

**553-4001-111**

Electronic Private Automatic Branch Exchange and Business  
Communication Systems

**Meridian MAX**  
Installation Guide

Product release 10

Standard 2.0

January 2001

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**NORTEL**  
NETWORKS™



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Electronic Private Automatic Branch Exchange and Business Communication Systems

# **Meridian MAX**

## Installation Guide

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## About this document

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This document details the steps and procedures required to successfully install the hardware and software for your Meridian MAX system.

### Terminology

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

### Conventions

The following conventions are used throughout the Meridian MAX 10 document set.

#### **CALLS ANSWD**

Words in this typeface represent text on your screen or printed reports.

#### **{RETURN}**

Words or characters within braces and capitalized represent a specific key on your keyboard. When two or more such keys appear side by side, all the keys must be pressed simultaneously to achieve the desired effect.

#### **Example**

Press **{RETURN}** or **{CONTROL}{R}** to begin the procedure.

*Note:* **{RETURN}** and **{ENTER}** are interchangeable.

### [Commands]

Words within square brackets represent the generic name attached to a specific function key.

For more information on the function key capabilities, refer to the *Meridian MAX 10 Supervisor's User Guide* (NTP 553-4001-905), "Understanding the interface" chapter, "Function keys" section.

#### **Example**

[Commands]

### **Activity Code Report**

Bold text represents specific text you must type on your keyboard. You must always press {RETURN} after you have typed and confirmed the text so that the system can recognize that you are ready to continue.

#### **Example**

Enter **10**, followed by {RETURN}.

### *"Graphic Format Definition"*

Italicized text within quotation marks represents a specific choice you must make from a menu.

#### **Example**

Choose "*Graphic Format Definition*" from the Report Definition submenu.

### *Graph Title*

Italicized text represents the name of a specific field on a screen or report.

#### **Example**

Move the cursor to the *Display Name* field.

### *"Checking your personal profile"*

Text in quotation marks represents references to other areas of a document.

#### **Example**

Refer to the "Profile Maintenance" chapter.

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## *Meridian MAX 10 Supervisor's User Guide*

Italicized text represents references to other documents.

### **Example**

Refer to the *Meridian MAX 10 Supervisor's User Guide*.

## **Sample screens**

All screen depictions related to the Meridian Terminal Emulator (MTE) are based on a PC running the MTE software. All other screen depictions assume that you are using the DEC VT420 or a compatible workstation. If you are using a different type of workstation, there may be a difference between the function key menu as it appears on your screen and the function key menu as it appears in this document. This is due to the different keyboards that can be used with the workstation. Refer to the *Meridian MAX 10 Supervisor's User Guide* (NTP 553-4001-905), "Understanding the interface" chapter, for more information.

## **Reference to other Meridian MAX documents**

Additional information about Meridian MAX is contained in the following Nortel Networks documents:

- 553-4001-811 *Meridian MAX 10 Maintenance and Diagnostics Guide*
- 553-4001-905 *Meridian MAX 10 Supervisor's User Guide*
- 553-4001-906 *Meridian Terminal Emulator 10 User Guide*
- P0853414 *Meridian MAX 8 MSI/MEI Protocol Reference Guide*



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## Chapter 1: Introduction

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Meridian MAX is a call center application providing comprehensive Automatic Call Distribution (ACD) management and reporting capabilities designed to support the customer's information needs. Meridian MAX provides real-time ACD call statistics displays, historical reporting, and ACD configuration management.

Meridian MAX 10 is the next release in the Meridian MAX line. It continues an evolutionary strategy designed to make Nortel Networks a leading supplier of call center solutions.

**Note:** Not all products mentioned in this document are available worldwide. Contact your Meridian MAX service representative for more information.

### New features in Meridian MAX 10

Meridian MAX 10 is based on the features, operations, and capacities of Meridian MAX 9.

One of the biggest changes in Meridian MAX 10 is that it supports only one hardware platform — the Intelligent Peripheral Equipment eXtended (IPEX). The IPE, IPE-E, SNN, and SNN-E are no longer supported.

There are two versions of IPEX:

- NTJH96AA for the Option 11C system, which occupies three slots in the main or expansion cabinet
- NTJH96BA for the Option 51C–81C system, which occupies four slots in the NT8D37 IPE Equipment Module

Table 1-1 lists the new features introduced in Meridian MAX 10.

