter> to return to the previous screen.

19 Type **c** and press <Enter> to return to the main EXPRESS Administration screen.

20 Type **q** and press <Enter> to exit EXPRESS Administration utility.

The Token-Ring adapter is configured for host connectivity. Reboot the system for the changes to take effect. If the host adapter does not work properly, refer to the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500) for diagnostic procedures.

Configuring the Arnet SYNC/570 adapter

The Arnet host adapter must be configured from UNIX. Before configuring the adapter, ensure that it has been installed and the dip switches have been set properly.

Procedure 2-19
Configuring the Arnet host adapter

1 Remove the DOS disk from the floppy drive.

2 Reboot the AP.

3 Type **express_adm admin** at the UNIX prompt.

The EXPRESS Administration screen appears:

```
EXPRESS Administration
_____________________________________________________

Selection
_____________________________________________________

1. Work with Communication Adapters
2. Remove a System
3. Add/Modify IP Addresses
4. Backup EXPRESS Database
5. Restore EXPRESS Database
6. Tune Interactive Session Resources

Please enter your selection or 'q' to quit: 1
```

4 Type **1** and press <Enter>.

The following screen appears:

```
EXPRESS Administration
_____________________________________________________

Selection
_____________________________________________________

1. Work with Communication Adapters
2. Remove a System
3. Add/Modify IP Addresses
4. Backup EXPRESS Database
5. Restore EXPRESS Database
6. Tune Interactive Session Resources

Please enter your selection or 'q' to quit: 1
```

5 Type **1** and press <Enter>.

The following screen appears:

```
Add Communication Adapters:
_____________________________________________________

Selection
_____________________________________________________

1. Add HPA Adapter(s)
2. Add Emulex Adapter(s)
3. Add ELC Adapter
4. Add Madge Token Ring Adapter

Please select item number
or 'c' to go back to upper level menu:    1
```

6 Type **1** and press <Enter>.

The following messages appear:

```
Select HPA Adapter to Work with
_____________________________________________________

Selection                          Installed?
_____________________________________________________

1.  HPA SYNC/570 Board 0                No
2.  HPA SYNC/570 Board 1                No
3.  HPA SYNC/570 Board 2                No
4.  HPA SYNC/570 Board 3                No
5.  HPA SYNC/570 Board 4                No
6.  HPA SYNC/570 Board 5                No

Please enter your selection or 'c' to go back to upper level
menu: 1
```

7 Type **1** and press <Enter>.

The following messages appear:

```
Attempting to select default parameters for HPA board 0.
Please wait.
```

```
Add HPA Adapter 0
_____________________________________________________

Selection                        Current Value
_____________________________________________________

1.  Set Interrupt Level              3
2.  Set I/O Address                  100
3.  Set Memory Address               CC000

Please enter your selection
or 'c' to cancel
or 'o' for ok:    1
```

8 Type **1** and press <Enter>.

The following prompt appears:

```
Interrupt levels available for the HPA Adapter:
(Current Interrupt level is 3)

3 11 15

Please enter the Interrupt level or 'c' to cancel:15
```

9 Type **15** and press <Enter>.

The Add HPA Adapter screen appears with the change:

```
Add HPA Adapter 0
_____________________________________________________

Selection                        Current Value
_____________________________________________________

1.  Set Interrupt Level              15
2.  Set I/O Address                  100
3.  Set Memory Address               CC000

Please enter your selection
or 'c' to cancel
or 'o' for ok:    2
```

10 Type **2** and press <Enter>.

The following prompt appears:

```
I/O address available for the HPA SYNC/570 :
(Current I/O address is 100)

100        180        1F0        270        2E0        380
110        190        200        280        310        390
120        1A0        210        290        320        3A0
130        1B0        230        2A0        330        3B0
140        1C0        240        2B0        340        3C0
150        1D0        250        2C0        350        3D0
160        1E0        260        2D0        360        3E0
170

Please enter the I/O address or 'c' to cancel: 340
```

11 Type **340** and press <Enter>.

The Add HPA Adapter screen appears with the change.

```
Add HPA Adapter 0
_____________________________________________________

Selection                          Current Value
_____________________________________________________

1.  Set Interrupt Level              15
2.  Set I/O Address                  340
3.  Set Memory Address               CC000

Please enter your selection
or 'c' to cancel
or 'o' for ok:    o
```

12 Type **3** and press <Enter>.

The following prompt appears:

```
Memory Address available for the HPA Adapter:
(Current Memory Address is CC000)

CC000 D0000 D4000 D8000 DC000 E0000 E4000 E8000

Please enter the Memory Address,
either from the above list or
address divisible by 0x4000 between EC000 and FFC000,
or 'c' to cancel: DC000
```

13 Type **DC000** and press <Enter>.

The Add HPA Adapter screen appears with the change.

```
Add HPA Adapter 0
_____________________________________________________

Selection                          Current Value
_____________________________________________________

1.  Set Interrupt Level              15
2.  Set I/O Address                  340
3.  Set Memory Address               DC000

Please enter your selection
or 'c' to cancel
or 'o' for ok:    o
```

14 If the values are correct, type **o** and press <Enter>.

The following messages appear:

```
Updating system configuration files to add Extension Modules
Updating system configuration files to add IPMC Modules
Updating system configuration files to add Gateway Modules
Updating system configuration files to add LU6.2/APPN
Updating system configuration files to add SNA
Updating system configuration files to add QLLC
Updating system configuration files to add Token Ring
Updating system configuration files to add SDLC
Updating system configuration files to add X.25
Updating system configuration files to add HPA Adapter
Updating "System" file to enable HPA Adapter 0
IRQ = 15
SIOA = 340
EIOA = 34f
SCMA = dc000
ECMA = dffff

Building new kernel...

   The UNIX Operating System will now be rebuilt.
   This will take a few minutes.  Please wait.

   Root for this system build is /.

   The UNIX Kernel has been rebuilt.
```

```
Do you want this kernel to boot by default? (y/n)
```

15 Type **y** and press <Enter>.

The following messages appear:

```
Backing up /unix to /unix.old
Installing new /unix

The kernel environment includes device node files and
/etc/inittab.
The new kernel may require changes to /etc/inittab or device
nodes.

Do you want the kernel environment rebuilt? (y/n)
```

16 Type **y** and press <Enter>.

The following messages appear:

```
The kernel has been successfully linked and installed.
   To activate it, reboot your system.

Setting up new kernel environment

Kernel rebuild succeeded.
Please exit the express_adm and reboot the system, then
bring up express to let the changes you made take effect.

Please press ENTER to continue.
```

17 Press <Enter> to redisplay the Add Communication Adapters screen.

18 Type **c** and press <Enter> to return to the previous screen.

19 Type **c** and press <Enter> to return to the main EXPRESS Administration screen.

20 Type **q** and press <Enter> to exit EXPRESS Administration utility.

The Arnet host adapter is configured for host connectivity. Reboot the system for the changes to take effect. If the host adapter does not work properly, refer to “Troubleshooting procedures” on page 3-1 diagnostic procedures.

Chapter 3: Configuring Meridian IVR for testing

Overview

Basic configuration

This chapter describes the procedures needed to configure a basic Meridian IVR system with a shared configuration. Configuring Meridian IVR involves making changes to the Meridian 1 switch, to Meridian Mail, and to Meridian IVR. All three platforms must be properly configured for Meridian IVR to function properly.

The procedures for doing this are the following:

1 Configure the Meridian 1 switch.

2 Configure Meridian Mail.

3 Configure the ACCESS link.

4 Install the voice prompts from tape.

5 Configure Meridian IVR voice channels.

6 Access the System Configuration.

7 Set the number of prompts on the system.

8 Define the node characteristics.

9 Configure the channels.

10 Save the changes.

11 Synchronize the date and time with Meridian Mail and host systems.

12 Restart Meridian IVR with the new configuration.

Customer-defined configuration

After the test application has been successfully installed and run, the Meridian IVR system must be configured according to the value-added developer's specifications. This configuration is designed to support the customer's particular applications.

The final configuration may, or may not, include one or more data links to a host computer. The procedures for completing the customer-defined configuration are found in "Chapter 5: Configuring Meridian IVR for customer applications", on page 5-1.

Supporting documentation

Before beginning to configure channels on the Meridian switch, ensure that you have the following Meridian Mail NTPs:

Meridian ACCESS Configuration Guide (NTP 555-7001-315). This NTP details the basic procedures on configuring ACCESS.

Meridian Mail Installation Procedures (NTP 555-70x1-210). This NTP provides information on installing Meridian Mail.

Meridian Mail System Administration Guide (NTP 555-7001-301, 302, 303). This NTP provides information on Meridian Mail administration, including voice services configuration.

Meridian 1 ACD Administrator's Guide (NTP 553-2311-311). This NTP details information on setting up Automatic Call Distribution (ACD) on the switch.

ATTENTION!

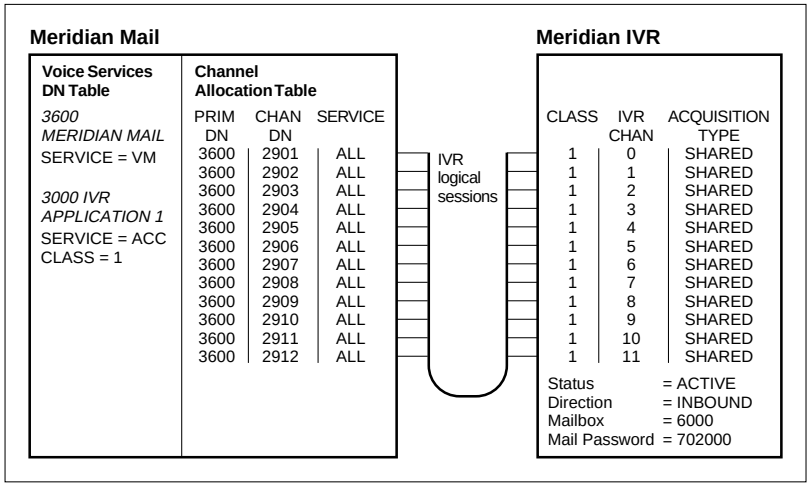
This guide was written with the assumption that the installer is familiar with administration of the Meridian 1 switch and Meridian Mail.

Shared resource configuration

If you are installing a new Meridian Mail system as well as the Meridian IVR system, ensure that Meridian Mail has been installed, configured and tested, so that voice applications use all available virtual ACD agents. See the appropriate *Meridian Mail Installation Guide* (NTP 555-70x1-210). You may also have to configure SEER and administration printing if using the Meridian IVR MM Console window.

Figure 3-1 provides an example of a basic shared configuration for 12 Meridian Mail and 12 Meridian IVR channels.

Figure 3-1
Meridian IVR/Meridian Mail configuration for a shared model (single application)



Notes:

1 In the VSDN table, 3600 is the DN of the main ACD queue. This DN may be different on your system.

2 DN 3000 is an ACD DN that is NCFW to the main ACD queue on the Meridian 1 switch. Your DN number may be different.

3 The mailbox and password assigned to the channel(s) may be different on your Meridian Mail system.

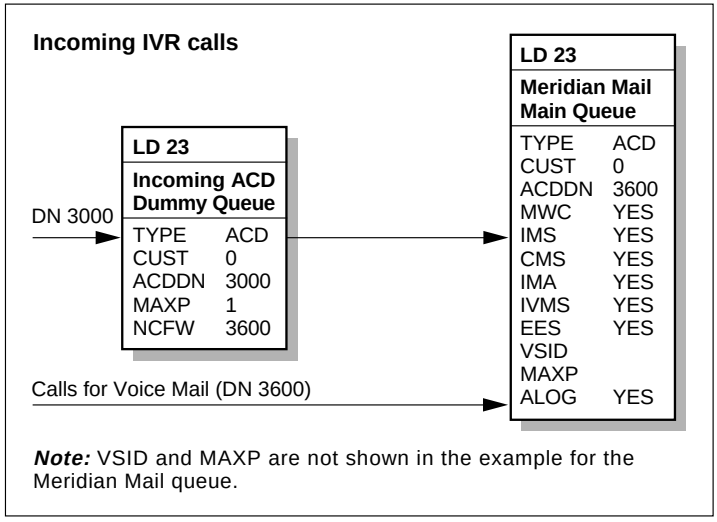
4 Your Meridian IVR system may have more or less than 12 channels, on each of Meridian Mail or Meridian IVR.

5 You can configure 48 channels in shared mode for installation testing only. The final configuration must be engineered. **For a shared configuration, 24 is the maximum channel size if you are using a 9600 baud ACCESS link**.

Configuring the Meridian 1 switch

Define a dummy ACD DN that will be used to call Meridian IVR applications. This ACD DN will be night call forwarded (NCFW) to the ACD queue with the Meridian Mail agents.

Figure 3-2
Basic Meridian 1 ACD configuration

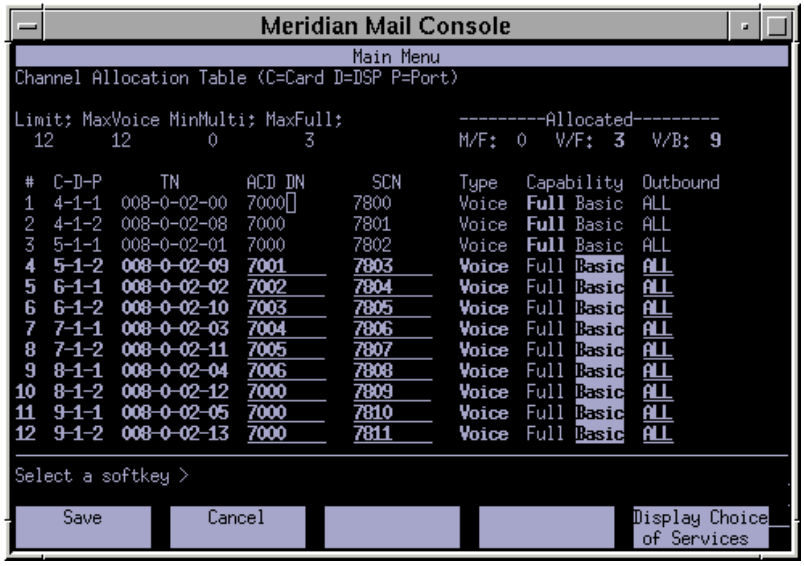


Note: VSID and MAXP are not shown in the example for the Meridian Mail queue.

Procedure 3-1
Configuring a new Meridian Mail/Meridian IVR installation

1 Determine the DN of the main ACD queue containing the Meridian Mail agents. To verify the DN, using the Meridian Mail console, select the Channel Allocation Table. The DN of the ACD queue will be listed as the “ACD DN”. The channels associated with this Primary DN should have a service field of ALL.

Figure 3-3
Determine the DN of the main ACD queue



2 Add an ACD queue which is forwarded to the main ACD queue.

- Load Overlay 23 at the Meridian 1 administration terminal.
- Respond to the prompts as shown in Figure 3-3.
- Press <Enter> for each prompt that appears after NCFW.
- Enter END at the next REQ prompt.

Table 3-1
Overlay 23-ACD queue parameters (for shared channels)

Prompts	Responses	Description
REQ	NEW	
TYPE	ACD	ACD data block
CUST	_____	SL-1 customer number
ACDN	3000	Enter the DN of the voice service
MWC	NO	This is not a message center
MAXP	1	Maximum number of positions
NCFW	3600	Enter the “main” ACD DN (one with channels assigned), to which this queue is forwarded

Configuring Meridian Mail

After you have configured the switch (Meridian 1), you must configure Meridian Mail. This consists of the following procedures:

1 Configure the ACCESS link (MMLink).

2 Configure the SEER and administration printer (this will allow Meridian IVR MM Console usage on the SVGA terminal window).

3 In Meridian Mail General Administration, under General Options, the SEER and reports printing must be directed to a dedicated printer port name. and the Meridian Mail SEER printer must be connected to its own dedicated serial port.

4 Configure Voice Service DNs and mailboxes.

5 Install standard Meridian IVR voice prompts.

Configuring the ACCESS links

Configuring Meridian Mail for ACCESS involves letting Meridian Mail know the RS-232 port on which the ACCESS link is to be connected, defining the attributes of the ports, and finally enabling the ports.

Procedure 3-2
Configuring a data port on Meridian Mail for ACCESS

This procedure can be used to view or change a dataport.

1 Log in to the tools level of Meridian Mail, and enter the tools password.

2 Verify that an option in this menu, or in the Other menu exists, titled "ACCESS diagnostics".

If this option is not present, then Meridian Mail does not have the ACCESS enable option turned on.

To turn on the ACCESS enable option you must perform a feature expansion for Meridian Mail. See the *Meridian Mail System Installation and Modification Guide* (NTP 555-7001-215) for the procedure on how to do this.

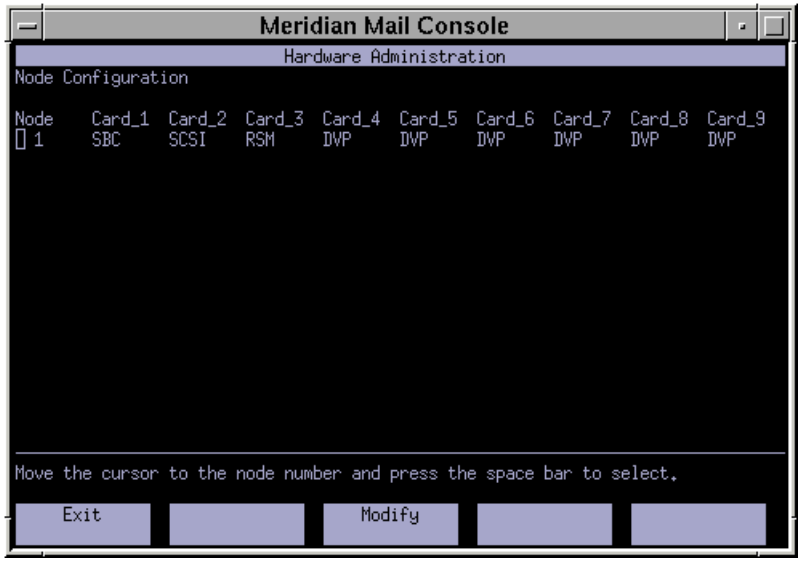
3 Select the Modify Hardware option.

4 Select option 1: Node Configuration.

A window similar to the one in Figure 3-4 (for Meridian Mail Card Option systems) will appear. The exact contents of each node, and the number of nodes, is dependent on the type of system you have.

Note: The figures in this section do not necessarily represent actual hardware configurations. They are illustrations only.

Figure 3-4
Node Configuration window for a Meridian Mail Card Option system



The following abbreviations identify the cards:

Card	Description
SBC	single board computer
SCSI	small computer standard interface (disk/tape drive)
RSM	RS–232 service module
Ram	memory board
Bus	high-speed bus
MSP	multi-purpose signal processor
NVP	network voice processor (16Kbyte). Non-EC only.
DVP	voice processor card (card option only).
NVP32	32 Kbyte network voice processor. Non-EC only.

5 Select a node on which to configure the ACCESS link.

Your choice will be influenced by the allowable positions for an ACCESS link, see Table 3-2 (for release 9 and below of Meridian Mail) or see Table 3-3 and the ports that have already been allocated to other peripheral devices.

Having selected the node on which the ACCESS link will be configured, you are presented with a window similar to the one shown in Figure 3-5.