<b>Table 1-1 New Meridian MAX 10 features</b>		
<b>New features</b>	<b>Meridian MAX 10</b>	<b>Description</b>
CPU	CompactPCI Intel Dixon 333 MHz CPU card	Replaces the Motorola 680x0 series CPU used in previous releases of Meridian MAX.
Hard drive	UltraATA/66--type hard drive	Replaces the SCSI hard drives used in previous releases of Meridian MAX.
Operating system	Red Hat Linux Operating System	Replaces the Motorola SYS V/68 UNIX
Software system	CompactFlash memory card and a Meridian MAX Software Tape	The IPEX system is shipped with a bootable CompactFlash memory card. A shipped system is automatically booted from the memory card. This automatically installs a minimal Linux kernel, the rest of the Linux operating system, and the Meridian MAX application software from the tape drive.
UNIFY 6.4A Data Server ELS for Linux	Relational Database Management System (RDBMS)	The package is bundled on the Meridian MAX Software Tape.
Tape drive	20 Gbyte (compressed) Travan 20 EIDE tape drive	Replaces the 600 Mbyte tape drive and the 155 Mbyte tape drive
DHCP support for local printing		This feature allows the local printing feature to operate on PCs that are assigned IP addresses by a Dynamic Host Configuration Protocol (DHCP) server. For more information, refer to the <i>MTE User Guide</i> (NTP 553-4001-906).

## Modified features in Meridian MAX 10

Table 1-2 lists the features that have been modified in Meridian MAX 10.

<b>Table 1-2 Modified Meridian MAX features</b>	
<b>Modified features</b>	<b>Description</b>
Serial ports	The maximum number of serial ports has been reduced to eight.
Meridian 1 hardware	Meridian MAX 10 supports only the following Meridian 1 platforms: <ul style="list-style-type: none"> <li>• Option 11C</li> <li>• Option 51C (CP1, CP2, CP3, and CP4)</li> <li>• Option 61C (CP1, CP2, CP3, and CP4)</li> <li>• Option 81 (CP1, CP2, CP3, and CP4)</li> <li>• Option 81C (CP1, CP2, CP3, CP4, and CP-PII)</li> </ul>
Meridian 1 X11 software releases	Meridian MAX 10 does not support as many Meridian 1 X11 software releases. See Table 1-3.
Historical database capacity	The maximum Historical database size has been increased from 460 Mbytes to 600 Mbytes.
Customer Controlled Routing (CCR)	Meridian MAX 10 supports only the following Meridian CCR software releases: <ul style="list-style-type: none"> <li>• Meridian CCR Release 3B (CoRes 5 consists of Meridian CCR 3B and Meridian Link 4. CoRes 6 consists of Meridian CCR 3B and Meridian Link 5.)</li> <li>• Meridian CCR Release 3C (CoRes 6.42 consists of Meridian CCR 3C and Meridian Link 5C.)</li> </ul>
NAC connectivity	Meridian MAX 10 supports Network Administration Center (NAC) 2.5. The NAC's remote supervisor logon feature, however, is not supported.
—continued—	

<b>Table 1-2 (continued)</b> <b>Modified Meridian MAX features</b>	
<b>Modified features</b>	<b>Description</b>
MTE	Meridian MAX 10 only supports MTE/JMTE 9 (32-bit versions) and MTE/JMTE 10. Earlier versions of MTE are not supported. For more information, refer to the <i>MTE User Guide</i> (NTP 553-4001-906).
Supervisor workstations	Meridian MAX 10 supports only the following workstations: <ul style="list-style-type: none"> <li>• a PC running MTE and connected to Meridian MAX 10 through a LAN</li> <li>• DEC VT220/VT420 or 100% compatibles connected to Meridian MAX 10 through a serial port</li> </ul>
Printers	Meridian MAX 10 no longer supports printers that are connected through a serial port. For more information, refer to the "Printers" chapter.
Local printer definitions	The maximum number of local printer definitions that Meridian MAX can support has been increased to 720.
Modems	Meridian MAX 10 only supports modems supported by the Red Hat Linux 6.2 Operating System. For more information, refer to the "Modems" chapter.
High-Speed Link (HSL)	In Meridian MAX 10, the HSL is restricted to serial ports 3 through 8. The HSL transmits the call and agent traffic messages between the Meridian 1 and Meridian MAX.

## Meridian 1 X11 software

Table 1-3 lists the X11 software supported by Meridian MAX 10.

<b>Table 1-3 X11 software supported by Meridian MAX 10</b>						
<b>Meridian 1 hardware</b>		<b>X11 software release, issue, and call processor</b>				
		<b>Release 21.54</b>	<b>Release 22.46</b>	<b>Release 23.55</b>	<b>Release 24.25</b>	<b>Release 25.15</b>
Small systems	Option 11C	Not supported	Supported	Supported	Supported	Supported
Large systems	Option 51C	CP1	CP1, CP2	CP1, CP2 CP3, CP4	CP2, CP3 CP4	CP2, CP3 CP4
	Option 61C	CP1	CP1, CP2	CP1, CP2 CP3, CP4	CP2, CP3 CP4	CP2, CP3 CP4
	Option 81	CP1, CP2	CP1, CP2	CP1, CP2 CP3, CP4	CP2, CP3 CP4	CP2, CP3 CP4
	Option 81C	CP1, CP2	CP1, CP2	CP1, CP2 CP3, CP4	CP2, CP3 CP4	CP2, CP3 CP4, CP-P11
The "Return to Queue on No Answer" is the only new feature supported in X11 Release 23.						

## How to install Meridian MAX 10

This section outlines the procedures to install and configure the Meridian MAX 10 hardware and software. Table 1-4 lists each step in the procedure and provides a reference to the chapter in this guide, or to another guide, where you begin each step. You should refer to this procedure throughout the installation to ensure you complete the steps in the correct order.



### CAUTION

#### Avoid electrostatic discharge

Use an antistatic wrist strap when handling the IPEX module to avoid electrostatic discharge.

**Table 1-4**  
**Meridian MAX hardware and software installation procedures**

Step	Procedure	For more information, refer to
1	Plan the site for your site's hardware	"Site preparation" chapter
2	Register your peripheral equipment warranties	"Site preparation," "A word about warranties" section
3	Configure the Meridian 1 hardware and software	"Configuring the Meridian 1 hardware and software" chapter
4	Install the IPEX module	"Hardware installation: IPEX module" chapter
5	Install all required cables	"Hardware installation: IPEX module," "Cables" section
6	Install the Meridian MAX 10 software and operating system	"Software installation overview" chapter, "New software installations" chapter, and "Meridian MAX system configuration" chapter
7	Connect any required modems	"Modems" chapter
8	Install and configure the workstations	"Workstations" chapter
—continued—		

<b>Table 1-4 (continued)</b> <b>Meridian MAX hardware and software installation procedures</b>		
<b>Step</b>	<b>Procedure</b>	<b>For more information, refer to</b>
9	Enable the MAX Status Interface (MSI)	<i>MSI/MEI Protocol Reference Guide</i> (P0853414) This guide is not shipped with the Meridian MAX 10 documentation. However, it is available from your Nortel Networks distributor.
10	Enable the MAX Event Interface (MEI)	<i>MSI/MEI Protocol Reference Guide</i> (P0853414) This guide is not shipped with the Meridian MAX 10 documentation. However, it is available from your Nortel Networks distributor.
11	Set the operating modes	"Operating modes" chapter

**1-8** Introduction

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## Chapter 2: Site preparation

### Power requirements

Table 2-1 lists the power requirements for the hardware components used by the Meridian MAX. Ensure that your site can provide the needed power to run all of the equipment you require.

<b>Table 2-1 Meridian MAX power requirements</b>			
<b>Equipment</b>	<b>Voltage</b>	<b>Frequency</b>	<b>Power</b>
Meridian MAX IPEX	+5 and -48 V	N/A	142 W
DEC VT520 or 100% compatible terminal	100-240 VAC	47-63 Hz	15 W
DEC VT420 or 100%-compatible terminal (North American or worldwide models)	100-240 VAC	50-60 Hz	35 W
DEC VT220 or 100%-compatible terminal	100-240 VAC	50-60 Hz	35 W

## Environmental requirements

Ensure that your site can maintain the required environmental conditions for the Meridian MAX hardware before beginning the installation.

*Note:* At all times, the front and back panels of the Meridian 1 should be closed and latched. This ensures that the temperature within the Meridian column/cabinet remains reasonably constant and within the operating temperatures of the equipment.