Table 3-2
Recommended data port uses for a Meridian Mail Options, Modular Option system

Port	Allowable uses
Node 1 SBC port 1: DP1	System Console or AdminPlus
Node 1 SBC port 2: DP2	CSL or SMDI
Node 1 RSM port 1: DP3	GAC, MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 1 RSM port 2: DP4	GAC, MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 1 RSM port 3: DP5	PMSI Link, GAC, MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 1 RSM port 4: DP6	PMSI Link, GAC, MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 2 SBC port 1: DP7	GAC, MAT, Printer, SMDI
Node 2 SBC port 2: DP8	Maintenance
Node 2 RSM port 1: DP9	GAC, MAT, Network Modem, Printer, SMDI
Node 2 RSM port 2: DP10	GAC, MAT, Network Modem, Printer, SMDI
Node 2 RSM port 3: DP11	GAC, MAT, Network Modem, Printer, SMDI
Node 2 RSM port 4: DP12	GAC, MAT, Network Modem, Printer, SMDI
Node 3 SBC port 1: DP13	GAC, MAT, Printer, ACCESS Link, SMDI
Node 3 SBC port 2: DP14	Maintenance
Node 3 RSM port 1: DP15	GAC, MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 3 RSM port 2: DP16	GAC, MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 3 RSM port 3: DP17	GAC, MAT, Network Modem, Printer, ACCESS Link, SMDI

Table 3-2
Recommended data port uses for a Meridian Mail Options, Modular Option system (Continued)

Node 3 RSM port 4: DP18	GAC, MAT, Network Modem, Printer, ACCESS Link, SMDI
Node 4 SBC port 1: DP19	GAC, MAT, Printer, SMDI
Node 4 SBC port 2: DP20	Maintenance
Node 4 RSM port 1: DP21	GAC, MAT, Network Modem, Printer, SMDI
Node 4 RSM port 2: DP22	GAC, MAT, Network Modem, Printer, SMDI
Node 4 RSM port 3: DP23	GAC, MAT, Network Modem, Printer, SMDI
Node 4 RSM port 4: DP24	GAC, MAT, Network Modem, Printer, SMDI
Node 5 SBC port 1: DP25	GAC, MAT, Printer, SMDI
Node 5 SBC port 2: DP26	Maintenance
Node 5 RSM port 1: DP27	GAC, MAT, Network Modem, Printer, SMDI
Node 5 RSM port 2: DP28	GAC, MAT, Network Modem, Printer, SMDI
Node 5 RSM port 3: DP29	GAC, MAT, Network Modem, Printer, SMDI
Node 5 RSM port 4: DP30	GAC, MAT, Network Modem, Printer, SMDI
-end-	

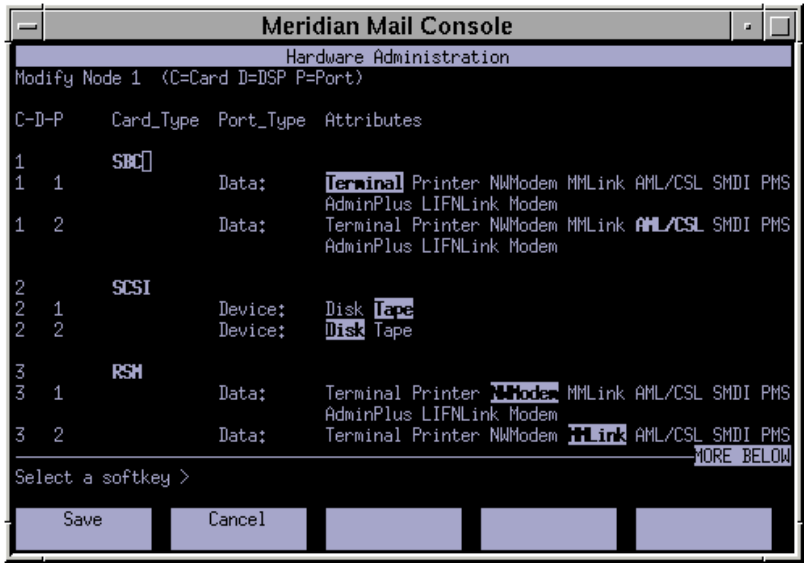
Table 3-3
Recommended data port uses for a Meridian Mail Modular Option EC system

Port	Allowable uses
Node 1 68k port 1	System Console or AdminPlus
Node 1 68k port 2	CSL
Node 1 Utility Card port 1 (modem on North American systems)	Remote Access
Node 1 Utility Card port 2	GAC, MAT, Network Modem, Printer, ACCESS Link
Node 1 Utility Card port 3	PMSI Link, GAC, MAT, Network Modem, Printer, ACCESS Link
Node 1 Utility Card port 4	PMSI Link, GAC, MAT, Network Modem, Printer, ACCESS Link
Node 2 68k port 1	GAC, MAT, Printer

Table 3-3
Recommended data port uses for a Meridian Mail Modular Option EC system (Continued)

Node 2 68k port 2	GAC, MAT, Printer
Node 3 68k port 1	GAC, MAT, Printer, ACCESS Link
Node 3 68k port 2	GAC, MAT, Printer, ACCESS Link
Node 4 68k port 1	GAC, MAT, Printer
Node 4 68k port 2	GAC, MAT, Printer
Node 5 68k port 1	GAC, MAT, Printer
Node 5 68k port 2	GAC, MAT, Printer
Second Utility Card port 1	GAC, MAT, Printer, ACCESS Link (if on node 3)
Second Utility Card port 2	GAC, MAT, Printer, ACCESS Link (if on node 3)
Second Utility Card port 3	GAC, MAT, Printer, ACCESS Link (if on node 3)
Second Utility Card port 4	GAC, MAT, Printer, ACCESS Link (if on node 3)

Figure 3-5
Modify Node window for a Meridian Mail Card Option system



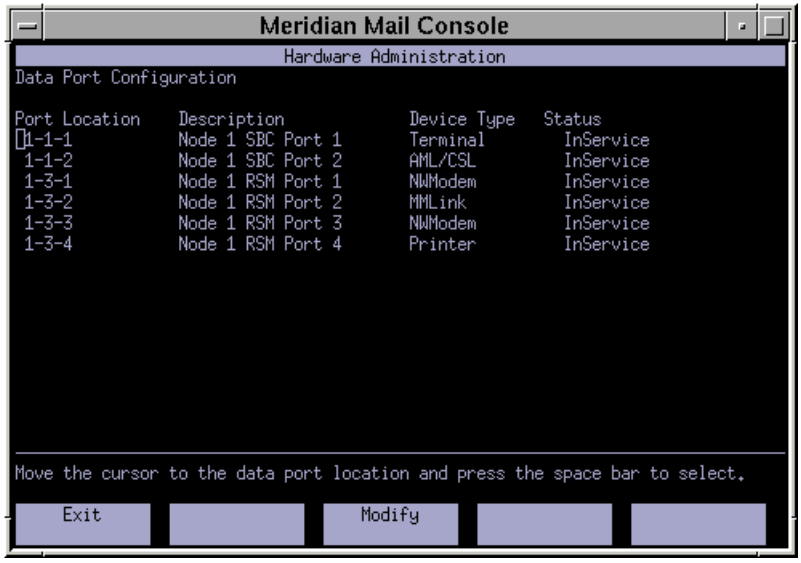
6 Move the cursor to the port which is to be used for the ACCESS link, and change the port type to MMLink.

Note: Make note of the node, card, and port number of this link. The ACCESS link cable should be cabled appropriately. See Figure 2-10 and Figure 2-11 in Chapter 2 of this manual for a cross-reference of port numbers and cables.

7 Press <F1> to save changes to the Hardware Configuration.

8 Choose Data Port Configuration from the Hardware Administration menu.

Figure 3-6
Data Port Configuration window for a Meridian Mail Card Option system

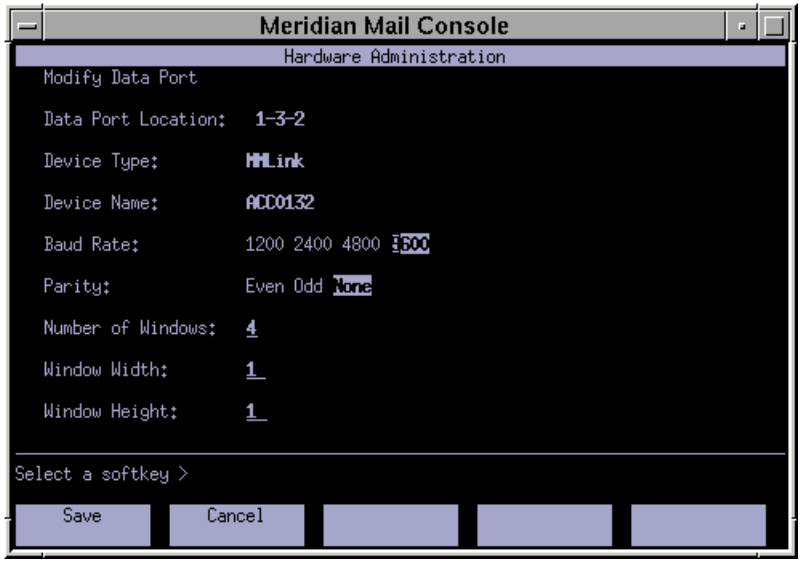


9 Move the cursor to the line containing the data port configured for an ACCESS link in step 6, and press the space bar to highlight this line.

10 Select the Modify softkey.

A window similar to the one shown in Figure 3-7 appears.

Figure 3-7
Modify Data Port window (ACCESS/MMlink)



11 Ensure that the following fields are set:

- Baud rate: 9600 (2400 for Meridian Mail Rel. 7.5)
- Number of windows: 4
- Window width: 1
- Window height: 1

The remaining fields do not need to be modified.

Notes:

1 Set the baud rate to 9600 for Meridian Mail release 8 and 9 systems.

2 Set the link speed for Meridian Mail release 10 to range from 4800 to 38400 baud.

12 Press the <Save> softkey to save the changes.

13 Reboot the Meridian Mail system.

If you made any changes to the Hardware administration windows at the tools level, either by selecting a data port for the ACCESS link or by changing the attributes of the data port, you will need to reboot the system. If you have made no changes and the port was already properly configured, a reboot is not required.

Note: If you will be cabling the Meridian Mail console for an SVGA terminal window and need to reconfigure the printer port, use Procedure 3-3 to add the printer port before you reboot the system.

Setting the link speed on the Meridian IVR AP

For each data port configured on the Meridian Mail system, you must set the baud rate on the Meridian IVR AP. You do this by editing the **lh.config** file in the **/u/ivr/vrs/exe** directory. The following is a sample **lh.config** file:

```
Device1=/dev/ttyi1a Linkspeed=19200
Device2=/dev/ttyi1b Linkspeed=9600
Device3=/dev/ttyi1c Linkspeed=38400
Device4=/dev/ttyi1d Linkspeed=19200
Device5=/dev/ttyi1e
Device6=/dev/ttyi1f
Device7=/dev/ttyi1g
Device8=/dev/ttyi1h
```

The link speed entries in this file correspond to the baud rate settings in the Meridian Mail Modify Data Port window.

Providing SEER and administrative printing

This section describes how to arrange for a dedicated printer port to be used for SEER and Administration printing. These configuration changes are necessary to route the Meridian Mail console I/O to the Meridian IVR application processor.

This procedure makes use of figures and tables described in the previous section, " Configuring the ACCESS links", on page 3-8.

Note: This procedure is valid only for Meridian Mail Release 8 or above.

Procedure 3-3
Configuring a data port on Meridian Mail for dedicated printer use

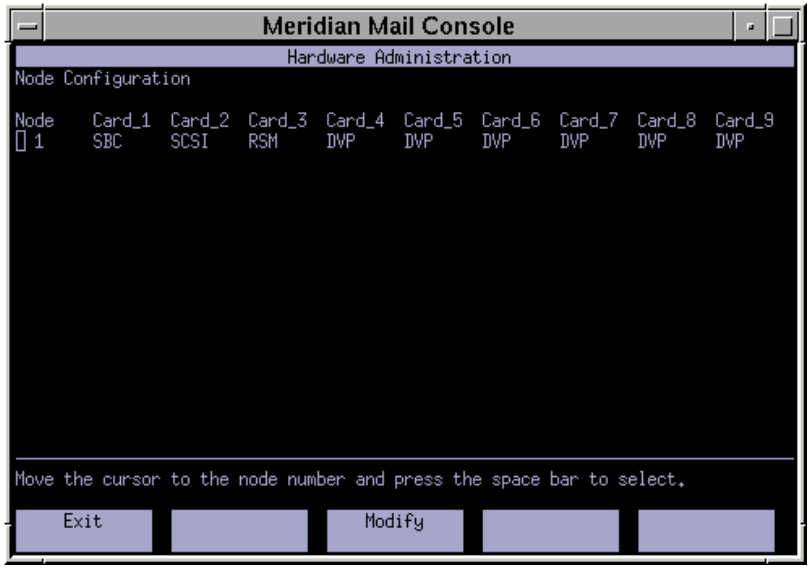
1 Log in to the tools level of Meridian Mail, and enter the tools password.

2 Select the option Modify Hardware.

3 Select option 1: Node Configuration.

A window similar to the one in Figure 3-8 appears.

Figure 3-8
Node configuration window for a Meridian Mail Card Option system



The following abbreviations identify the cards that have dataports configured on them:

SBC single board computer

SCSI small computer standard interface (disk/tape drive)

DVP voice processor card (card option only).

RSM RS-232 service module

Util utility card (EC systems)

4 Select a node on which the printer is to be configured.

Your choice will be influenced by the allowable positions for a printer (see Table 3-2 or Table 3-3) and the ports that have already been configured. Recommended procedure if possible, is to use a printer port located on Node 1.

5 You will be presented with a window similar to the ones shown in Figure 3-5. Move the cursor to the data port that is to be used for printer I/O. If the dataport is not already configured for printer use, do so by selecting PRINTER.

Notes:

1 Make note of the node, card and port number of the printer port. The printer cable should be cabled appropriately. See Figure 2-10 and Figure 2-11 in Chapter 2 of this manual for a cross-reference of port numbers and cables.

2 Make note of the name of the printer port. The default name is "PRTncp" where n = node, c =card, p = port. This will be required when you want to redirect the printer I/O to this port (step 8).

6 To save the changes to the hardware administration, press the <F1> key.

7 Log out of the Tools level, and log in to the regular Meridian Mail administration level.

8 In Meridian Mail General Administration under General Options, change the name of the printer port to the name you made note of in step 5.

9 To complete this change, you need to reboot the Meridian Mail system if you made any changes to the hardware administration windows at the Tools level.

If you are using a data port that was already configured for printer use, a reboot of the Meridian Mail system is not required.

Configuring Voice Service DNs and mailboxes

Procedure 3-4
Configuring a Voice Service DN and a mailbox

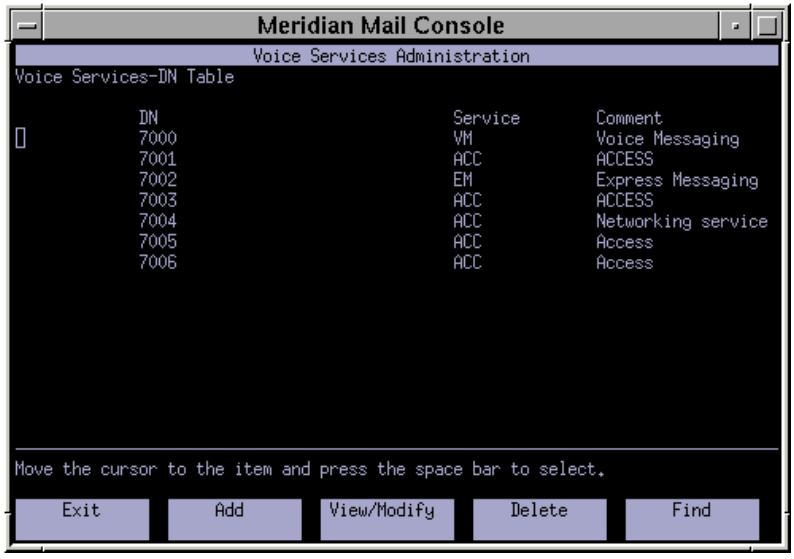
Add a new ACCESS service to the VSDN table, using the ACD DN from step 2, in "Procedure 3-1 Configuring a new Meridian Mail/Meridian IVR installation", on page 3-6.

1 Go to the Voice Services DN table.

- Add a new voice service DN.
- In the service field, type **ACC**
- In the Class field which appears, type **1**
- Enter a Revert DN number in the Revert DN field.

If Meridian IVR is down, calls arriving on the queue will then be transferred to the Revert DN.

Figure 3-9
Voice Services-DN Table



2 Add a new mailbox to the Meridian Mail system (Figure 3-1). This mailbox should have a storage limit of 90 minutes. Choose a mailbox number that does not already exist.

- Go to the User Administration window and choose Add new user.
- Select the Add Local Voice-User option.
- Add a mailbox.

Installing voice prompts from tape

Install the Meridian IVR voice prompts from your voice prompt tape into the mailbox created in the previous step.

Procedure 3-5
Adding voice prompts from tape

1 Make a user account (mailbox).

2 If necessary, disable a voice processor card to free up memory.

3 Read the prompts from tape and transfer them to the mailbox.

4 Restore the voice processor card.

Procedure 3-6
Backing up the voice prompts

1 Copy the voice prompts from Meridian Mail to tape.

2 If necessary, disable a voice processor card to free up memory.

3 Transfer the prompts from mailbox and write them to tape.

4 Restore the voice processor card.

Note: Any of the steps below that are marked with an asterisk (*) represent an item that is a soft key. Mailbox 7000 was used as an example in this chapter. If you are using another mailbox, substitute the appropriate mailbox number.

Procedure 3-7
Copying voice prompts to Meridian Mail

1 Make a User Account (mailbox).

- *__Logon__ (Type the Meridian Mail password)
- Select item **1** and press <Enter> (User Administration)
- Select item **1** and press <Enter> (Add New User)
- *Add **Local Voice User**
- Enter a new local voice user mailbox number > **7000** (any four or five digit number that is not already an existing mailbox will work)
- This mailbox should have a storage limit of 90 minutes
- *__Change User Password__
- Enter new password (it will not be displayed) > **3827** and press <Enter>
- Re-enter new password (it will not be displayed) > **3827** and press <Enter>
- *__Save__
- *__Cancel__
- *__Cancel__
- *__Cancel__
- *__Logoff__

2 If you receive an out-of-memory indication, disable a voice processor card to free up memory.

- *__Logon__ (Type the Meridian Mail password)
- Select item **5** and press <Enter> (System Status and Maintenance)
- Select item **2** and press <Enter> (Card Status)
- *Disable Card
- Enter the number of the card you want to disable > 7 and press <Enter>
- *__Exit__
- *__Exit__
- *__Logoff__

3 Read prompts from tape and transfer them to the mailbox.

- *__Logon__ (Type the tool level password)
- Enter ADMIN level password (Type the ADMIN level password)
- Insert the standard Meridian IVR voice prompt tape
- Select the Transfer Voice Prompts tool, located in either the current menu, or under the Other tools menu
- Select item **2** and press <Enter> (Read from Prompt Tape)
- *OK to start reading tape
- Destination Mailbox **7000** for the card option, or **2000** for other MM platforms
- *__Install__

Note: Wait until transfer is completed before continuing.

- *__Cancel__
- *__Exit__
- Select item **3** and press <Enter> (Logoff)

4 If you have disabled the voice processor card, restore the card.

- *__Logon__ (Type the Meridian Mail password)
- Select item **5** and press <Enter> (System Status and Maintenance)
- Select item **2** and press <Enter> (Card Status)
- *__Enable Card__
- Enter the number of the card you want to enable > 7 and press <Enter>
- *__Exit__
- *__Exit__
- *__Logoff__

Procedure 3-8
Copying voice prompts from Meridian Mail to tape

This procedure is a form of backup for customized Meridian IVR voice prompts.

1 If you receive an out-of-memory indication, disable a voice processor card to free up memory.

- *__Logon__ (Type the Meridian Mail password)
- Select item **5** and press <Enter> (System Status and Maintenance)
- Select item **2** and press <Enter> (Card Status)
- *__Disable Card__
- Enter the number of the card you want to disable > **7** and press <Enter> (16k Network Voice Processor)
- *__Exit__
- *__Exit__
- *__Logoff__

2 Transfer prompts from mailbox and write them to tape.

- *__Logon__ (Type the tool level password)
- Enter the ADMIN level password: (Type the ADMIN level password)
- Select the Transfer Voice Prompts tool, located in either the current menu, or under the Other tools menu
- Select item **1** and press <Enter> (Write Prompt Tape)
- Mailbox **7000** or **2000**
- *__View Data__

- *__Write All Files__
- Insert blank or scratch tape.

Note: Do not insert the standard Meridian IVR voice prompt tape.

- *__OK to start writing tape__

Note: Wait until transfer is completed, before continuing.

- *__Cancel__
- *__Exit__
- *__Exit__
- *__Exit__
- *Select item **3** and press <Enter> (Logoff)

3 If you have disabled the voice processor card, restore the card.

- *__Logon__ (Type the Meridian Mail password)
- Select item **5** and press <Enter> (System Status and Maintenance)
- Select item **2** and press <Enter> (Card Status)
- *__Enable Card__
- Enter the number of the card you want to enable 7 and press <Enter>
- *__Exit__
- *__Exit__
- *__Logoff__

Configuring Meridian IVR voice channels

After you have configured the Meridian 1 and Meridian Mail, you should now configure the channels on Meridian IVR.

It is assumed that the Meridian IVR system has been installed and booted. If it is configured, booting the system automatically starts the Meridian IVR software running in the background.

Note: You will need to know the following information for each channel to configure the system for the test application:

- acquisition type of each channel will be *shared*
- direction is *inbound*
- for each channel, you need to know the mailbox and password (these are the same as those added to the Meridian Mail system in step 2, "Procedure 3-4 Configuring a Voice Service DN and a mailbox", on page 3-19.)
- class number is 1

Accessing the System Configuration window

Access the System Configuration window from the Application Processor console. The following procedures show you how to use the console.