### Meridian MAX IPEX module

The environmental requirements for the Meridian MAX IPEX hardware are

- operating temperature between 10°C–35°C (50°F–95°F)
- non-operating temperature between –20°C–70°C (–4°F–158°F)
- changes in temperature less than 20°C/hour (36°F/hour)
- operating humidity between 20%–80% (noncondensing)
- nonoperating humidity between 20%–90% (noncondensing)
- operating altitude between 0–3.24 km (0–10 000 ft)
- nonoperating altitude between 0–9.14 km (0–30 000 ft)

## X11 software packaging requirements

The following options are required for use with Meridian MAX software:

- Basic ACD Features (Package A) Options 40, 45, 83
- Advanced ACD Features (Package B) Options 41, 98, 116
- ACD Reports (Package C1) Option 42
- ACD Load Management (Package C2) Option 43
- ACD Link (MAX/ACD-D) Options 50, 51
- ACD Activity Code Entry Option 155
- AUXS Security Option 114
- ACD Timed Overflow Option 111

MQA is required if the following options are on your Meridian 1:

- Multiple Queue Assignment (MQA) Option 297
- Meridian Modular Sets Option 170
- Digital Sets Option 88
- Agent Priority Option 116  
(if agents are allowed to enter their priorities at the set)
- Phantom TNs Option 254  
(if automatic forwarding of Agent IDN numbers)

NACD MIS is required if the following options are equipped on your Meridian 1:

- Enhanced ACD Overflow Option 178
- Network ACD (NACD) Option 207

CCR/EAR is required if the following options are equipped on your Meridian 1:

- Enhanced ACD Routing (EAR) Option 214
- Customer Controlled Routing (CCR) Option 215

## Site layout

Each site has different restrictions and requirements for the layout of the hardware. This section identifies some of the factors to take into account when laying out the Meridian MAX site.

### ATTENTION

RS-232 cables that directly connect peripherals to the Meridian MAX must not exceed 15 meters (50 feet). This length is based on an EIA RS-232C standard. Peripherals can be farther away if self-powered limited-distance (own power supply), or dial-up modems are used.

The distance between the Meridian MAX and the customer's network device must be less than 50 meters (164 feet).

For the Option 11C, the shielded four-port cables (NT1R03JB and NT1R03KB), each with attached shielded serial cables, must be routed vertically down to the floor from the Option 11C cabinet and then run along the floor at least 2 to 3 meters from the system before exiting the room. (In the case of a raised-floor equipment room, the cables can run beneath the floor for the 2 to 3 meters.) This ensures the installation satisfies EN55022/CISPR 22 Class B requirements for radiated emissions. For installations other than Class B, this is not a requirement and cables can be routed without this constraint.

## Supervisor location

Supervisors who must use common resources (such as catalogues or inventory listings) should be placed close to the resources they require.

If the Meridian MAX system console is being used as a Supervisor Display Access (SDA) console, ensure that the workstation is located less than 15 meters (50 feet) from the Meridian MAX IPEX system. The SDA console cannot be supported through regular or limited-distance modems.

## Static electricity precautions

Ensure that the appropriate precautions are taken against the discharge of static electricity. Static electricity can seriously affect any computerized system.



**CAUTION**

**Avoid electrostatic discharge**

Use an antistatic wrist strap when handling the IPEX module to avoid electrostatic discharge.

## Multiple Queue Assignment

There are several requirements to using Multiple Queue Assignment (MQA) with Meridian MAX. These requirements include the following:

- The minimum PBX system requirements to use MQA is X11 Release 21.23 or higher.
- You must have one of the following Meridian Modular phonesets: M2008, M2216, M3905, or M2616 with Special Application Display modules. Other sets are supported in MQA environments, but they are restricted to single-queue operation as assigned through the administration interface or through Meridian MAX Configuration Control. The supported displays are NT2K25YL, NT2K28AA, NT2K26XJ, NT2K27XJ, NT2K25VH, and NT2K24SA.

For more information on MQA, refer to the *Meridian MAX 10 Supervisor's User Guide* (NTP 553-4001-905), "Using Multiple Queue Assignment" chapter.

## Configuration

The Meridian MAX system capacity is controlled by two factors—software and hardware. The software controls the amount of detailed historical information collected by the system. The hardware sets an absolute limit to the amount of information that can be processed or stored. The following subsections discuss these capacities and guide the user in choosing the best software and hardware configuration to meet specific needs.

### Platform capacities

Table 2-2 outlines the maximum capacities for the Meridian MAX 10. Not all maximums can be achieved at the same time.