Figure 3-10
Meridian IVR login window

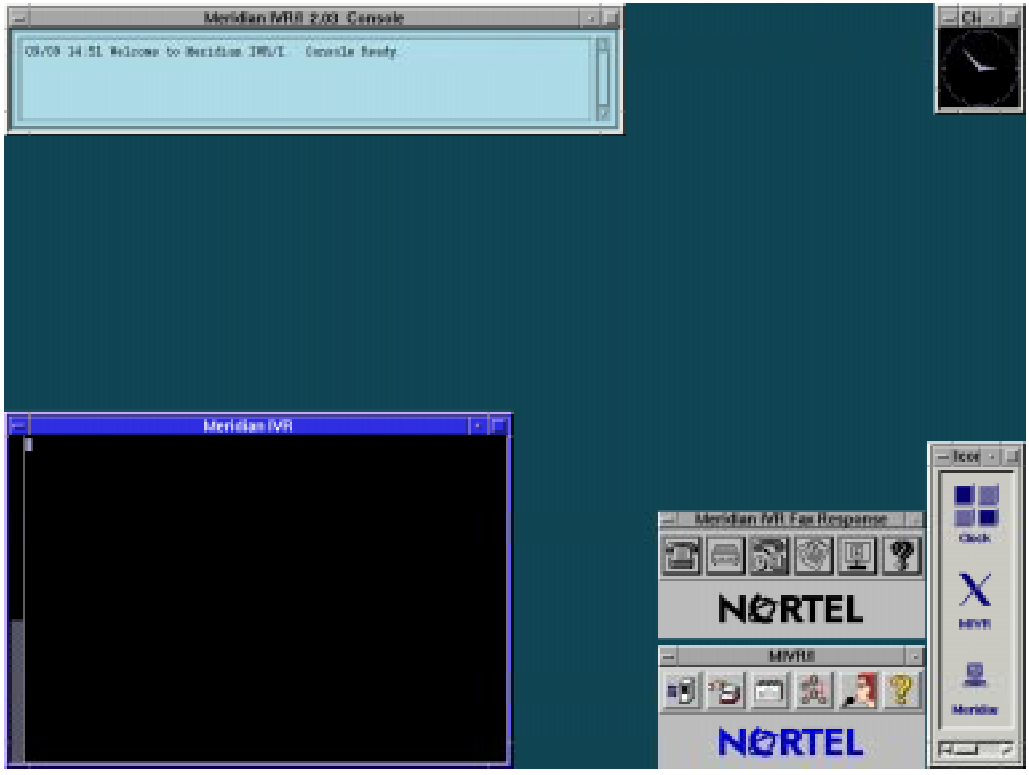
Procedure 3-9
Accessing the System Configuration window

1 To log into the system, type **vad** at the console Login prompt, and press <Enter>.

2 Type **vad1**, and press <Enter>.

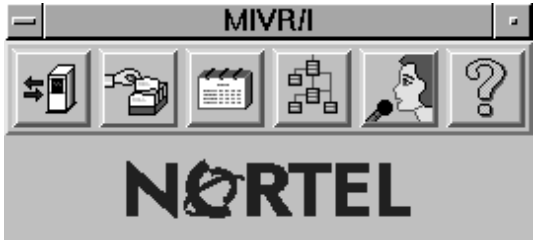
You are now logged in to the Meridian IVR system. See Figure 3-11.

Figure 3-11
Meridian IVR MMI desktop for vad or root accounts



On the Meridian IVR GUI desktop, a series of smaller “windows” are displayed. Use the Meridian IVR main menu, shown in Figure 3-12, to create, run, and manage Meridian IVR applications.

Figure 3-12
Meridian IVR main menu

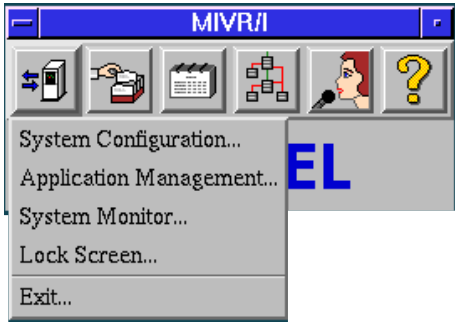


3 Each of the menu bar options shown in Figure 3-12 displays a pull-down menu. You can access the System Administration pull-down menu option by pointing and clicking the left mouse button on the Application Processor icon.

All the channel and system configuration is performed in windows available through the System Administration icon.

4 To set up or modify your Meridian IVR system configuration, point to the System Administration icon and click on the left mouse button to display the pull-down menu (Figure 3-13).

Figure 3-13
Accessing the System Configuration window



5 From the menu, select the System Configuration option to display the System Configuration window (Figure 3-14).

Setting the number of prompts on the system

The System Configuration window is where you configure the number of prompts for your Meridian IVR system. The Number of Meridian IVR Systems field must be set to a default value of 1.

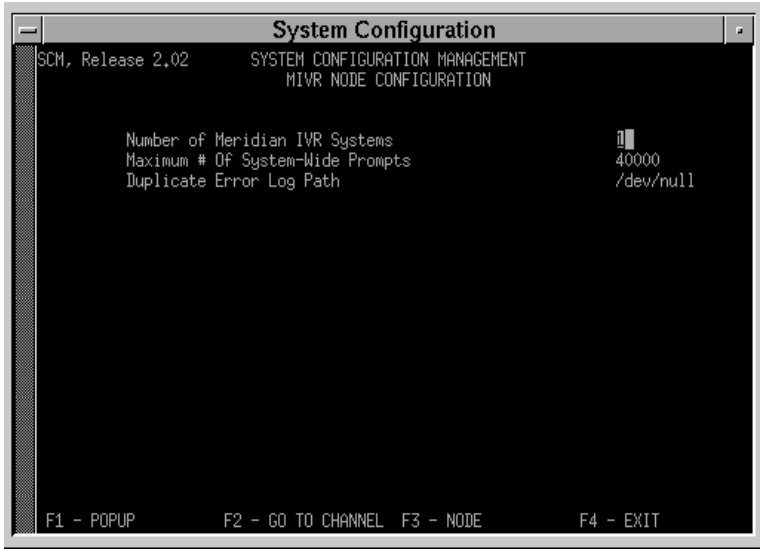
Follow Procedure 3-10 to set the number of prompts on the system.

Procedure 3-10
Setting the number of prompts

1 To set the number of prompts on the system, select the System Configuration option from the System Administration menu.

The System Configuration window is displayed (Figure 3-14).

Figure 3-14
System Configuration window



The various fields are explained below.

Number of Meridian IVR Systems This identifies the number of Meridian IVR systems. This field is set to the default value of 1, which is the only valid value. Do not modify this field.

Maximum # of System-Wide Prompts This indicates the number of prompts that will be stored on the system for all applications, present and future. The default value is 2000, and the range of values is 1 to 55296. Set the maximum number of prompts to 6000 for a typical installation.

ATTENTION!

When you choose the values for the Maximum number of System-Wide Prompts parameter, you have determined the boundaries for your prompt and message numbers (also see *Meridian IVR Application Development Guide* (NTP 555–9001–310), which list the Meridian IVR prompts).

Once you have begun using Meridian IVR, use caution in changing these boundaries. For example, if you enlarge the storage area for prompts, you may prevent access to some stored Meridian Mail messages in the Meridian IVR mailboxes.

2 To edit the fields on this window, use the arrow keys, the <Tab> key, and the <Enter> key to move the cursor to the field you want to change, and type a new value in the field.

If you make a mistake in typing, you can use the <Backspace> key to delete characters.

3 When you have finished typing the new value, press <Enter> to make Meridian IVR accept the new value. The value will be checked to see if it is valid. If your entry is invalid, the terminal will beep and display a message telling you so. If the entry is valid, the cursor will advance to the next field.

The <Escape> key can be used to return to the configuration window without exiting.

4 At this point you can press <F4> to exit the System Configuration window. The Save changes? pop-up window appears. If you wish to save the changes you have made, press <Enter> to accept the Yes default or press <F3> (Yes). If you do not wish to save the changes, use the arrow keys to highlight No and press <Enter>, or press <F4> (No).

Defining the node type

Procedure 3-11
Defining the node type

1 From the System Configuration window, press <F3> to display the Node Type Configuration window. Ensure that the cursor is positioned on Node 1.

2 Press <F1> to display the pop-up window and set to the default value of MERIDIAN.

Figure 3-15
Node type configuration window

Defining node characteristics

Each node has several fields that have to be defined. These include the maximum number of channels, total channels configured, and node name.

Procedure 3-12
Define the node characteristics

1 From the Node Type Configuration window, ensure that the cursor is positioned in Node 1, and press <F3> for Go to Node. The Node Configuration window is displayed for Node 1.

The various fields are described in the following:

Maximum number of channels This identifies the number of channels that have been purchased for your system.

Total channels configured This indicates the number of channels that are configured specifically for Meridian IVR.

This implies a range of logical Meridian IVR channels starting with 0. For example if you enter a value of 12, you must configure logical channels in the range of 0–11. Meridian IVR will attempt to register all ACTIVE status logical channels in the implicit range.

Notes:

1 This field must match the number of channels that you have configured in order for your applications to run properly.

2 This field is updated by the system once you have configured the channels.

Valid values 1–96 Dependent on the maximum number of channels. The default value is 0.

Note: The total number of ACTIVE logical channels of DEDICATED acquisition type should not exceed the number of Meridian Mail voice channels that have been designated for ACCESS service type. Otherwise the ACCESS link may become congested with excess registration requests that cannot be granted by Meridian Mail.

Node name (up to 14 characters) This specifies the user-defined name of the local host node. (The default value is None and the valid value can be any alphanumeric character up to 14 characters.)

Once you enter your edits, select a function key:

<F2> to go to any channel in the system

<F4> to return to the System Configuration window

Configuring channels

For each voice channel configured for Meridian IVR, you must define operational characteristics.

Procedure 3-13
Defining the operational characteristics of the voice channel

1 Press <F2- GO TO CHANNEL>, from either the System Configuration window or the Node Type Configuration window.

Meridian IVR displays the following prompt at the bottom of the window:

```
Enter CHANNEL OR NODE:CHANNEL
(Number May Be Ranges, for example, 1-2:16-64): 1:0
```

Note: Disregard the format and range information shown on the window.

2 Enter a channel number or range of channel numbers, and press <Enter>.

For example, 0–11 indicates that you will be configuring the characteristics of all logical channels in the range 0 through 11.

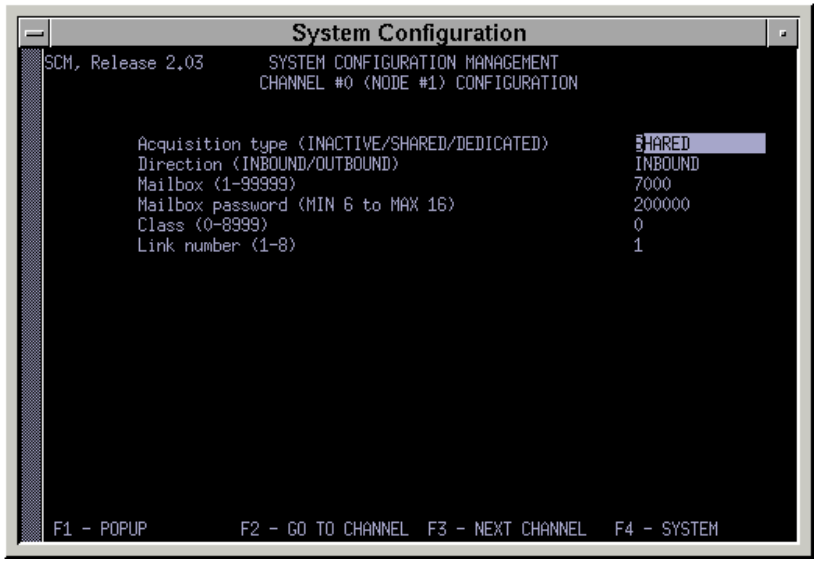
When you specify a range of logical channels, all channels are configured identically according to the values defaulted or changed in a single Channel Configuration window.

When you enter your channel value and press <Enter>, Meridian IVR displays the Channel Configuration window as illustrated in Figure 3-16. Notice that the window identifies the channel number first, followed by the node number. Node 1 is the only valid node number.

Note: Ranges of channels can be configured. For SHARED acquisition type, consecutive logical channels that share the same class may be configured all at once by specifying the range of logical channels.

For DEDICATED acquisition type, the status, mailbox and password may be configured first by specifying a range then the class can be set individually for each logical channel by using <F3 NEXT CHANNEL>.

Figure 3-16
Channel configuration window



3 Press <F1> to display the pop-up window listing the values available for each of the first three fields. Select the appropriate value using the arrow keys, and then press <Enter>. Press <Escape> to cancel the pop-up window. Enter the mailbox number and password by using the arrow keys to move to the field and the keypad to enter the numbers.

The valid values for each field are explained below, together with a description of the value required for installation:

Status This field identifies whether the channel is active or inactive. The default value is INACTIVE, and the active values are SHARED and DEDICATED.

Acquisition type This identifies whether the channel is to be used by Meridian IVR only or is to be shared with other Meridian Mail applications (such as voice messaging or voice menus). Up to 24 channels may be used in shared mode. The default value is DEDICATED, and the valid values are SHARED and DEDICATED. Set the value to SHARED for installation testing.

Note: DEDICATED Acquisition type should be used only where Meridian Mail voice channels will be dedicated to Meridian IVR. SHARED Acquisition type may be used where Meridian Mail voice channels will be shared between Meridian IVR and other Meridian Mail voice services. It is also used where inbound Meridian IVR applications need to play previously recorded voice messages, or where inbound applications frequently need to access new (or changed) voice prompt segments, even where Meridian Mail voice channels may not be shared.

Direction Each channel must be designated as either inbound or outbound only. Incoming phone calls can be received on inbound channels, whereas outgoing phone calls are made on outbound channels. Outbound channels always function as dedicated acquisition type. If an application is to perform outdialing, there must be at least one additional channel configured as outbound to run the application. The default value is INBOUND, and the valid values are INBOUND and OUTBOUND. Leave the value at INBOUND for installation testing.

Mailbox This specifies the mailbox to be used by the channel for playing voice prompts and recording messages. The default value is None, and the valid values are 1–999999 (minimum of six digits). Specify the mailbox number created on Meridian Mail.

Note: For systems with Meridian Mail Release 7.5, if Meridian IVR uses more than 24 voice channels, you should allocate the channels between two different mailboxes such that no more than 24 channels are configured on any one mailbox.

Mailbox password This field specifies the password that permits access to the mailbox associated with this channel. The default value is None, and the valid values are 1–999999 (minimum of six digits). Specify a password for your mailbox.

Note: For security reasons, do not make your mailbox password the same as your mailbox number. Use a different number to make your system secure.

Class The default value is equal to the logical channel number and the valid values are 0–8999. Set class to 1 on all configured channels for installation testing.

For DEDICATED acquisition type, the class can connect a logical channel with a particular Meridian Mail voice channel.

For SHARED acquisition type, the class connects a group of logical channels with a Meridian Mail voice service DN (VSDN) of the same class.

4 When you have finished configuration changes for this channel, press one of the following function keys:

<F2> To go to any other channel in the system

<F3> To go to the next channel on the current node

<F4> To return to the System Configuration window

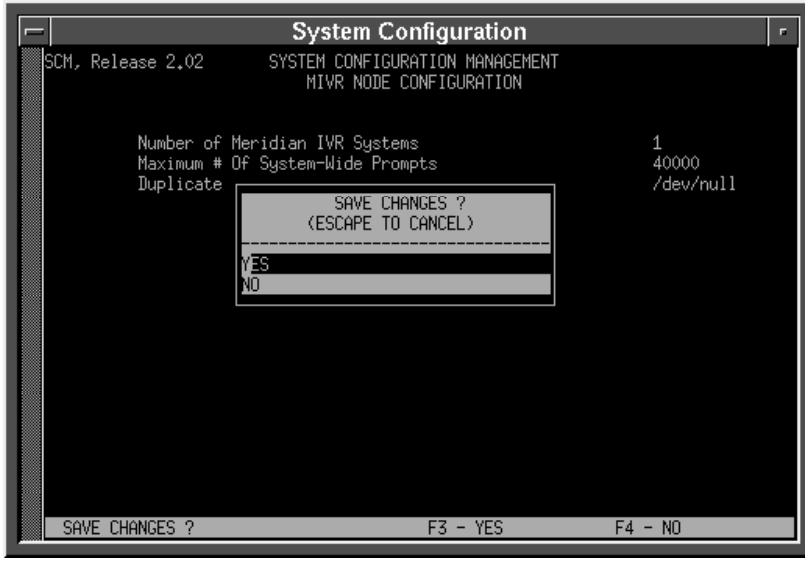
Saving changes

After you have configured your channels, you need to save your changes and exit the System Configuration Management window.

Procedure 3-14
Saving your changes

1 To save any changes that you make to the system configuration, from the System Configuration window, press <F4> to exit. Meridian IVR displays the Save Changes pop-up window (Figure 3-17).

Figure 3-17
Save Changes pop-up window



2 If you press <Enter> to accept the default YES or press <F3>, your configuration changes are saved. If you select NO and press <Enter>, or press <F4>, the changes you made in this session are not saved. In either case, you exit System Configuration and the Meridian IVR interface is redisplayed.

If you decide not to exit System Configuration, you can press <Escape> to abandon the Save changes pop-up menu.

Synchronizing date and time

If you need to synchronize date and time with Meridian Mail, follow the procedure described below.

ATTENTION!

If you complete Procedure 3-15, it will result in a new configuration taking effect.

If you do not need to synchronize date and time, then go to Procedure 3-16 and restart Meridian IVR to accept the new configuration.

Procedure 3-15
Synchronizing the date and time

1 Log in as the root user.

Make sure that you have a working shared channel on Meridian Mail and Meridian IVR.

2 Type **mmtime** and press <Enter>.

The following messages are displayed:

```
*************************************************************
*     MMTIME process:                                       *
*                                                           *
*   Synchronizing Workstation date & time with Meridian Mail*
*                                                           *
*   Notes: -Timezone should be set manually using 'Setup'.  *
*          -Meridian ACCESS link must be capable of operating.*
*          -There should be at least 1 idle Meridian Mail   *
*           voice channel with a service type of 'ALL'.     *
*************************************************************
```

Restarting with the new configuration

From now on, when you start the application module, if it is correctly configured, Meridian IVR is automatically started in the background. Once you have configured the node and channels (or whenever you modify the configuration of even a single channel), you must restart Meridian IVR for the configuration changes to take effect. Otherwise, the previous settings will remain in effect. When restarting Meridian IVR, execute MIVR reset.

Procedure 3-16
Stop and restart Meridian IVR

1 Click the right mouse button on the display background to show a menu of options and select MIVR reset.

A pop-up window is displayed asking you to confirm if you want to reset Meridian IVR.

2 Click OK to confirm.

The Meridian IVR Console window displays messages as the Meridian IVR software is stopped, restarted and becomes fully operational again. It takes several minutes to restart the software.

While Meridian IVR software is restarting, calls are transferred to the Meridian IVR (ACCESS) Revert DN, providing that the Revert DN is configured in the VSDN table.

Chapter 4: Running the test application

Northern Telecom (Nortel) supplies a test application with your new system. Check the system with the test application to verify that your system is fully functional.

This application is called testivr.vpf, and it is found in the /u/ivr/apps directory.

ATTENTION!

If you are also installing Meridian IVR with the fax option, you will use a test application called faxtest.vpf to test the fax feature. Procedures for doing this are described in the *Meridian IVR Fax Application Guide* (NTP 555-9001-350).

How it works

To make sure that your installation is functional, you will run the test application and confirm that all calls receive IVR treatment on all configured Meridian IVR logical channels.

The procedures for doing this are the following:

1 Access Meridian IVR.

2 Start Meridian IVR.

3 Load the test application.

4 Assign channels.

5 Start the application.

6 Call the test application.

7 Stop the test application.

8 Unload the test application.

9 Exit Application Management.

10 Log out of Meridian IVR.

Access Meridian IVR

Whenever you boot or reset the Application Processor, the system automatically downloads the appropriate display settings to the Application Processor to support Meridian IVR and displays the SCO login window.

The Application Processor must have been booted initially for the login window to appear. If it is not displayed, please refer to “Restarting with the new configuration” on page 3-38.

Figure 4-1 shows the Meridian IVR login window after the Meridian IVR system has been powered up.

Figure 4-1
Login window

It is assumed that Meridian IVR has been installed and booted. Once the Meridian IVR system configuration has been performed and the system booted, the Meridian IVR software starts running in the background.

Procedure 4-1
Logging into the Meridian IVR system

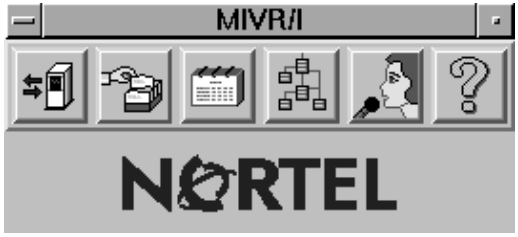
1 To log into the system, type **admin** at the Login prompt and press <Enter>.

2 Type **admin1**, and press <Enter>.

You are now logged in to the system. The Meridian IVR GUI interface is displayed.

The Meridian IVR GUI interface displays a series of smaller “windows”. The Meridian IVR main menu, shown below, is the interface used to create, run, and manage Meridian IVR applications. If you do not know what the icons mean, refer to the *Meridian IVR System Administration Guide* (NTP 555-9001-300) for an explanation.

Figure 4-2
Meridian IVR main menu



Starting Meridian IVR

When you log on to the Meridian IVR system, Meridian IVR should already be running. If it is not, you need to execute the following start-up routine:

Procedure 4-2
Starting Meridian IVR

1 Position the cursor on the backdrop (not a window). Using the right mouse button, select MIVR start.

After a few minutes, from the Meridian IVR console window, the system displays the message:

```
Status: Meridian IVR/I startup complete
```

Starting the system monitor

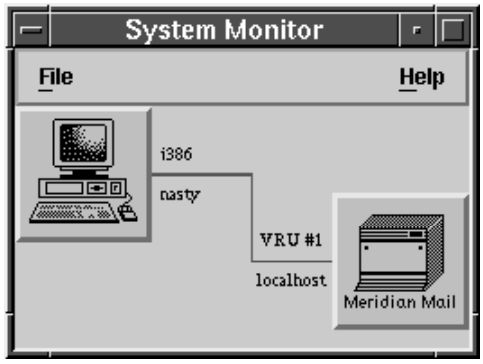
The system monitor will start successfully only if the system configuration has been performed, the Node Type has been set to Meridian, and the Meridian IVR system has been restarted.

Procedure 4-3
Starting the system monitor

1 Access the System Administration pull-down menu by pointing and clicking the left mouse button on the server icon on the Meridian IVR main menu.

The following figure shows the system monitor, and the system monitor fields are defined below.

Figure 4-3
System monitor



Menu bar Contains File and Help (Meridian IVR release) information

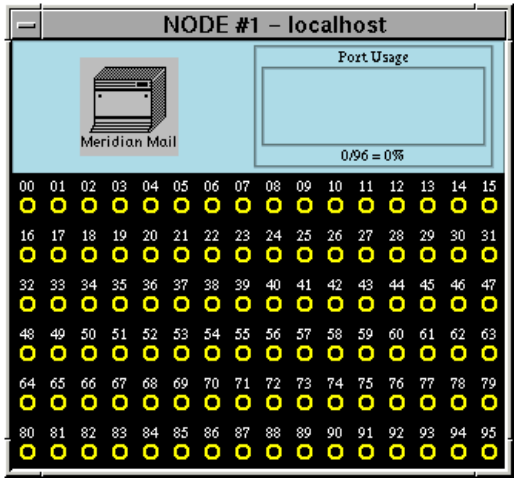
Application Processor Represents the Meridian IVR Application Processor

Node identifier Identifies the node by ID number and name. The system monitor figure specifies that the Meridian IVR system includes a node designated as “VRU#1” and named “localhost”.

Node toggle button Press this button once to display a pop-up window graphically showing the activity on the node's voice channels in real time. The status lights indicate whether a channel is idle, active or unavailable for incoming calls (Figure 4-4). Pressing the toggle button again closes the pop-up window.

2 Click on the node toggle button. This opens the Node Port Usage window, shown below.

Figure 4-4
System monitor node status



The node pop-up window displays channel activity from which you can monitor activity on each of the node's voice channels.

Node icon Identifies the node type. In Figure 4-4, the node is a Meridian Mail system.

Channel board Displays icons that simulate a board of lights indicating the current status of each voice channel on the node

No light Designates an unavailable channel; the channel is either inactive or not configured in the system. Clicking on it will show the channel as busied out. Unconfigured will show it as unavailable.

Yellow ring The yellow ring indicates that an application has been started on the channel and is available to accept an inbound call (idle inbound).

Grey ring The gray ring indicates that the channel is reserved for outbound applications (idle outbound).

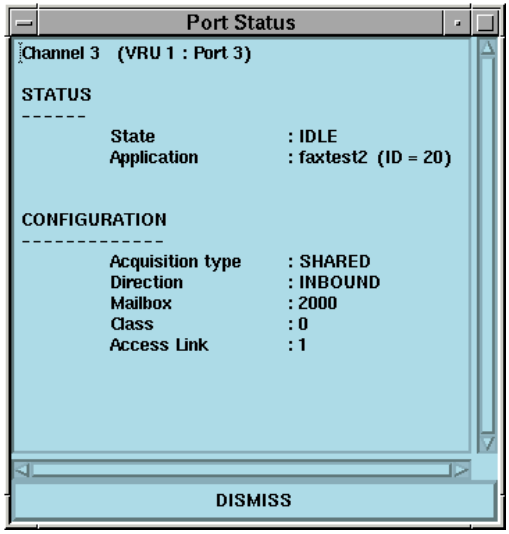
Active light Indicates that the channel is actively processing a call. An active inbound icon is shown by a solid yellow circle (active inbound) and an active outbound, by a gray ring with yellow center (active outbound).

Busied out light Logical channels are busied out if they are configured but are not currently set to run against an application, or if the application has been stopped, or if the ACCESS link has not come up. Solid gray indicates busied out (no applications).

As you view the node pop-up window, the lights displayed will change to reflect the activity on the node. You can also view more detailed information about a specific logical channel including which cell is executing in an application.

Use the left mouse button to click on the logical channel you want to view and the system monitor will display the Port Status pop-up window (Figure 4-5). The port status is updated only when you click on the port.

Figure 4-5
Port Status pop-up window



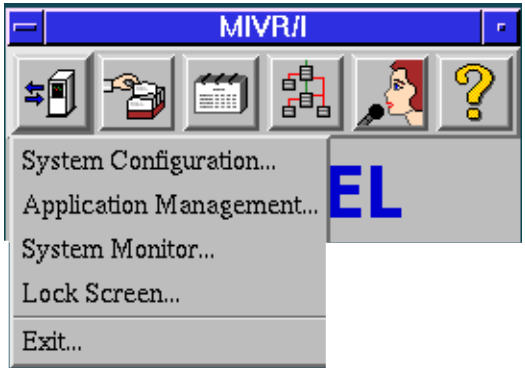
Note: This window is not dynamic. It is updated whenever you click on the port. (The window can be moved, allowing you to view both port status and channel board simultaneously.)

3 Use the left mouse button to close the Port Status window by clicking on the DISMISS bar. To exit the node pop-up window, click the left mouse button on the node toggle button.

Loading an application

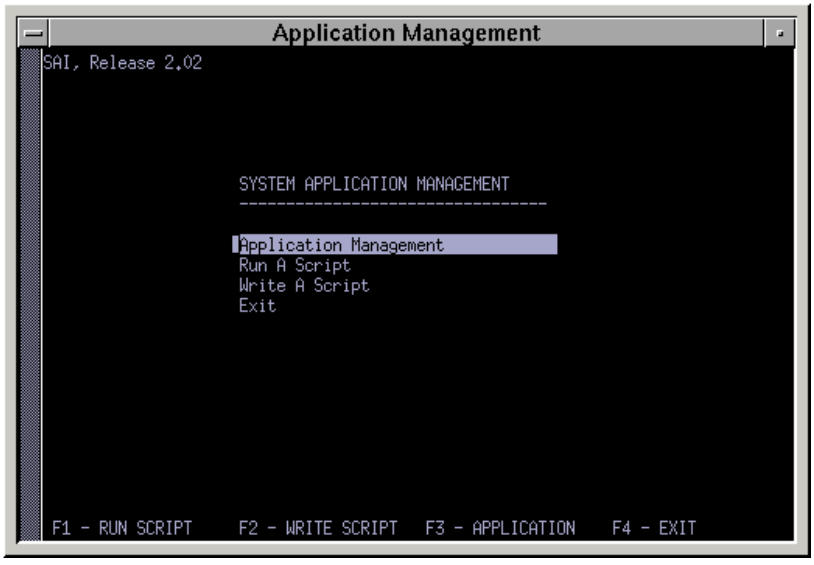
Open the Application Management menu by selecting the Application Management option from the System Administration menu. Meridian IVR displays the Application Management menu, as illustrated in Figure 4-7.

Figure 4-6
Accessing Application Management window



Note: The system monitor will start successfully only if the system configuration has been performed, the Node Type has been set to MERIDIAN, and the Meridian IVR system has been restarted.

Figure 4-7
Application Management menu



Use the arrow keys to move the cursor. The keys work as follows:

<Up Arrow> Moves the cursor up one line.

<Down Arrow> Moves the cursor down one line.

When you press <Enter>, the highlighted item at the cursor will be selected. Function keys can also be used as a shortcut for selecting some menu items. For example:

<F3> selects Application Management

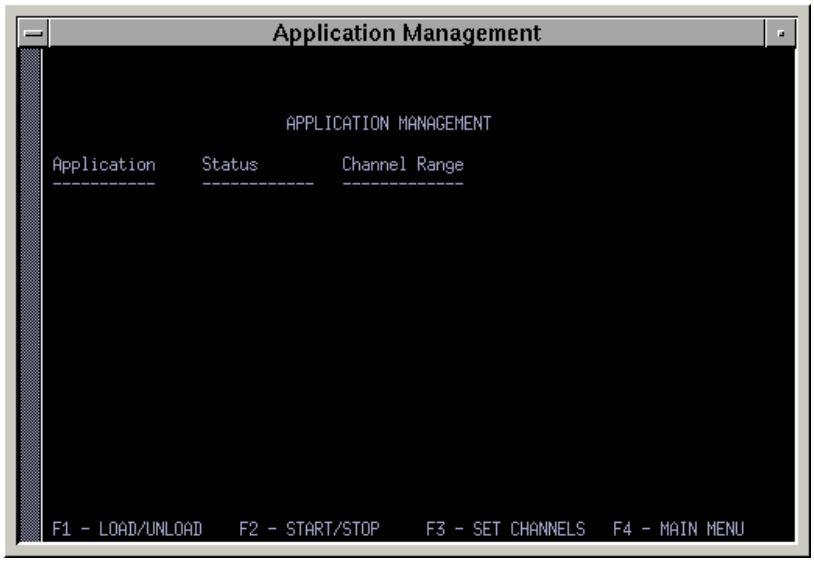
<F4> selects Exit

After loading the test application, you will need to set one or more channels on which the application will run. An application cannot process telephone calls until it has been assigned to a channel and started.

Procedure 4-4
Loading an application

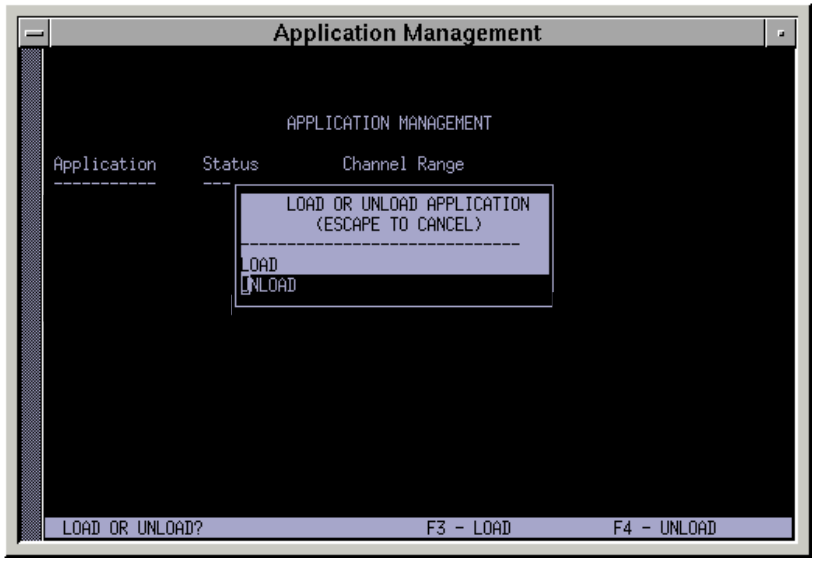
1 From the Meridian IVR Application Management menu, press <F3> for Application or move the cursor to Application Management and press <Enter>. You then see the Application Management window, as shown in Figure 4-8.

Figure 4-8
Application Management window



2 Press <F1> for Load/Unload. You then see the pop-up menu shown in Figure 4-9.

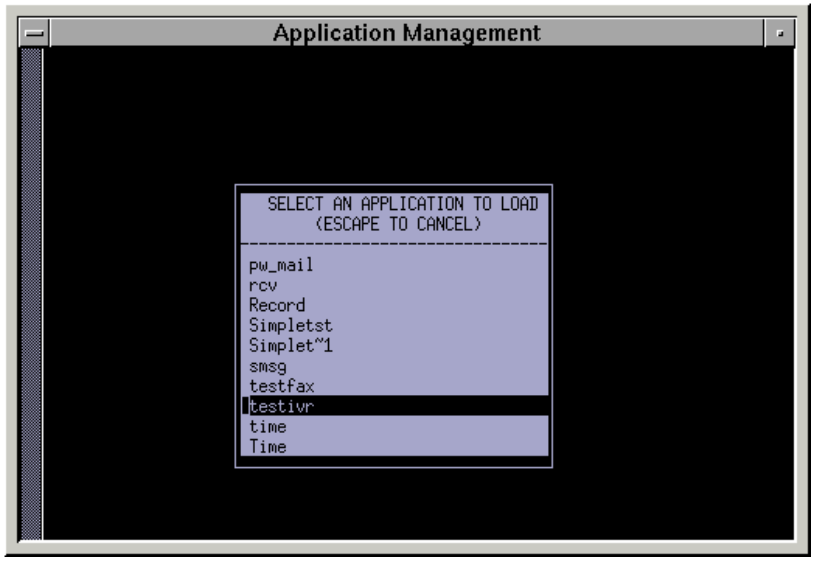
Figure 4-9
Load or unload application pop-up menu



3 Press <F3>, or move the cursor to Load and press <Enter>.

4 The system displays the pop-up menu shown in Figure 4-10, revealing a list of all applications in the apps subdirectory.

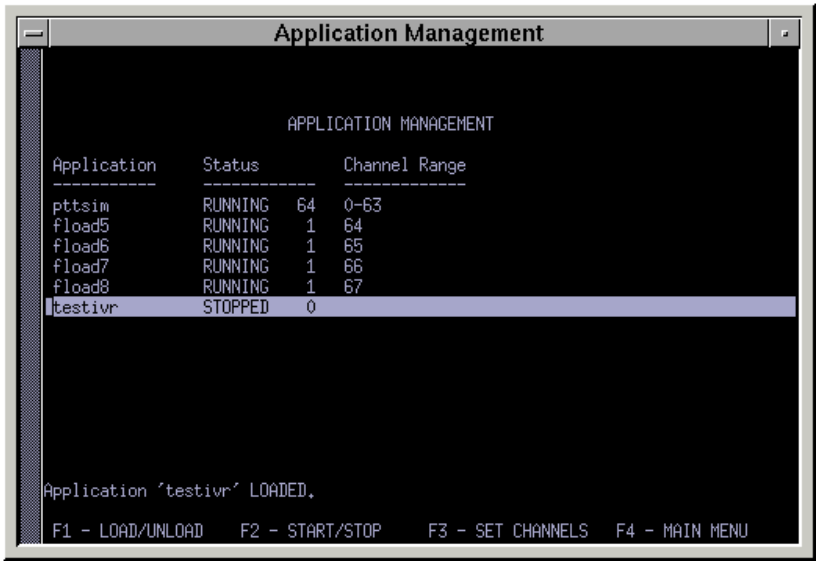
Figure 4-10
Select an application to load pop-up menu



5 Move the cursor so that it highlights the test application called testivr, and then press <Enter>.

The Application Management window reappears. Refer to Figure 4-11. The word STOPPED appears in the Status column to signify that the application is stopped. After the word STOPPED, the number 0 is displayed to indicate that the application logical channels have not been assigned a range of channels on which to run.

Figure 4-11
Loaded application



6 The following message appears:

```
Application 'testivr' LOADED.
```

Assigning channels

Once the test application has been loaded, you can assign the application to one or more channels

Procedure 4-5
Assigning channels to an application

1 Press <F3> for Set Channels. You will see the following prompt:

```
Enter The Channel Range:
```

2 Type a channel range and press <Enter>.

ATTENTION!

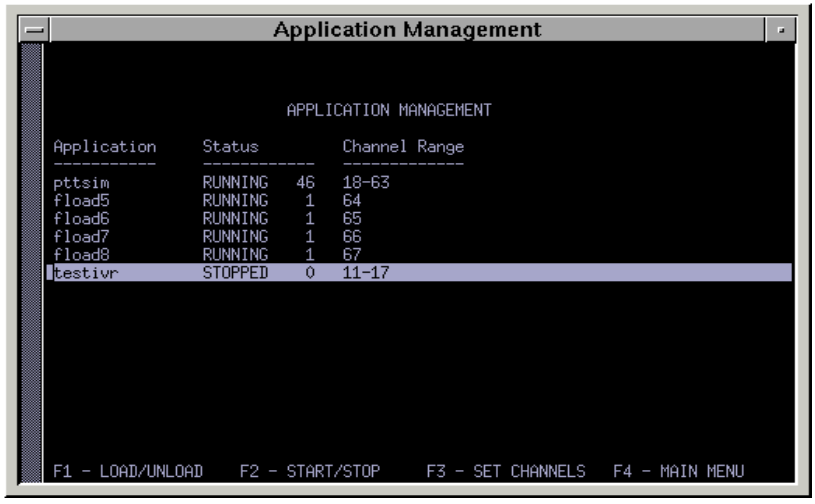
Entering nothing sets the channel range to NONE.

You will not be explicitly prompted to enter a value in the channel range field. If no value is entered then no channels will be assigned to the application.

For example, in Figure 4-12 the channel range that has been selected is 11–17.

3 The channels you choose appear in the Channel Range column of the Application Management window. Notice that the Status column still displays STOPPED to indicate that the application is not running on any channels yet.

Figure 4-12
Application assigned to channels



Starting the application

After you load the application and assign it to channels, you can start it.

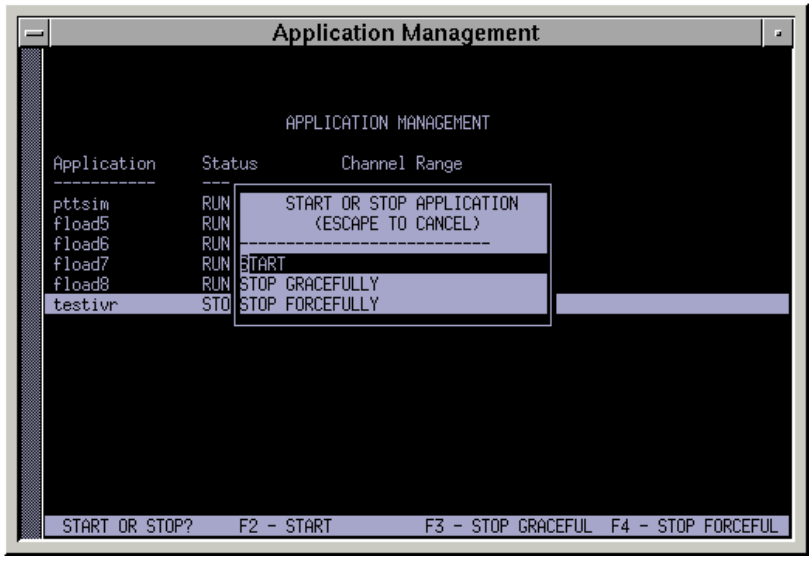
Procedure 4-6
Starting the application

1 If you have not already loaded the application, follow Procedure 4-5 on page 4-13 to load it.

2 Highlight the name of the application you want to start, then press <F2>.

The Start or Stop Application pop-up menu appears as shown in Figure 4-13.

Figure 4-13
Start or Stop Application pop-up menu



3 When you select <F2> for START, the Status column of the application's status changes from stopped to started.

The System Monitor channel board displays yellow rings for all of the Meridian IVR channels that were configured.

Placing a call to the test application

Procedure 4-7
Testing the application

1 Place a call to the Meridian IVR DN that was configured.

The System Monitor VRU #1 window displays a solid yellow circle to indicate that the call went through on that channel.

You will then hear the IVR test application greeting: “Welcome to IVR test applications”.

2 Press 1 for English prompts or 2 for French prompts.

3 Press 1 to hear the system time.

Meridian IVR will say the current system time:

“Three forty-seven p.m.”.

4 Press 1 to go to the previous menu and perform more tests, or press 2 to end the call.

5 Call every channel and repeat the same procedure.

If your test is successful, your system is now ready to be configured for the customer requirement. If not, refer to the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500) for troubleshooting procedures.

Stopping the test application

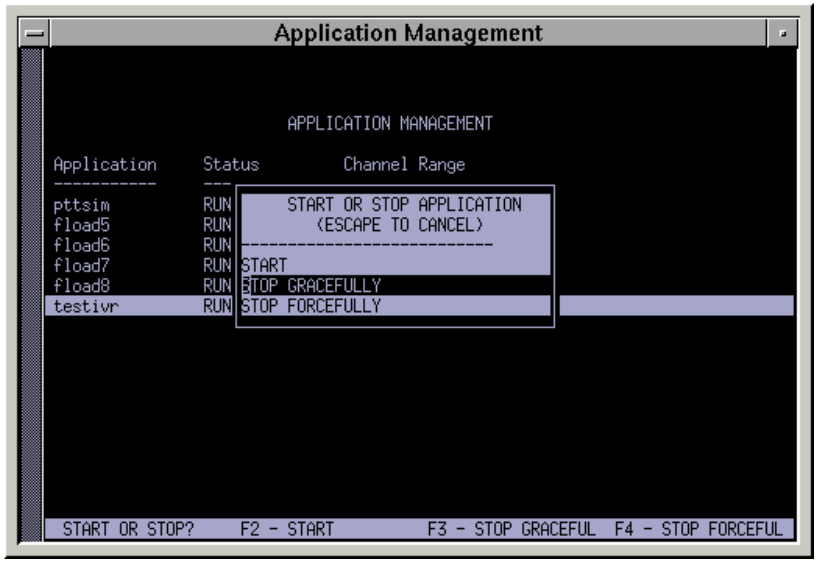
Now that you have successfully verified your installation, you can stop the application and exit the Application management menu window.

Procedure 4-8
Stopping the application

1 From the Meridian IVR Application Management menu, press <F3> for Application, or move the cursor to Application Management and press <Enter> to display the Application Management window.

2 Move the cursor until you highlight the test application. Press <F2> to display the Start or Stop Application pop-up menu (Figure 4-14).

Figure 4-14
Start or Stop Application menu



3 Press <F3> for STOP GRACEFULLY.

Unloading the application

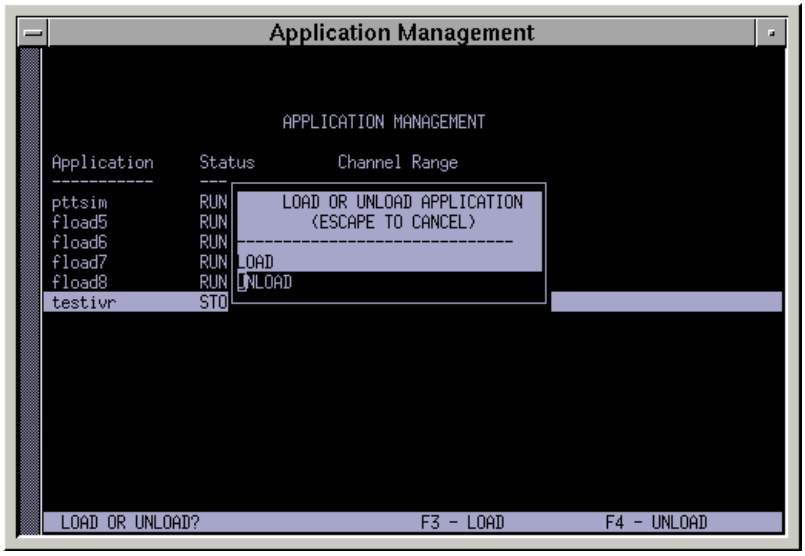
Ensure that the application is not running.

Procedure 4-9
Unloading the application

1 Press <F1> for Load/Unload.

Meridian IVR displays the pop-up menu shown in Figure 4-15.

Figure 4-15
Load or unload application pop-up menu



2 Press <F4> for Unload, or move the cursor to Unload and press <Enter>.

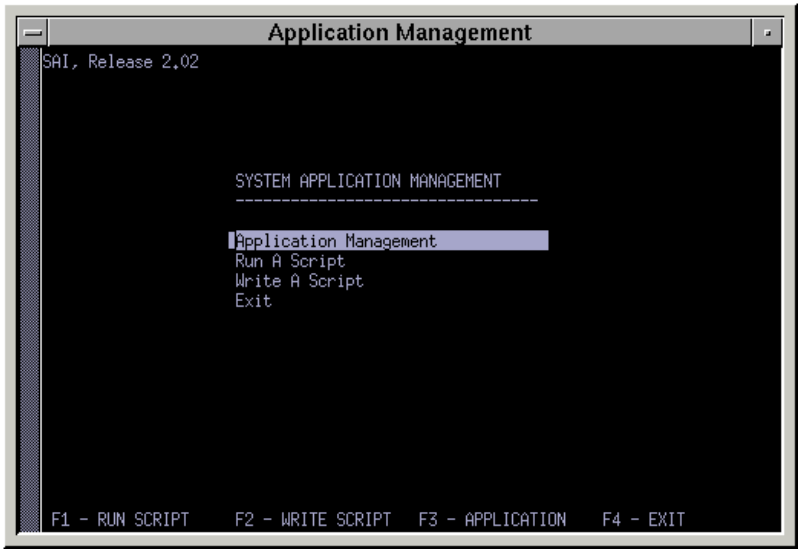
Meridian IVR redisplays the Application Management window without the test application included in the list, indicating that the application is unloaded.

Exiting Application Management

Procedure 4-10
Exit application management

1 To exit Application Management, access the Application Management main menu, and select F4 - Exit. The Meridian IVR interface is redisplayed.

Figure 4-16
Application Management menu

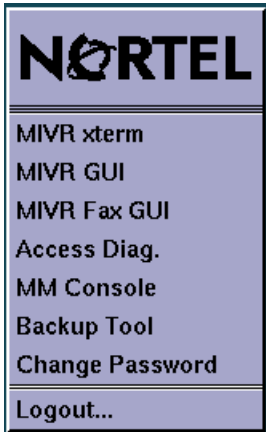


Logging Out of Meridian IVR

Procedure 4-11
Logging out of Meridian IVR

1 Hold down the left mouse button while the cursor is in the root window. The following window appears as shown in Figure 4-17.

Figure 4-17
Meridian IVR menu—left mouse button



2 Select Logout.

A pop-up window appears asking you to confirm that it is okay to log out.

3 Click on the OK option to log out.

You are now logged out of the system.

Chapter 5: Configuring Meridian IVR for customer applications

Overview

This chapter provides sample configuration models for Meridian IVR channel assignment. These sample models are provided as guidelines so that the reader can better understand the various configurations.

Shared IVR channel configuration (single application)

Figures 5-1 and 5-2 illustrate a Meridian Mail system with 12 voice channels, which is connected to a Meridian IVR system with 12 logical channels. The 12 voice channels are configured for ALL services. This allows dynamic use of the channels based on the voice service defined in the Meridian Mail VSDN table for the dialed DN. Calls directed to DN 3600 will be answered by Meridian Mail. Likewise, calls which are directed to DN 3000 will be given the IVR treatment for the running Meridian IVR application assigned to an IVR logical channel bearing a CLASS of 1.

The characteristics of this configuration example include the following:

- Meridian Mail voice channels are configured for ALL services.
- All voice channels share the same queue.
- Acquisition type on the Meridian IVR is SHARED for all logical channels.
- The number of Meridian Mail voice channels equals the number of Meridian IVR logical channels.

There are a number of advantages and limitations associated with this type of configuration.

Advantages

- Maximum efficiency is obtained with regard to Meridian Mail channel utilization
- This is the simplest configuration to install and test at a customer site
- Voice prompt modifications are automatically applied on the next call after saving changes
- Recorded messages in the IVR mailbox are immediately available for the next call after recording

Limitations

- Incoming Meridian IVR calls may incur excessive delay in the queue if all Meridian Mail voice channels are busy because of high Voice Messaging traffic
- Associating a Meridian Mail voice channel with a Meridian IVR logical channel is difficult because of random logical channel assignments for each incoming IVR call
- The Meridian Mail system limits configuration to a maximum of 24 shared Meridian IVR logical channels if you are using a 9600 baud ACCESS link

Please refer to Figure 5-10, "8 Dedicated Voice Mail and 12 Shared Channels," on page 5-13 for an example of available Meridian Mail voice channels exceeding the amount of Meridian IVR logical channels.

Figure 5-1
Meridian Mail/Meridian IVR configuration for the single-application shared model

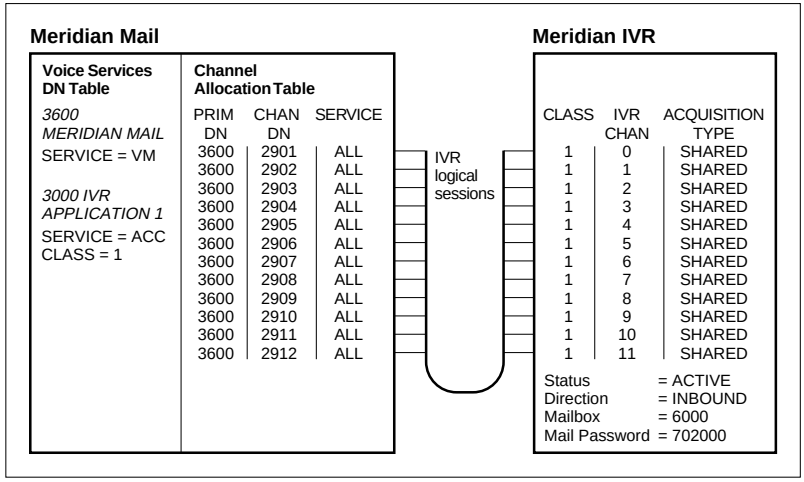
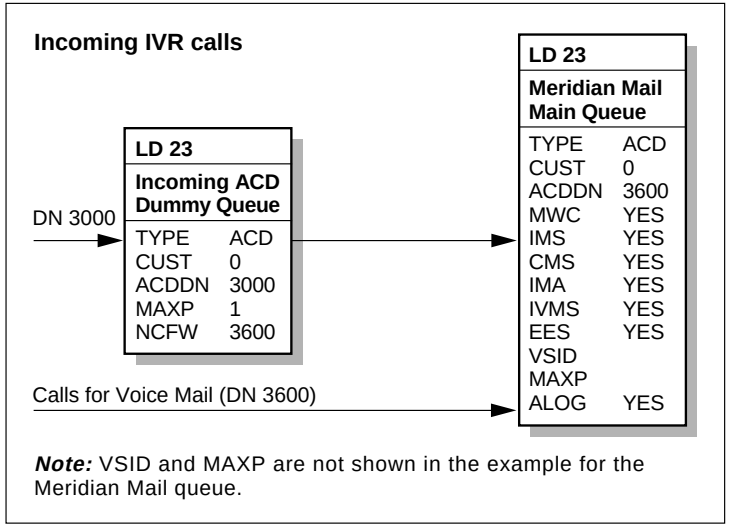


Figure 5-2
Meridian 1/SL-1 ACD configuration for the single-application shared model



Note: VSID and MAXP are not shown in the example for the Meridian Mail queue.

Shared IVR channel configuration (multiple applications)

Figures 5-3 and 5-4 illustrate an example of a Meridian Mail system with 12 voice channels, connected to a Meridian IVR with 12 logical channels. The 12 channels are configured for ALL services. This allows dynamic use of the voice channels based on the Meridian Mail VSDN entry for the dialed DN.

Calls directed to DN 3600 will be answered by Meridian Mail. Likewise, calls which are directed to DN 3000 or DN 5000 will be given IVR treatment and assigned the appropriate Meridian IVR application by a selector program (written by the VAD). See Figure 5-5, "Sample application selector program for Meridian IVR" on page 5-7 for an example of a selector program which could be used with the configuration example shown in Figures 5-3 and Figure 5-4.

The characteristics of this configuration example include the following:

- Meridian Mail voice channels are configured for ALL services.
- all voice channels share the same queue.
- for multiple applications, Meridian IVR logical channels are dynamically allocated to their appropriate running application by utilizing a selector program as shown in Figure 5-5. The selector program uses the DIGITS buffer variable in the Meridian IVR to determine which service the caller dialed.
- Acquisition type on the Meridian IVR is SHARED for all logical channels.

There are a number of advantages and limitations associated with this type of configuration.

Advantages

- Maximum efficiency is obtained with regard to Meridian Mail voice channel utilization.
- Using a selector program, an almost unlimited number of applications can be made available to an incoming call based on the DIGITS buffer content (which contains the originally dialed DN).
- Voice prompt modifications are automatically applied on the next call after saving changes.
- Recorded messages in the IVR mailbox are immediately available for the next call after recording.

Limitations

- Incoming Meridian IVR calls may incur excessive delays in the queue if all Meridian Mail voice channels are busy because of high voice messaging traffic.
- Associating a Meridian Mail voice channel to a Meridian IVR logical channel is difficult because of random logical channel assignments for each Meridian IVR call.
- The Meridian Mail system limits this configuration to a maximum of 24 shared Meridian IVR logical channels for a 9600 baud ACCESS link.

Figure 5-3
Meridian Mail/Meridian IVR configuration for the multiple applications shared model

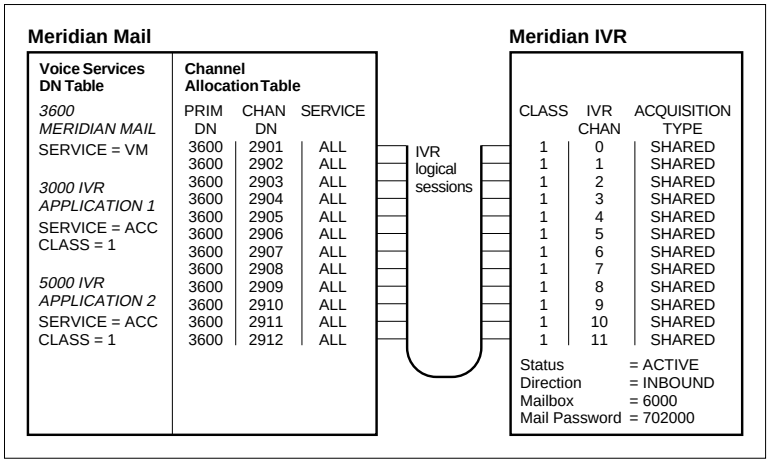
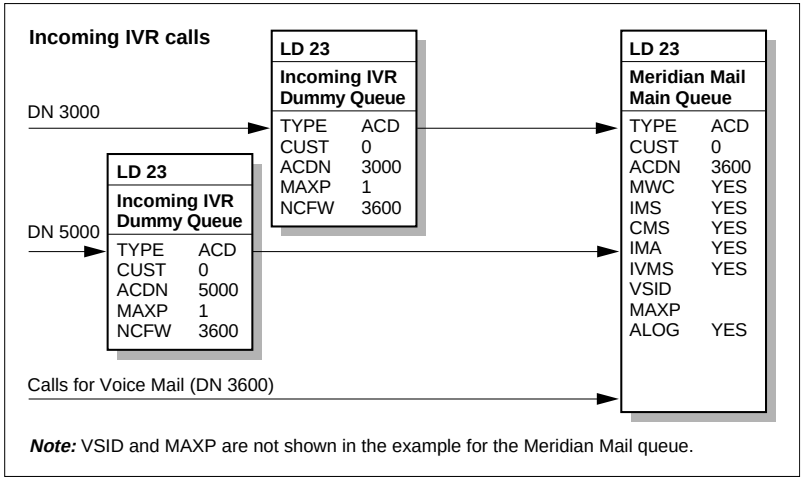
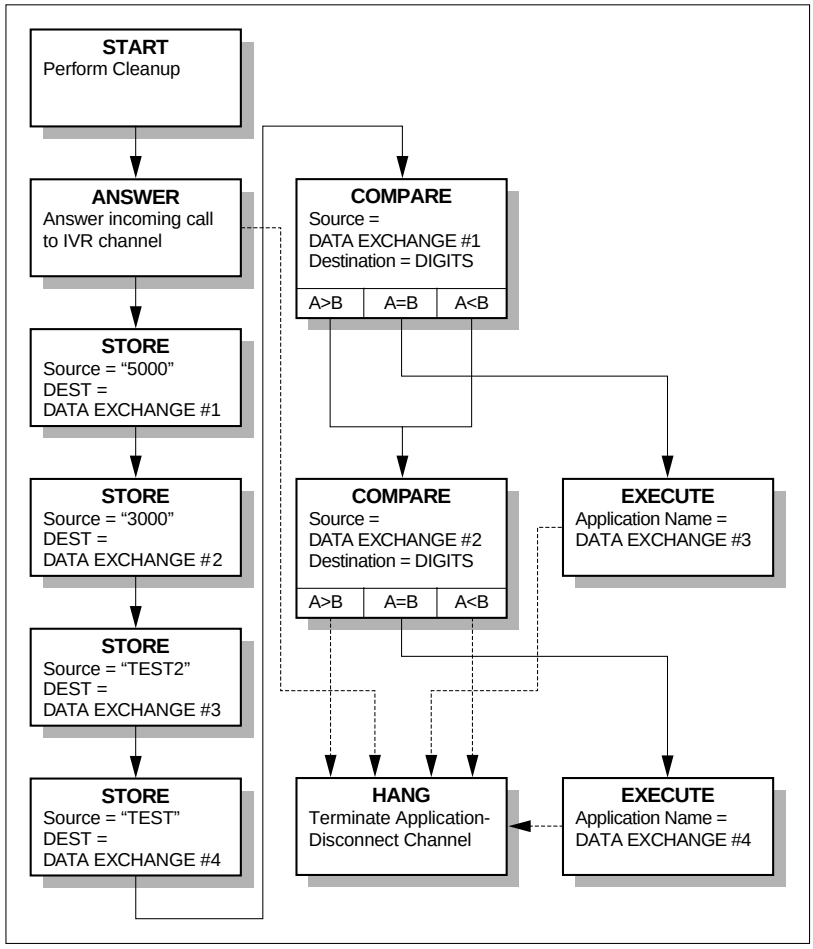


Figure 5-4
Typical Meridian 1/SL–1 ACD configuration for the multiple applications shared model



Note: VSID and MAXP are not shown in the example for the Meridian Mail queue.

Figure 5-5
Sample application selector program for Meridian IVR



Dedicated IVR channel configuration

Figures 5-6 and 5-7 illustrate an example of a Meridian Mail system with twelve voice channels, which is connected to a Meridian IVR with six logical channels. There are six channels dedicated to IVR and six channels that are to be used exclusively for voice messaging.

The characteristics of this configuration example include the following:

- Voice messaging channels are in their own separate Message Center queue (ACD-DN 3600) with service set for VM in the VSDN table. PBX call routing is arranged to prevent IVR calls from being presented to ACD-DN 3600.
- Meridian IVR channels are in their own dedicated IVR queue (3800) with service set for ACCESS.

Note: Although a Class Value is required in the VSDN Table, it is replaced by the individual class values in the Channel Allocation Table. In other words, the Class Value for a dedicated logical Meridian IVR channel (which has a service of ACC, and Class Value in the Meridian Mail Channel Allocation Table) overrides the Class value in the VSDN table.

- Each ACCESS channel in Meridian Mail has a unique class, which is the default Meridian IVR configuration.
- Each Meridian IVR logical channel is dedicated to a specific Meridian Mail ACCESS channel using the class value for linkage.
- Meridian Mail channels are labeled “1 to 6"; Meridian IVR logical channels are labeled “0 to 5".
- The selector program shown in Figure 5-5, "Sample application selector program for Meridian IVR," on page 5-7 can be used if multiple applications are desired on Meridian IVR.

WARNING!

The MMTime clock synchronization process run at powerup and the Meridian IVR Voice Prompt Editor both require one voice channel configured as ALL in the Meridian Mail CAT table.

There are a number of advantages and limitations associated with this type of configuration.

Advantages

- Voice messaging and IVR calls do not compete for channels.
- Associating Meridian Mail channels to Meridian IVR channels is straightforward.
- Provides highest Grade of Meridian IVR Service (if sufficient channels are allocated to ACCESS).
- Up to 48 dedicated voice channels may be used with the Meridian ACCESS link if you are using a 9600 baud ACCESS link.

Limitations

- Reduced overall channel usage efficiency between Meridian Mail and Meridian IVR.
- Voice prompt modifications are not automatically applied on the next Meridian IVR call.
- Recorded messages in the IVR mailbox are not immediately available for the next Meridian IVR call.

WARNING!

Ensure that only IVR calls terminate onto dedicated channels. If the switch and Meridian Mail are configured such that a call intended for a Meridian Mail service is presented to an IVR dedicated channel, the Meridian Mail service will be provided at the expense of the IVR channel.

After the call is finished, it can take up to 15 seconds before Meridian IVR will attempt to re-acquire the channel and it may take much longer under heavy traffic considerations. Any IVR calls arriving during this time will not receive IVR treatment.

Figure 5-6
Meridian Mail/Meridian IVR configuration for the dedicated model

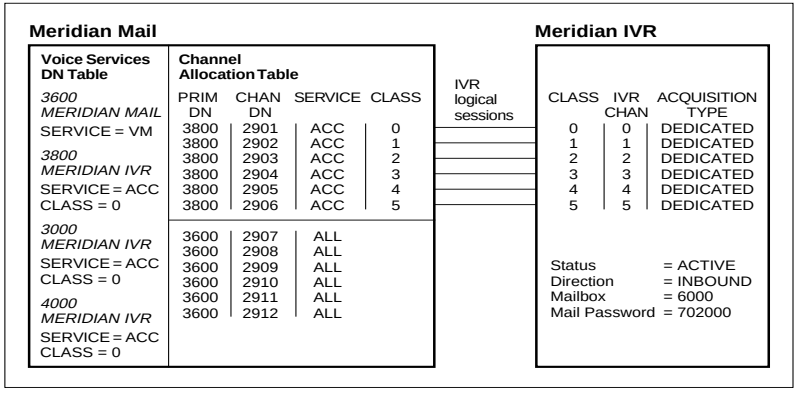
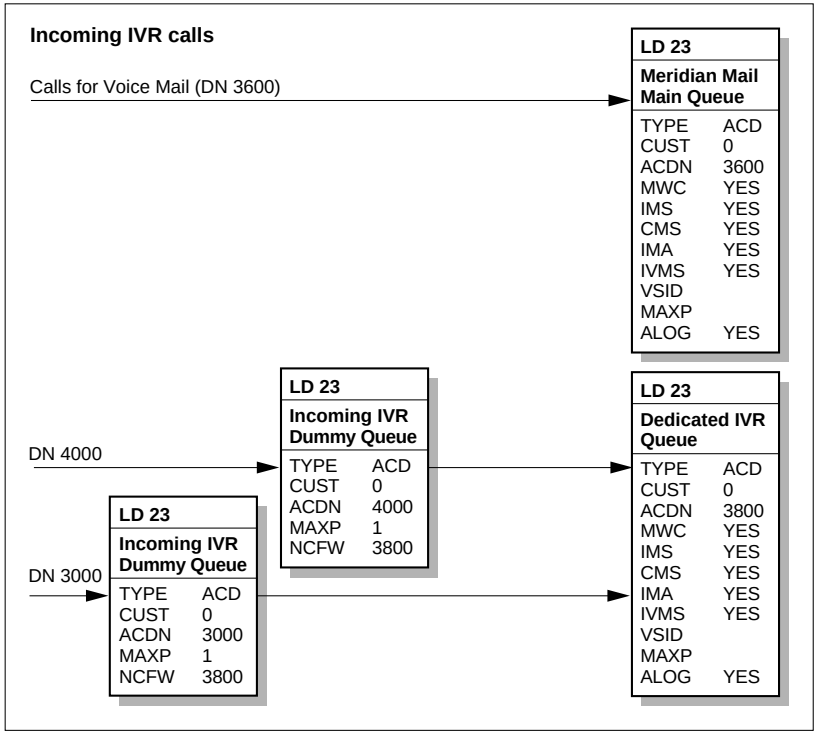


Figure 5-7
Typical Meridian 1/SL–1 ACD configuration for the dedicated model



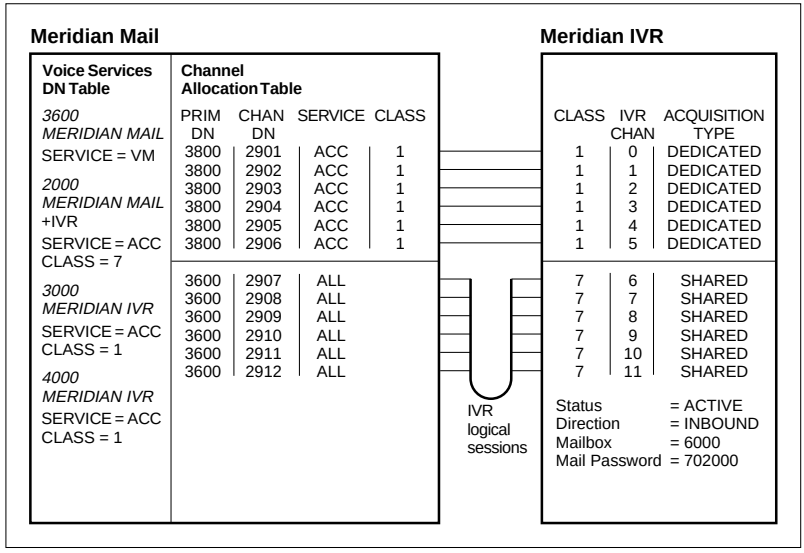
Hybrid Meridian IVR channel configuration

Figures 5-8 and 5-9 illustrate a Meridian Mail system with 12 voice channels, which is connected to a Meridian IVR system with 12 logical channels. The first six voice channels are configured as dedicated IVR ports. The other six channels are set up in a shared configuration with Voice Mail.

The characteristics of this configuration example include the following:

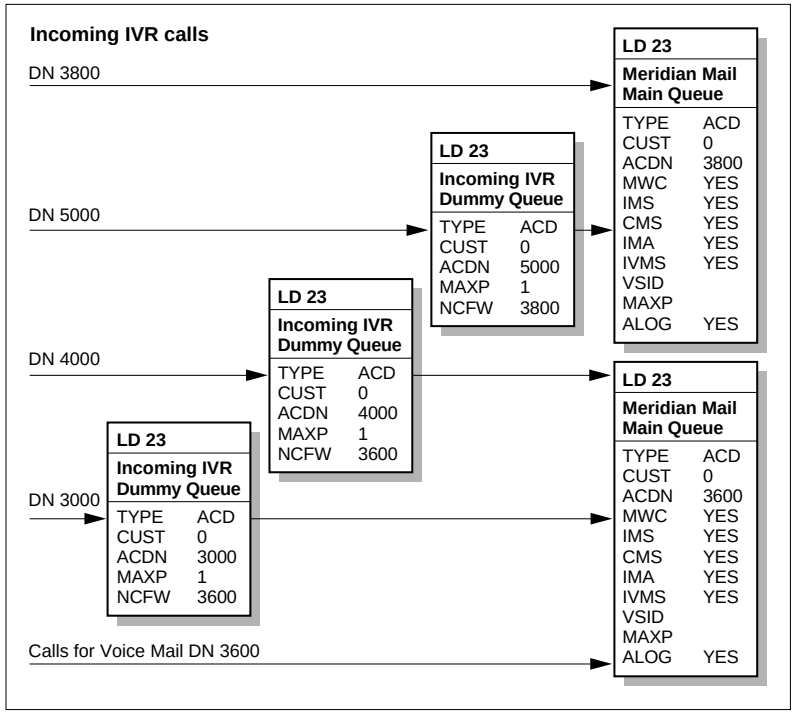
- two separate ACD queues handling IVR calls
- each IVR queue having two incoming call paths (see Figure 5-9)

Figure 5-8
Meridian Mail/Meridian IVR configuration for the hybrid model



A selector program should be used if multiple applications are to be made available within either of the voice channel queues (DNs 3800, 3600). An example of a selector program is shown in Figure 5-5.

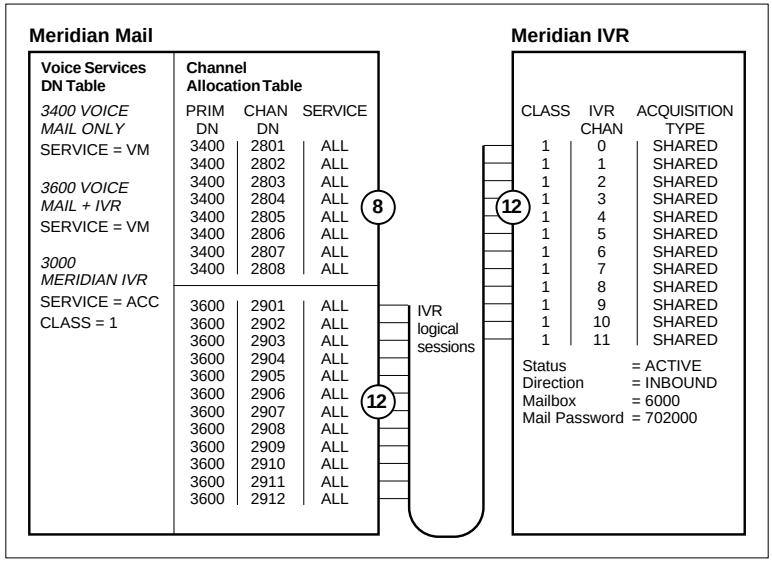
Figure 5-9
Meridian 1/SL-1 ACD configuration for the hybrid model



Shared configuration when available voice channels exceed IVR logical channels

Figure 5-10 illustrates a Meridian Mail system with 20 voice channels, which is connected to a Meridian IVR system with 12 logical channels. The 20 voice channels are configured for all services. The voice channels are split into two separate Message Center ACD queues. The queue to be shared with Meridian IVR calls contains channels whose numbers are equal to the available Meridian IVR logical channel capacity. The remaining voice channels are placed in the ACD queue which will be used exclusively for Voice Mail service.

Figure 5-10
8 Dedicated Voice Mail and 12 Shared Channels



This configuration allows dynamic use of the voice channels which are being shared with the Meridian IVR system. Calls dialed to DN 3400 will be answered by Meridian Mail Voice Messaging. When all eight of the ACD 3400 voice channels are busy, voice mail calls will overflow to the shared ACD-DN 3600, with a dialed DN of 3400, which will prompt Meridian Mail Voice Messaging to answer the call. Likewise, calls which are directed to DN 3000 will be given IVR treatment.

The characteristics of this configuration example include the following:

- Meridian Mail voice channels are configured for ALL services.
- The SHARED queue (ACD-DN 3600) is configured with a number of voice channels that is equal to the available logical channels in the Meridian IVR system.
- Acquisition type on the Meridian IVR system is SHARED for all logical channels.
- All of the available voice channels are available for Voice Mail usage.

There are a number of advantages and limitations associated with this type of configuration.

Advantages

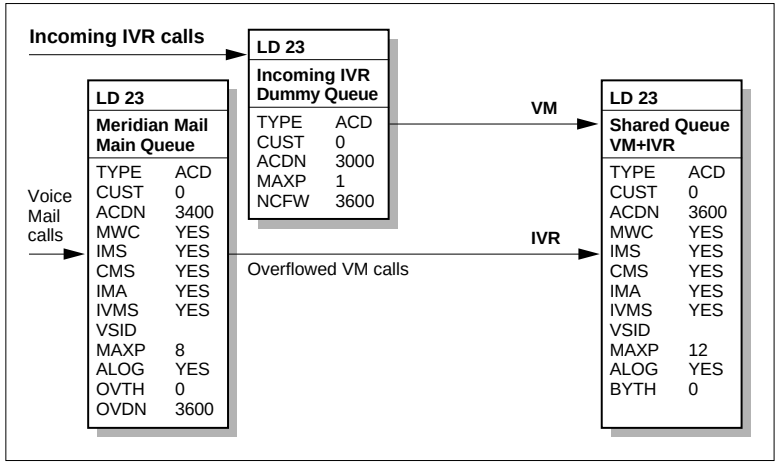
- Maximum efficiency is obtained with regard to Meridian Mail channel utilization.
- Voice prompt modifications are automatically applied on the next call after saving changes.
- Recorded messages in the IVR mailbox are immediately available for the next call after recording.

Limitations

- Incoming Meridian IVR calls may incur excessive delay in the queue if all Meridian Mail channels are busy because of high Voice Messaging traffic.
- Associating a Meridian Mail channel to a logical Meridian IVR channel is difficult because of random channel assignments for each incoming Meridian IVR call.
- The Meridian Mail system limits configuration to a maximum of 24 shared Meridian IVR channels for a 9600 baud ACCESS link.

Figure 5-11 provides an example of a PBX configured for this setup.

Figure 5-11
Configuring 20 Meridian Mail agents with 12 Meridian IVR logical channels



Configuration notes for Meridian Mail Release 9 systems

In Meridian Mail Release 9, the concept of a port has been expanded to embrace the concept of port type and port capability. There are now three different types of ports.

- Basic service voice ports. Services offered on these types of ports include the following:
  - — ACCESS (this includes Meridian IVR)
  - — Thru-dial Service
  - — Voice Menu Service (if it does not invoke voice services that require full service ports)
  - — Announcement Service
- Full service voice ports. Most Meridian Mail services are offered on full service voice ports. Services include the following:
  - — Voice Messaging
  - — Express Messaging

— networking services

- Full service multimedia ports. Multimedia ports are used to provide

  — fax services

  Notes:

  1 Features supported by basic service ports are also supported by full service ports. Full service multimedia ports support the same services as full service voice ports, and in addition support the multimedia services.

  2 When configuring ACD agent queues in the Meridian 1, all ports servicing a particular queue must be of the same kind (having the same capacity and type). For example, a queue cannot be serviced by both full service voice ports and basic service voice ports.

The port type (voice versus multimedia) and capability (basic versus full) determine the features that can be processed through that port.

The remainder of this section will discuss how these different port types affect ACCESS and Meridian IVR.

For more information on the different types of ports, see the *Meridian Mail Site and Installation Planning Guide* (NTP 555-70x1-200) and the Voice Administration chapter in the *Meridian Mail Administration Guide* (NTP 555-7001-301 or 302/303).

Single port type

If a Meridian Mail system contains only a single port type (all basic voice, full service voice, or all full service multimedia), the ACCESS service (and Meridian IVR) will continue to function as it has in previous releases of Meridian Mail (namely, Release 7.5 and 8).

Mixed port types

If there is a mixture of port types on your Meridian Mail system, the number of ports available for Meridian IVR is restricted. The restrictions are as follows:

- When Meridian IVR requests acquisition of a voice channel, the system examines ALL channels which are in service.
- Of the channels in service, those with the lowest port capability are considered for use.
- If one of the lowest capability ports is idle, it is provided to Meridian IVR.

In Table 5-1, the maximum number of ports available for Meridian IVR is two. Meridian IVR in this case cannot be provided on a full service port because basic ports are in service.

Table 5-1
Mixed port type configuration, ALL channels in service

Channel Allocation Table							Channel Status
#	PRIM DN	CHAN DN	Type	Capability		Outbound	Port Status
1	3650	2800	Voice		**Basic**	All	Idle
2	3650	2801	Voice		**Basic**	All	Idle
3	3650	2802	Voice	**Full**		All	Idle
4	3650	2803	Voice	**Full**		All	Idle
5	3650	2804	Voice	**Full**		All	Idle
6	3650	2805	Voice	**Full**		All	Idle
7	3650	2806	Voice	**Full**		All	Idle
8	3650	2807	Voice	**Full**		All	Idle

In Table 5-2, if the basic ports were taken out of service, the maximum number of channels available for Meridian IVR would now be six. This is because the lowest capability port in service is now a full service port, and there are six available. ACCESS can run on full service ports when there are no basic ports in service.

Table 5-2
Mixed port type configuration, basic ports out of service

Channel Allocation Table							Channel Status
#	PRIM DN	CHAN DN	Type	Capability		Outbound	Port Status
1	3650	2800	Voice		**Basic**	All	Out of Service
2	3650	2801	Voice		**Basic**	All	Out of Service
3	3650	2802	Voice	**Full**		All	Idle
4	3650	2803	Voice	**Full**		All	Idle
5	3650	2804	Voice	**Full**		All	Idle
6	3650	2805	Voice	**Full**		All	Idle
7	3650	2806	Voice	**Full**		All	Idle
8	3650	2807	Voice	**Full**		All	Idle

Meridian IVR configuration notes

Dedicated channels

Dedicated Meridian IVR logical channels must be associated by their access class with Meridian Mail voice channels that are not shared with any other Meridian Mail voice services.

If the Meridian 1 PBX call routing is such that non-IVR calls intended for a Meridian Mail voice service land on an IVR dedicated channel, the Meridian Mail service will be provided at the expense of the IVR channel. After the call is finished, it can take up to 15 seconds before IVR attempts to re-acquire the lost voice channel, and longer if another call is presented to that channel when Meridian IVR attempts to re-acquire it. Any IVR calls arriving during this time on this channel are not given IVR treatment.

All logical channels of shared acquisition type that have been configured in Meridian IVR must be set to run against the appropriate application. Otherwise calls will be presented repeatedly to the BUSIED OUT logical channels. Such calls will be answered and immediately transferred back to the originally-dialed out VSDN. This has the effect of sending the call to the back of the queue, or causing the original CLID to be replaced by the position ID of the Meridian Mail voice channel that answered and transferred the call.

Shared channels

Shared Meridian IVR logical channels must not be presented with more calls to VSDN's of a given Access Class than there are logical channels assigned to the given Access Class. Meridian 1 PBX call routing must be controlled to ensure that excess calls are not presented. Otherwise, new Meridian IVR calls will be reverted whenever all the logical channels of the given class are busy.

Access Class values

Different Access Class values should not be used to allow several applications to share the same Meridian Mail voice channels based on the Class of the VSDN. Use a selector application instead. It is impractical to use different Class values to select different applications, because this requires purchasing and configuring more Meridian IVR logical channels than the number of voice channels that are being used simultaneously for Meridian IVR calls.

To illustrate the impracticality, if three applications were to share eight voice channels, twenty-four Meridian IVR channels would have to be configured: eight for each of the three applications, so that a logical channel is always be available when a call is presented with the VSDN and Class that are associated with a particular application.

The recommended configuration is to use the same Class for all VSDNs that share the same Meridian Mail voice channel. The selector application is then assigned a range of logical channels which equal the number of voice channels that are to be shared. The VAD creates a selector application to select the appropriate application based on the originally-dialed VSDN, which is passed to Meridian IVR and stored in the DIGITS buffer.

Customer Controlled Routing

Customer Controlled Routing (CCR) can be used to control how the Meridian 1 PBX routes calls to Meridian IVR. CCR can queue the same call to up to four ACD queues simultaneously. CCR has the unique capability (GIVE IVR) of presenting a call to Meridian IVR while holding a place for that same call in other ACD queues.

Alternatively, or in conjunction with CCR, Meridian 1 PBX call routing can be controlled through ACD Timed Overflow, Enhanced (Timed) Overflow, Automatic Overflow, Controlled or Automatic Interflow, and Night Call Forward. Other PBX routing capabilities may also be applicable.

Meridian Mail voice channels may be grouped into several Message Center ACD-DNs to allow calls to be routed appropriately. PBX call routing is critical to control or restrict the sharing of Meridian Mail voice channels, and to limit the number of calls presented to VSDN's of a particular Access Class.

Voice Prompt Editor

The Voice Prompt Editor requires one voice channel configured as ALL in the channel allocation table (CAT).

MMTime synchronization

The MMTime synchronization process requires one voice channel configured as ALL in the CAT. Time synchronization occurs whenever the Meridian IVR system autoboots. To synchronize the time, use the root account and the MMtime command to secure the system for power down. Then press the reset button on the Application Processor, and the Meridian IVR system autoboots.

Configuring an isolated test environment

To configure an isolated test environment in a live system, three things must be controlled to separate test traffic from customer traffic:

- Meridian 1 PBX call routing of test traffic to separate Meridian Mail voice channels
- Meridian Mail presentation of test traffic to separate Meridian IVR logical channels
- Meridian IVR logical channel association with a separate mailbox for testing new or changed voice prompts

Call routing of test traffic

Assign one or two Meridian Mail voice channels to a separate Message Center ACD-DN to allow an isolated test environment to be established temporarily as needed. In normal operation when there is no test activity, customer traffic can be routed to the Meridian Mail test channel by CCR or ACD Timed Overflow. The corresponding Meridian IVR test channel is set to run the existing application when there is no test activity going on.

The test environment can be temporarily isolated when there is a need to test a new or modified application. This can be accomplished most conveniently by removing the Message Center ACD-DN for the test channel from the CCR script, or from the ACD Overflow DN list (OVDN), or from the target queue table (NACD) for Timed Overflow, so that customer traffic is no longer routed to the test channel. The corresponding Meridian IVR test channel is then set to run the new or modified application that is to be tested.

Presentation of test traffic

The Message Center ACD-DN for the test channel is defined in the Meridian Mail Voice Service DN Table as an Access service. Test traffic can be presented exclusively to the test channel by dialing the Access test DN.

For dedicated acquisition type, the Meridian Mail test channel is tied to the Meridian IVR test channel; therefore, changing the PBX routing also controls the presentation of test calls to the Meridian IVR test channel.

For shared acquisition type, the logical channel that is to be used for the isolated test environment must be reconfigured to make its Class the same as the Class of the test DN in the Meridian Mail Voice Service DN Table.

Meridian IVR must be restarted for the configuration change to take effect. Therefore using shared acquisition type for the test channel requires interrupting Meridian IVR service on all channels to switch the test channel between the normal operating environment and the isolated test environment.

Logical channel association with a separate mailbox

Some applications require the specific functional advantages of shared acquisition type, namely the immediate availability of new or changed voice prompts and Meridian IVR access to recorded voice messages on subsequent calls.

In most cases dedicated acquisition type is preferred for test channels that have to be switched frequently between customer traffic without interrupting Meridian IVR service on all channels.

For more information, refer to the appropriate sections on application development and testing on a live system found in the *Meridian IVR Application Development Guide* (NTP 555–9001–310) and *Meridian IVR System Administration Guide* (NTP 555-9001-300).

Meridian IVR interaction with Customer Controlled Routing

Meridian IVR and Customer Controlled Routing (CCR) can work together to provide Meridian IVR treatment to calls routed by CCR, while holding a place for that same call in other ACD queues. The Meridian 1 PBX must be running X11 Release 18 or later.

The CCR script command syntax for the GIVE IVR treatment is the following:

```
GIVE [INTERRUPTIBLE] IVR <acd dn> [WITH TREATMENT <treatment
value>] [WITH PRIORITY (1, 2, 3, 4)]
```

For example:

```
GIVE INTERRUPTIBLE IVR 3650 WITH TREATMENT 4000 WITH
PRIORITY 2
```

This CCR command provides IVR treatment, using Meridian Mail voice channels assigned to Message Center ACD-DN 3650 and Treatment DN 4000, to a call that may already be waiting in another ACD queue. If DN 4000 is defined in the Meridian Mail Voice Service DN Table as an Access service, Meridian IVR can handle the call while the caller continues to wait for an agent in the original queue. All Priority 1 calls will be given IVR service before this call, which was optionally assigned to Priority 2.

In this example, ACD-DN 3650 is the Message Center ACD-DN that contains the Meridian Mail voice channels that have been defined as IVR agents (it is *not* a dummy ACD-DN).

- The optional keyword INTERRUPTIBLE means the Meridian IVR treatment will be interrupted if an agent becomes available in the original queue.
- The optional WITH TREATMENT 4000 clause specifies the Voice Service DN to be used instead of the default Treatment DN. The optional with PRIORITY 2 clause specifies a priority lower than the default Priority 1.

For CCR to give IVR service while holding the caller's place in another ACD queue, the Meridian 1 PBX must be configured to specify that the voice channels contained in the Message Center ACD-DN are IVR agents.

Procedure 5-1
Configuring the PBX to provide IVR service

1 Load Overlay 23 from the Meridian 1 PBX administration terminal.

2 In the ACD block for the Message Center ACD-DN, respond YES to the IVR prompt.

3 Enter the optional default Treatment DN at the TRDN prompt. The default Treatment DN will be used if the optional WITH TREATMENT clause is omitted in the CCR script.

Appendix A: Meridian IVR components

Table A-1 lists the required components needed to install a basic Meridian IVR system.

Table A-1
Meridian IVR system component list

Component	Description	OEM part number	NT part number
One of the following:			
Altair Motherboard/Magellan Tower Chassis	It includes Pentium P5-75 and 8-slot (5 EISA, 2 PCI and 1 Combo) with AIC-7870 SCSI and IDE controller, 16 Mbyte DRAM, and six open SIMM sockets), 3.5-inch floppy drive, 525 watt power supply, 256K of Cache, and inboard Video Driver.	MG1F75A2M16	A0639230
Altair Motherboard/Magellan Tower Chassis	It includes Pentium P5-100 and 8-slot (5 EISA, 2 PCI and 1 Combo) with AIC-7870 SCSI and IDE controller, 32 Mbyte DRAM, and four open SIMM sockets), 3.5-inch floppy drive, 525 watt power supply, 256K of Cache and in board Video Driver.	MG1F100A2M16	A0639231
CPU	100MHz Pentium Processor		A0639812
DRAM*	16Mbyte 70ns DRAM	KMM5364100A-7	A0639617
	16Mbyte 70 ns DRAM	TM497MbyteK36 Q-70	

Table A-1
Meridian IVR system component list (continued)

Component	Description	OEM part number	NT part number
Video DRAM*	256K * 16 DRAM size	Mbyte814260-70P J-ER	A0639513
Secondary Cache Memory	Asynchronous 256 KB	IDT7MP6189-15	A0639530
SVGA Monitor	17” Non-interlaced.27mmpitch	17GS	A0638465
	14” Non-interlaced.28mm pitch	14D	A0638462
Hard Drive	1.2 Gbyte Hard Disk Hot Swap	XP31070R	A0639372
Tape drive	2.5 Gbyte Tape Drive	TDC4220	A0622896
Mouse	3 button PS/2 type mouse “MouseMan”	1221	A0638486
Keyboard	Enhanced 101 key Keyboard	RT101	A0602548
Modem	14,400 baud external (V.32 bis)	Sportster 14,400 External	A0638645
UPS	Integrated Intelligent UPS	SU-1000	A0637736
Printer	HP Laserjet 4M Plus	Laserjet 4M Plus	Not Supplied by NT
	DEC Dot Matrix printer	DECLA75S	Not Supplied by NT
Audio Interface	Audio Interface Unit (For recording prompts)	NT1R16BB	A0403013
Ethernet Card	PCI Combo Ethernet	ZX312	A0638565
Token Ring Controller Card	ISA Smart 16/4 AT Plus Ringnode Token Ring Card	52-03	A0639229
Serial board	16 bit Intelligent serial communication board (8 ports) with Octa cable (DCE)	77000037	A0638430

Table A-1
Meridian IVR system component list (continued)

Component	Description	OEM part number	NT part number
Host Connectivity boards	EXPRESS High Performance Adapter (RS-232) (3270 with driver Software, SDLC)	HL-3270-HW-S	A0638579
	Madge Smart 16/4 AT Plus Ringnode (Token-Ring)(5250 over Token-Ring)	HL-5250-HW-TR	A0638587
	EXPRESS High Performance Adapter (RS-232) (3270 over Token-Ring)	HL-3270-HW-TR	A0638583
Fax Board	4-port Fax board	VFX/40E includes (D41/E and Fax/40E)	A0638637
SCO Operating System	SCO Open Desktop Lite	103-800-000	A0638855
	SCO Development System	105-800-000	A0638853

Table A-1
Meridian IVR system component list (continued)

Component	Description	OEM part number	NT part number
Cables	Octa DB25 (Male) DCE (for Serial Board)	76000020	Supplied with the Board
	Bi-Tronics parallel cable for Laser and Dot-Matrix Printer (36-pin male <-> 25 pin male)	C2950A	Not Supplied by NT
	Modem cable (25-pin male <-> 9-pin female)	-	A0601464
	RJ-11 cable for Dialogic fax cards	-	A0346862
	EXPRESS High Perf. Adapter (RS-232) The cables are provided when the card is purchased (two 15-pin male <-> 25-pin male)	Not Applicable	Not Applicable
	Madge Smart 16/4 AT Plus Ring-Node (Token-Ring)	Not Applicable	Not Supplied by NT
	UPS: 9 pin female <-> 25 pin male DB25F to DB25F gender changer	- -	A0601464 A0351509
	KeyLock Cable (DB9F to DB25F)	NT7D58BB	A0401139-01
	KeyLock Adapter	-	A0386050
-END-			

Hardware platforms

Meridian IVR connects to the following Meridian Mail hardware platforms:

- Modular Option
- Modular Option EC (enhanced capacity)
- Options

The following tables list the hardware platforms and the hardware needed to connect them to Meridian IVR.

Table A-2
Meridian IVR and Meridian Mail platforms

Platform	Hardware composition	Order code/part number
Modular option EC	UTIL assembly	
	Utility card	NT6P42AA
	SBC/UTIL fanout cable (12 to 18", 5xDB25 female)	NT6P0109
	SBC node Z/Y fanout cable (12 to 18", 4xDB25 female)	NT6P0110
Modular option NT4R68AA	RSM assembly	
	RS-232C service module	NT4R03AB
	RSM fanout cable (25 ft., 4xDB25 female)	NT4R20AA
	RSM ribbon cable assembly	NT6D4406
	RSM installation kit-modular	NT9D99AA
Shelf options NT4R69AA	Jumper for SBC card	A0292488

Table A-2
Meridian IVR and Meridian Mail platforms (continued)

	50-pin EMI filter and mounting	A0361136
	RS-232C service module	NT4R03AB
	RSM fanout cable (25 ft.)	NT4R20AA
	RSM cable assembly	NT4R58AA
	Conversion plate 50 to 36	P0705679
-End-		

Appendix B: Making changes

This chapter provides information on

- upgrading the operating system
- upgrading to a Development system
- conversions and expansion
- software reinstallation
- installing a second hard drive
- using SCU (system configuration utility)
- reserializing the system

Prerequisites

Whenever you perform installation or upgrade procedures, ensure that you have the following:

- Mass Installation Toolkit (MIT) consisting of three floppy disks and two tapes (described in this section)
- SCO Open Desktop Lite registration card
- SCO Development system registration card (for Development systems)
- Report Writer Keycode and serial number
- Meridian IVR Keycode number

Upgrading the SCO operating system

If the operating system needs to be upgraded, then a reinstallation of the entire operating system must be carried out. This procedure involves the following steps:

1 Using the Meridian IVR Backup tool to back up the required data

2 Installing the new operating system with the Mass Installation Toolkit (MIT) system tape and diskettes

3 Restoring the data files

Information on the use of the Backup tool is found in the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500).

Upgrading from a Run-time to Development system

This procedure is only valid for upgrading from a Run-time system to a Development system. It involves installing the Development system tape and the Meridian IVR application tape.

A Development system cannot be downgraded to a Run-time system.

Procedure B-1
Installing the MIT tape and diskettes

1 Insert the MIT tape into the tape drive.

2 Reboot with the N1 diskette.

3 When prompted, enter the serial number and activation key that are provided for the Development system package.

Procedure B-2
Installing the IVR application tape

1 Insert the Meridian IVR Application Tape into the tape drive.

2 Log in as root to a single user.

3 Type **init.install** and press <Enter>.

4 This command downloads the permlist from the tape. Then, it looks for the name of the preparation script from the tape and invokes it. The initialization script invokes the install program.

5 The install program prompts for the new Keycode. Enter the customer Keycode, and press <Enter>.

After the keycode is entered, the install program reads the customer serial number from the security device, and decrypts and decodes the Keycode where it recognizes that an upgrade is being performed. Then it modifies the already existing customer profile file.

Conversions and expansion

Conversion

Applications written on Meridian IVR Release 1.2 can be moved to Meridian IVR Release 2.0/I. User functions moved to Release 2.0/I Intel/SCO platform require porting and recompilation.

Expansion

If additional features or options are required by a customer already running a Meridian IVR Release 2.0/I system, a new tape need not be created at the factory. A new keycode will be created and used to reinstall the new features onto the customer's system.

Refer to the documents entitled *Meridian IVR Release 2.0/I Keycodes Feature Specification* and *Meridian IVR Release 2.0/I Installation / Upgrade Feature Specification* for further details (PS-3022-212).

Software reinstallation procedures

ATTENTION!

Before attempting to reinstall any Meridian IVR software, be sure to review this entire section carefully.

Reinstalling the Meridian IVR software replaces the entire contents on the hard drive. For an existing system, it is important to get a backup system copy of all your site-specific files before the reinstallation is done. This allows you to quickly restore your current configuration once the installation from tape is complete.

When to use Since the operating system software and Meridian IVR software is factory installed this procedure is used only when the hard disk has crashed and needs to be replaced or reformatted, or when software upgrades are to be applied to the Meridian IVR system.

Such events require you to load the operating system and application software from the two software distribution tapes delivered with the system. These tapes are *not* to be used for backups and should be kept in write–protected mode and *only* used to rebuild the system.

Allow up to 90 minutes for the complete software reinstallation procedure.

Physical inventory

Meridian IVR Release 2.0/I and SCO UNIX software is distributed on three floppy disks and three tapes:

- Volume N1 Boot diskette
- Volume N2 root filesystem diskette
- MIT Operating System tape (System Image)
- M01 MIT Master Install diskette
- Meridian IVR Application tape
- Meridian IVR 2.0/I system prompts (tape)

System backup

Perform a system backup before reinstalling the operating system software for an existing system. See the section on performing a full system backup in the *Meridian IVR System Administration Guide* (NTP 555-9001-300).

We recommended that you perform a backup frequently to ensure that the backup tape is always current.

Reinstalling the operating system

It is not always necessary to reinstall the operating system when you are making software changes. See the section on reinstalling the operating system in Chapter 6 of the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500).

Entering single user mode

The following procedure describes how to reboot the system and get into single user mode.

Procedure B-3
Rebooting the system

1 Type **reboot** and press <Enter> at the system prompt.

The system reboots. Shortly after the system restarts, the following prompt appears:

```
Boot
```

2 Press <Enter> to continue the bootup procedure.

After several system messages are displayed, the following prompt appears:

```
Type CONTROL-d to proceed with normal startup,
(or give root password for system maintenance):
```

3 Enter the root password and press <Enter> to enter Maintenance mode.

The reboot process is now complete. You can now continue with reinstallation of the IVR application software.

Note: If you did not choose a system name during the operating system installation procedure, you will have to enter a system name at this point. Once you have entered a system name, the system will reboot and you will have to repeat the above procedure.

Reinstalling the IVR application software

When the system has been rebooted, you can continue with reinstallation of the IVR application software. The following procedure describes how to install the IVR application software.

Procedure B-4
Reinstalling the IVR software

1 Insert the IVR application tape in the tape drive.

2 Start the install script; type the following command:

init.install

A message appears stating the conditions for IVR installation. Ensure that the following conditions are met for IVR software installation:

- You are logged in as root.
- The system is in single user mode.
- The Meridian IVR application tape is in the tape drive.

The following prompt appears:

```
Are the above conditions met? (y/n)
```

3 Type **y** and press <Enter> if the above conditions are met. If the conditions are not met, type **n** and press <Enter>, and repeat this procedure.

If the system is not in single user mode, you must reboot the system and get into single user mode. (See "Rebooting the system".)

The following message appears after installation begins:

```
Extracting installation script and files from tape
```

After five to ten minutes, the following prompt appears:

```
please enter your keycode or enter q to quit:
```

4 Type the keycode for your IVR application configuration and press <Enter>. Do not type spaces within the keycode. The keycode is not case sensitive. You have three chances to enter the correct keycode, after which the installation script will exit.

The list of options is displayed, followed by the prompt:

```
Please enter y to continue and n to abort (y/n)
```

5 Type **y** to continue with the installation.

After various system messages, the following messages appear:

```
Installing Report Writer

INSTALLATION
```

```
At least 6 MB free disk space should be available.
Is there enough free space [y]
```

6 Type **y** and press Return to continue with Report Writer installation, or **n** to skip this part of the installation.

If you type **y**, respond to the following prompts for the Report Writer:

```
Serial number:

Key:

Number of users:

Directory to install fs- Report [/usr/local/fsreport]
```

The Number of users should be **1** and directory should be **/u/fsreport**.

If you have the Fax Response option, several fax installation messages appear.

After Report Writer installation (and fax installation, if applicable), the following prompt appears:

```
Do you have a second hard disk to configure? (y/n)
```

7 Type **y** and press <Enter> if you have installed a second hard drive, otherwise type **n** followed by <Enter>.

8 If you answer **y**, follow the procedure in "Installing a second hard drive" below to install the hard drive and complete IVR application installation.

After several system messages, the system returns to the operating system prompt.

IVR application software installation is complete. You can now shut down or restart the system using the next step.

9 Follow the procedure under "Entering single user mode" until the following prompt appears:

```
Type CONTROL-d to proceed with normal startup,
(or give root password for system maintenance):
```

10 Type <Ctrl+D> to continue with normal startup and start the Meridian IVR GUI.

Installing a second hard drive

This procedure is a subset of the procedure in "Reinstalling the IVR application software". You must reinstall the IVR application software to install a second hard drive. This procedure cannot be performed separately.

> ***Note:*** Hardware installation of a second hard drive is described in the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500).

Procedure B-5
Installing a second hard drive

1 Follow the procedure in "Reinstalling the IVR application software" until the following prompt appears:

```
Do you have a second hard disk to configure? (y/n)
```

2 Type **y** and press Return.

The following messages are displayed:

```
Copying the required files for configuring the second
disk

System is Adding the Following SCSI Hard Disk:

Host
Adapter            Adapter
Type   Device   Number  ID      LUN
-------------------------------------------------
alad    Sdsk       0             1        0
Updating SCSI configuration.

The SCSI configuration file has been updated.
A new kernel must be built and rebooted before disk
configuration can continue.
Would you like to relink at this time?

The UNIX Operating System will now be rebuilt.
This will take a few minutes.  Please wait.

Root for this system build is /.

The UNIX Kernel has been rebuilt.
```

```
Backing up /unix to /unix.old
Installing new /unix
Setting up new kernel environment
Relinking now

After the system is rebooted with the new kernel,
invoke .second (by typing ./.second) to initialize the
new hard disk.

Successful completion of Meridian IVR NewInstall
MIVR Installation has successfully completed.
```

3 Follow the procedure under "Entering single user mode" and log in as root to enter maintenance mode.

4 At the system prompt, type the following command:

./.second

The following messages appear:

```
Initializing The Second Disk

Overwriting all of the present contents of the hard
disk.
Second DISK Detected !
Installation of Second Disk In progress
Formatting and Creating UNIX Partition on Second Disk
No space left on disk for further partitions
Filesystem number 0 already exists.
Filesystem number 5 already exists.
bytes per logical block = 1024
total logical blocks = 510079
total inodes = 65488
gap (physical blocks) = 7
cylinder size (physical blocks) = 400
cluster size = 16
mkfs: Available blocks = 505920
Mounting filesystem
Move Fax Data from Prime Disk to Second Disk?  (y/n)
```

5 Type **y** to move the Fax data to the second hard drive.

After several messages, the following message appears:

```
End of Second Disk Installation!
```

Installation of the second hard drive is complete. Reboot the system normally to start Meridian IVR.

The System Configuration Utility

The System Configuration Utility (SCU) is used to configure and reconfigure the Application Processor when it is installed, or when any subsequent additions or changes have been made to the system.

ATTENTION!

This utility is only needed, during the installation process, to add an Ethernet card.

The SCU automates the configuration process for maintaining system parameters and storing those parameters in memory. The SCU guarantees that there will be no conflicts or contention issues between adapter cards, since it assigns all necessary system resources.

The SCU must be executed every time adapter cards are physically added, removed, or moved. The SCU operates on the information provided by the configuration files in the system's memory.

When the Application Processor is powered on the system BIOS reads the system configuration information from memory and initializes all adapter cards on the system.

For more information about the System Configuration Utility refer to the *Meridian IVR Maintenance and Diagnostics Guide* (NTP 555-9001-500)

Reserializing the Meridian IVR system

This procedure is used to reserialize the system when the number of users is increased or decreased. When this type of upgrade is made a new Activation Key and Serial Number supplied by the vendor must be used to reinitialize the system.

Note: This procedure does not add any functionality or remove any options from the Meridian IVR system.

Procedure B-6
Invoking the reserialization script

1 To invoke the reserialization script type the following command:

```
serialfix
```

from any window. When prompted, use the serial number and activation key included with the SCO Open Desktop Lite distribution.

Note: The serial number and activation key for SCO are case sensitive. Type them exactly as they appear on the activation cards.

2 Respond to the following prompts using the appropriate serial number and activation key from the SCO Product Activation card:

```
Enter your serial number or enter q to quit:

Enter your activation key or enter q to quit:
```

The following message appears:

```
SCO Open Desktop Development System Serialization
```

ATTENTION!

When prompted, use the serial number and activation key included with the SCO Open Desktop Development System distribution.

3 Respond to the following prompts using the appropriate serial number and activation key from the SCO Product Activation card:

```
Enter your serial number or enter to quit:

Enter your activation key or enter to quit:
```

The following message appears:

```
MIT serialization complete
```

Appendix C: Cable pin-out data

This appendix illustrates pin out information for the cables that you will use to attach your Application Processor (AP) system to various external devices and services. This information is useful for analyzing cabling requirements and designing custom interfaces. The following cables are reviewed:

- loopstart trunk interface cable
- modem cable

Modem cable

The external modem accompanying your AP includes an RS-232-C communications cable (Part No. 17-831010-00) that connects between Port B on the AP and the modem, as listed in Table C-1.

Table C-1
Application Processor (Port B)-to-modem cable

9-Pin Female to AP			25-Pin Male to Modem	
Pin	**Signal**	**Direction**	**Signal**	**Pin**
1	DCD	←	DCD	8
2	TXD	→	TXD	3
3	RXD	←	RXD	2
4	DTR	→	DTR	20
5	GND		GND	7
6	DSR	←	DSR	6
7	RTS	→	RTS	4

Appendix D: Customized screen text

Meridian IVR allows the use of languages other than English to be used for Meridian IVR processes. This Release 2.0/I feature is known as “localization”. It is used to customize all screen text and is limited to processes which interact directly with the user through the GUI or the text based interface.

Notes:

1 Log file contents and fax interfaces will not be localized.

2 At any time the user can force the system to redisplay English text.

Table C-1
Application Processor (Port B)-to-modem cable (continued)

9-Pin Female to AP			25-Pin Male to Modem	
8	CTS	←	CTS	5
9	RI		RI	22

Appendix E: Meridian Mail platform compatibility

The following table summarizes the Meridian platforms which can be used with Meridian IVR and the compatible software releases:

Table E-1
Compatibility with Meridian Mail

Meridian Mail Platform	Link Type	Max Ports	MM Rls 8	MM Rls 9	MM Rls 9.2	MM Rls 9.4	MM Rls 9.5	MM Rls 9.6	MM Rls	ACCESS Links		# of APs
										MM 8-9	MM 10*	
8 Meg Card Option	AML/CSL	12				√		√	√	1	2	1
Modular Option (Classic)	AML/CSL	64	√							2		1
Modular Option (Classic) with MMP40	AML/CSL	64					√	√	√	2	8	1
Shelf Option	AML/CSL	24	√							1		1
Shelf Option with MMP40	AML/CSL	24					√	√	√	1	6	1
Modular Option (EC)	AML/CSL	64	√	√			√	√		2		1
Modular Option (EC) with MMP40	AML/CSL	96					√	√	√	2	8	1
Modular Option (GP)	SMDI	64	√							2		1

Table E-1
Compatibility with Meridian Mail (continued)

Meridian Mail Platform	Link Type	Max Ports	MM Rls 8	MM Rls 9	MM Rls 9.2	MM Rls 9.4	MM Rls 9.5	MM Rls 9.6	MM Rls	ACCESS Links		# of APs
										MM 8-9	MM 10*	
Modular Option (GP) with MMP40	SMDI	64					√	√	√	2	8	1
MSM	SMDI	192	√		√			√	√	4	8	2

* Speed of ACCESS Links will vary according to the number of links and number of MMail nodes.

Appendix F: ACCESS tool kit diagnostics

Meridian IVR builds upon the Meridian ACCESS product by adding a higher layer of software to facilitate call flow development and application execution. Meridian ACCESS is a hardware and software option that provides to UNIX workstations access to many features of the Meridian Mail voice messaging system.

The Meridian ACCESS "system" includes the Meridian 1, Meridian Mail, and Meridian ACCESS.

After logging on to Meridian Mail and entering the tools password (or the RSC password) you are prompted to enter the administrator password. After entering the administrator password, the Tools menu appears.

For Meridian Mail systems with Release 8 or above, choose menu option <13>, "Other", and the feature-dependent tools will be displayed. The items that appear on this menu will depend on the features that you have installed on your system. Select the ACCESS Link diagnostics option.

Verification of the ACCESS link is through the ACCESS Diagnostics menu item.

For more information about Meridian ACCESS, refer to the following manuals:

Meridian Mail System Administration Utilities (RSC) (NTP 555-7001-306)

Meridian IVR System Administration Guide (NTP 555-9001-300)

ACCESS tool kit diagnostics

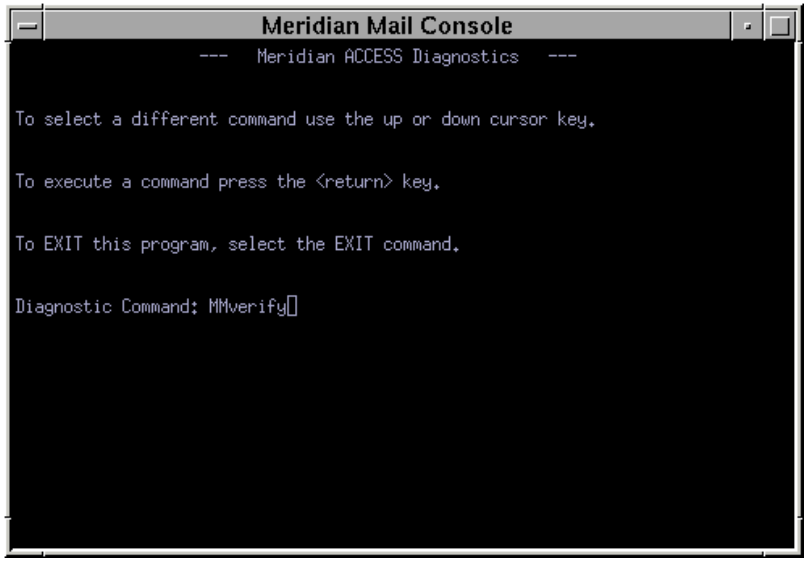
This utility can be used to diagnose and/or monitor system activity-related to Meridian ACCESS running on a UNIX processor.

The diagnostic tool includes a group of commands which allow you to verify

- whether an ACCESS link is operational
- link stability
- the ACCESS port number and link speed on Meridian Mail Release 8 and above
- the number of link outages that have occurred
- whether application traffic is present
- whether the Meridian ACCESS tasks are running
- whether the applications processor link handler is running

Figure F-1 shows the initial screen that is displayed when the diagnostic tool is loaded from the Tools menu. The last line on the screen displays the current command.

Figure F-1
Meridian ACCESS diagnostics screen



ACCESS components

There are three primary components on each side of the ACCESS link. They are briefly discussed in the following sections. If you require a more detailed description, refer to the "Overview" in the *Meridian 1 ACCESS Configuration Guide* (NTP 555-7001-315).

Meridian Mail tool kits

Tool kit (TK)

There is a TK for each voice port on the system. The TK is responsible for executing API commands received across the Meridian ACCESS link.

Tool kit Master (TKM)

TKM acts as a resource manager for tool kit tasks.

Tool kit Communications (TC)

The TC task is responsible for driving the Meridian ACCESS link. It implements a proprietary protocol that supports variable size packets, checksum error handling, virtual channels and retransmission on errors. Valid command packets received are passed on to the appropriate tool kit task.

Application processor components

ACCESS link handler

This task provides functionality equivalent to the TC for the applications processor side. The link handler is split into two tasks, one that receives data and one that handles the output.

ACCESS API library

This is the ACCESS object code library containing ACCESS API procedures that are linked in with the applications. Most procedures translate into commands that are put into a data packet and passed on to the link handler. The Meridian IVR core software has been compiled with the ACCESS API library.

Application

This is the "C" program written by either Nortel or a VAD using ACCESS API procedures to answer calls when they arrive. The application controls the Interactive Voice Response service being provided. The data communications module (dcm) process of Meridian IVR is an ACCESS application.

Procedure F-1
Running Meridian ACCESS diagnostics

1 Start at the Tools menu, Meridian ACCESS Diagnostics window activated.

2 Select the appropriate command by using the up or down cursor key (the current command is displayed on the last text line).

3 Press <Return> to execute the command.

See the following sections, "MMVERIFY" and/or "APVERIFY" for a description of the command you plan to execute.

4 When you have finished running diagnostics, select the EXIT command (by using the up or down cursor key until EXIT is displayed on the Diagnostic Command line). Press <Return> to return to the Tools menu.

Commands

Five commands, MMVERIFY, APVERIFY, SETLINK, LINKS, and OMRESE comprise the diagnostic tool on Meridian Mail.

Use a combination of APVERIFY (first) and MMVERIFY to determine link status.

MMVERIFY

This command performs the necessary checks and displays a report on the status of ACCESS software running on the Meridian Mail side of the link.

MMVERIFY reports the following items.

Link status

The report indicates whether the ACCESS link is operational.

TC status

This is an indication of whether the TC task is running. When the TC task is running, the link is either in operational mode or attempting to synchronize with the UNIX processor. If the link is operational, then the link handler on the UNIX processor is up and running.

TKM status

This is an indication of whether the TKM task is running.

Note: For the TC to be running, the TKM must be present.

Link speed and configuration

The link speed and data port settings are displayed.

Link OM information

Operational Measurement (OM) data for the TC is displayed (as shown in Figure F-2).

Link stability

There are several indicators in the OM data which can help to determine link stability. Of interest is the number of errors detected. There are several types of errors that occur. For each type, a total is calculated. These totals are then used to calculate the link error rate. It is quite normal to have some errors. The error rate will be slightly higher for more heavily-used links.

Note: If the error rate remains greater than 0.01 percent, action should be taken. On a system that has been up and running normally, the error rate should not fluctuate greatly. However, during installation or configuration changes you may experience a higher error rate for several reasons:

- The ACCESS RS-232 cable is too long (for example, greater than 50 feet).
- The application processor cannot cope with link traffic. This is probably the case if the majority of received errors are “Naks” (No Acknowledge).
- Application traffic needs to be reduced. This is probably the case if the majority of errors are on the receiving (Meridian Mail) side.

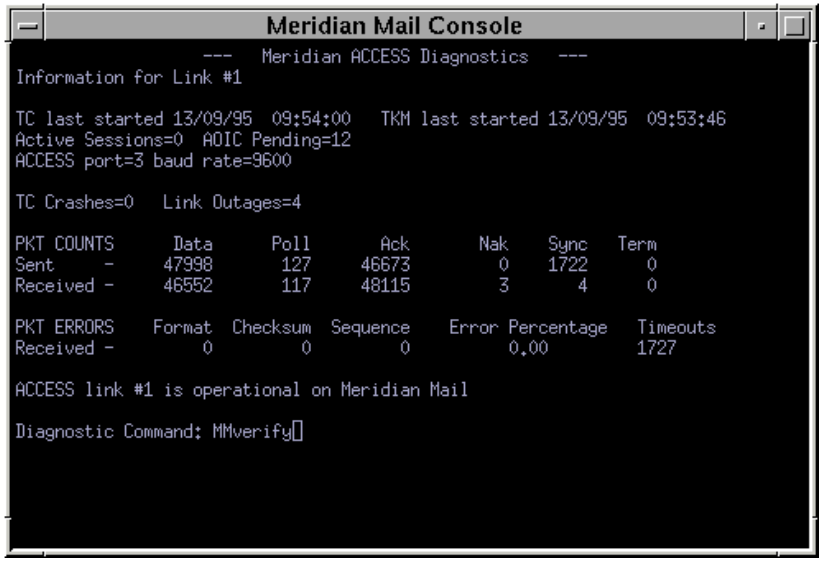
The MMVERIFY command should always be run first. If it reports that the ACCESS link is not operational, then the APVERIFY command will only confirm this.

APVERIFY should be run after MMVERIFY to confirm that the ACCESS software is running on the applications processor. In Meridian Mail release 8 this is necessary because the software on the Meridian Mail side sends poll packets.

For example, Meridian Mail cannot detect a situation in which the link cable is unplugged while the link is idle and no applications are running. In this case, the link would still show up as being operational. However, the APVERIFY command would detect the link inactivity.

Figure F-2 shows the output for the MMVERIFY command when the system is operating normally.

Figure F-2
MMVERIFY output screen example



The following are descriptions of the fields appearing on this screen.

Data the total number of data packets

Poll the number of sanity poll packets (sent only when the link is idle)

Ack the number of acknowledgment packets

Nak the number of negative acknowledgment packets (zero indicates a clear link)

Synch the number of synchronization request packets

Term the number of shutdown link request packets

Format the number of packets received in the wrong format

Checksum the number of packets received containing checksum errors

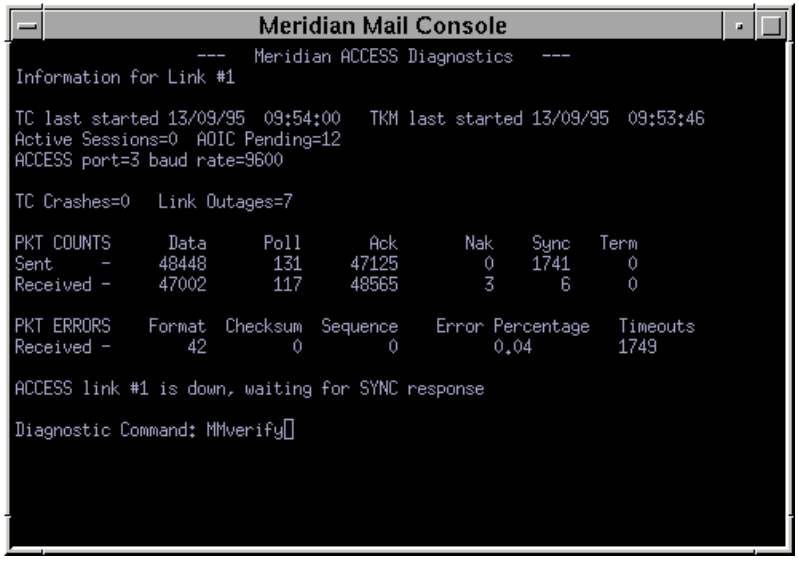
Sequence the number of packets received out of sequence

Error percentage the link receive error rate, calculated by dividing the total number of packets received by the number of packet transmission errors

Figure F-3 shows an example of MMVERIFY output when Meridian Mail is attempting to synchronize with the UNIX side, which is not responding. It will continually attempt to synchronize with the UNIX processor until the UNIX link handler responds.

If the link handler is running, the synchronization process takes only a couple of seconds. If it is not running, or if the UNIX processor is not running, this condition will continue to persist.

Figure F-3
MMVERIFY output screen example



If you repeat the MMVERIFY command while this condition exists, you will notice that the number of synchronized (Sync) packets sent continues to increase.

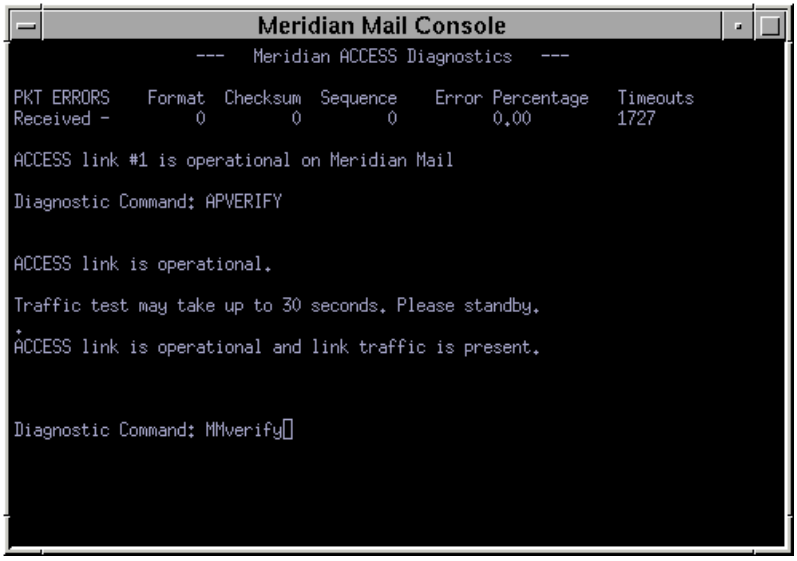
APVERIFY

This command performs the necessary checks and displays a report on the status of ACCESS software running on the applications processor. Even if MMVERIFY reports that the link is operational, you should run APVERIFY as there are certain conditions under which the link may not operate, that MMVERIFY is unable to detect (see the previous section for an example).

When APVERIFY is running, it monitors the link and reports if any application traffic was detected. If the link appears operational but no link traffic is detected within 30 seconds, the link handler on the applications processor is not functioning correctly.

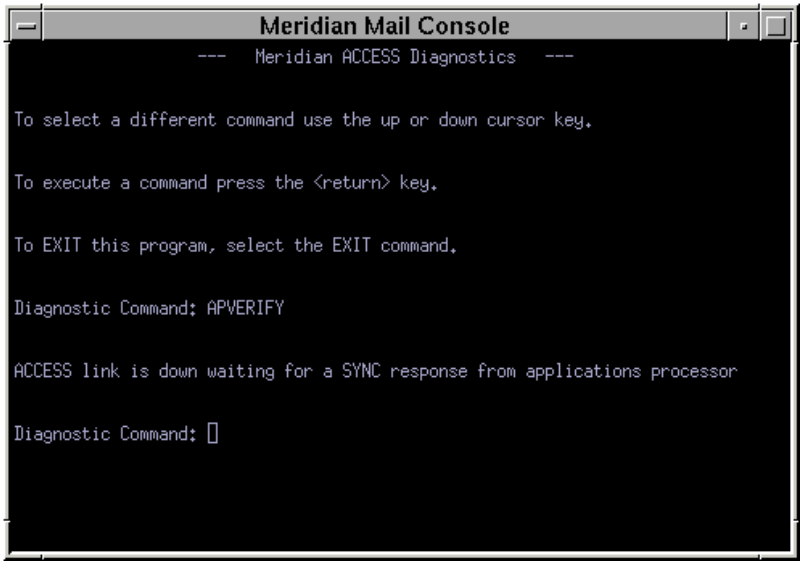
Figure F-4 shows the output for the APVERIFY command when the system is operating normally and one or more applications are active.

Figure F-4
APVERIFY output screen



Running APVERIFY when MMVERIFY indicates that the link is not operational simply confirms this, as shown in Figure F-5.

Figure F-5
APVERIFY output screen (link not operational)



OMRESET

This command is used to reset (to zero) the numbers displayed by the MMVERIFY command.

Diagnosing ACCESS configuration problems

If results indicate that there may be a configuration problem on Meridian Mail, it is useful to know the actual configuration requirements of ACCESS on Meridian Mail. The following sections discuss configuration parameters which can be checked.

Enabling ACCESS

To check if ACCESS is enabled on your Meridian Mail system, select the General System Administration option from the Meridian Mail main menu. From the next menu displayed, select General System Options. “Meridian ACCESS” will be listed under the Available Features portion of the screen.

ACCESS link cable

The ACCESS link cable should be connected to the data port that is configured as MMLINK in Meridian Mail.

Viewing hardware database settings

To view hardware database settings, select the Hardware Administration option from the Meridian Mail Main Menu. From the next menu displayed, select the Data Port Configuration option. This screen displays a list of configured system data ports only, one of which should be of device type “MMLINK”. To view the port setting, select the item in the list and press the <View> softkey.

The data port that is configured for ACCESS must have the following settings:

- Device Type must be set to “MMLink”.
- Baud Rate must be set to “9600” for Meridian Mail systems on Release 8 or above.
- Data Port Location must be specified.

Glossary

ACD
Automatic call distribution. Meridian IVR uses this feature to distribute calls to Meridian Mail voice channels.

AML
Application module link. This is the name for the CSL or ISDN/AP link.

API
Application programming interface.

Application Module Link
See AML.

application processor
A computer or workstation running Meridian IVR.

asynchronous transmission
Data transmission mode where each character is transmitted independently by using a start bit and stop bit to frame the bits representing the character.

Automatic call distribution
See ACD.

call ID
Unique call identifier. This is the unique identifier assigned to a call by the Meridian 1 switch and maintained throughout the entire duration of the call.

CAT
Channel allocation table.

channel
A telephone trunk within a cluster of APs.

CO

Central office.

CSL

Command and status link.

DN

Directory number.

DNIS

Directory number identification system. It is a service provided on a trunk. DNIS identifies to the called system the last three or four digits of the number actually dialled by the caller. The DNIS digits are sent as in-bank DTMF tones on non-ISDN trunks, or using dial pulses on dial pulse (DIP) trunks. On ISDN PRA trunks, DNIS is carried in the called party IE field of the Q.931 setup message.

DTMF

Dual tone multiple frequency tones, known as touch tones. Applications can collect information from callers by having them press telephone keys to create DTMF tones.

GOS

Grade of service.

host

A networked computer that provides applications and services to other networked computers.

key code

Serial number used during Meridian IVR system software installation to load customer-ordered options.

keylock

Meridian IVR hardware security device.

mailbox

A directory that users can access through a voice channel to store and retrieve voice messages and voice prompts. Each mailbox has its own password.

Meridian 1

A telephone switch (usually owned by a larger organization or company) that allows efficient routing of calls among all of the telephone sets connected to it. These switches are connected to a public central office (CO) to have access to a public telephone network. They can also be connected directly to another Meridian 1 to be part of a private telephone network.

Meridian ACCESS

The software interface between the application module running Meridian IVR and Meridian Mail.

Meridian IVR software

A set of integrated programs that allow you to develop and execute IVR applications.

Meridian Mail

A comprehensive voice processing module that manages incoming and outgoing calls and provides user services for performing various voice messaging functions.

Meridian Mail Card Option

A Meridian Mail platform which is packed in a cabinet with the Meridian 1 Option 11 switch.

Meridian Mail GP

A Meridian Mail platform configured to address the non-Meridian 1 switch environment, for example, SL-100 and DMS Centrex.

Meridian Mail Modular Option

A Meridian Mail platform housed in Meridian 1 modular cabinets. The Meridian Mail Modular Option can be used with Meridian 1 systems 21, 21A, 51, 61, 71, and 81. It can also operate as a free-standing configuration.

Meridian Mail Modular Option EC

Enhanced capacity architecture for the Meridian Mail Modular Option platform.

Meridian Mail Options

A Meridian Mail platform housed in a vacant shelf or tier of a Meridian 1 MS, LE, N, NT, XL, XN, XT, ST, or RT. The connection to the Meridian 1 is fully digital.

MLHG
Multi-line hunt group.

MSM
Message Service Module. A Meridian Mail platform for DMS and SL-100 switches.

node
A grouping composed of an application processor connected to one or more APs.

prompt
A voice recording that helps lead a caller through an application.

SMDI
Simplified message desk interface.

session
A connection to a host as defined in the trs.conf file, representing a terminal connection.

SNA
Systems Network Architecture. An IBM protocol that defines how IBM computers (and any other computer that uses the SNA protocol) transmit and receive data. This protocol is also used by many other computer hardware and software manufacturers.

system administrator
A person who is responsible for configuring APs, installing and running IVR applications, managing prompts, and running reports.

Systems Network Architecture
See SNA.

user function
Customized “C” code compiled to create a UNIX process. A Meridian IVR application can access an external user function using the USER cell.

user-defined function
An individual “C” function within a user function. Each user function may have several user-defined functions bundled together. Which user-defined function is processed is determined by the specified function code.

usr
User function process. It is an essential Meridian IVR process that controls customer-written user functions.

VAD
A Value Added Developer who develops Meridian IVR applications.

Value Added Developer
See VAD.

voice channels
See channel.

voice message file
Meridian Mail voice mail messages are voice message files that are addressed and submitted to Meridian Mail for delivery.

voice segment file
A single file containing zero or more (up to 1000) voice segments. A voice segment (typically less than a minute in length) consists of recorded voice, a name, a title, and a text field usually used to store the script of the voice. By using the Voice Prompt Editor, you can create and modify voice segment files, record individual segments, and edit associated text fields. Different segments can be concatenated to form prompts. (Segments can be played using the PLAY, GDAT, PDAT, MENU, or HANG cell.)

Meridian IVR

Installation Guide

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