<b>Table 2-2 Meridian MAX hardware platform maximums</b>					
<b>Platform</b>	<b>Number of ports</b>	<b>Supervisor/ agent positions</b>	<b>Supervisor displays</b>	<b>Number of queues</b>	<b>Number of routes/ trunks</b>
IPEX	8	240/ 1500	60	240	256/ 2000

### Local printers

Meridian MAX 10 supports only local printing. Local printing allows the Meridian MAX to route print jobs to an MTE session. The print job is then sent to a specific printer defined on the PC. These printers can be attached to any port on the PC, such as serial (COM), parallel, USB, IEEE-1394, or a network printer accessible from the PC.

The PC must be

- running Meridian Terminal Emulator (MTE) to receive reports from the Meridian MAX
- either directly connected or connected through a LAN

Meridian MAX 10 can support up to 720 local printer definitions. This number is a combination of direct connect supervisor workstations running MTE and supervisor workstations running MTE connected to the LAN. Only one local printer definition is allowed for each MTE supervisor workstation.

## Port assignments

Not all ports need to be assigned, but there are several ports that are preconfigured for a specific device and cannot be changed by the user. Table 2-3 lists the predefined ports for the different platforms.

<b>Port number</b>	<b>Asynch</b>	<b>Assignment</b>
1	DCE	Port 1 is permanently assigned to the maintenance console and cannot be changed by the user.
2	DCE	Port 2 is permanently assigned to the remote diagnostic modem and cannot be changed by the user.
3 - 8	DCE	Ports 3 to 8 can be assigned to supervisor workstations, High-Speed Link, Network Link, or Load Management Link.
	<b>Ethernet</b>	<b>Assignment</b>
	10BaseT	MTE, MSI, MEI

## IPEX peripheral limits

The IPEX platforms have eight RS-232C ports for attaching Meridian MAX peripherals. Table 2-4 lists the number and type of peripherals that can be connected to these platforms.

**Note 1:** “System console” and “maintenance console” are interchangeable terms. “Remote diagnostic modem” is also referred to as “diagnostic modem” and “external modem.”

**Note 2:** The Load Management Link must be assigned to enable Configuration Control. “Load Management Link” is also called “Configuration Control Link.” The Load Management Link and the NAC Network Link each occupy one port. The NAC Network Link is a prerequisite if the system has NAC connectivity.

## 2-8 Site preparation

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<b>Table 2-4 Meridian MAX IPEX hardware-dependent assignments</b>	
<b>Hardware assignment</b>	<b>Maximum</b>
Maintenance console	1
Remote diagnostic modem	1
High-Speed Link	1
Load Management Link	0 (without CC option) 1 (with CC option)
Serially connected or dial-up supervisor display	0 to 2
Network Link (NAC)	0 (without NAC option) 1 (with NAC option)

Table 2-5 lists the maximum number of each peripheral device allowed when the Meridian MAX IPEX has Configuration Control, NAC connectivity, or both, enabled or disabled.

<b>Table 2-5 Meridian MAX IPEX hardware-dependent assignments</b>	
<b>Hardware assignment</b>	<b>Maximum</b>
<b>Configuration Control and NAC</b>	
Maximum number of workstations connected directly or through a modem	2
Maintenance console	1
Diagnostics modem	1
High-Speed Link	1
Load Management Link	1
Network Link (NAC)	1
<b>Configuration Control without NAC</b>	
Maximum number of workstations connected directly or through a modem	2
Maintenance console	1
Diagnostics modem	1
High-Speed Link	1
Load Management Link	1
<b>Neither Configuration Control nor NAC</b>	
Maximum number of workstations connected directly or through a modem	2
Maintenance console	1
Diagnostics modem	1
High-Speed Link	1

## Dialing plans

Network ACD is compatible with either a Coordinated Dialing Plan (CDP) or a Uniform Dialing Plan (UDP). UDP is supported by either Basic Alternate Route Selection (BARS Option #57), or Network Alternate Route Selection (NARS Option #58). When Meridian MAX is configured in a Network ACD application, a seven-digit dialing plan is required. A three-digit node identification and a four-digit ACD-DN comprise the seven digits.

The following is a guideline to programming the Meridian 1 X11 software for the NACD application using CDP and UDP dialing plans. This is not a complete set of programming instructions but is intended to be a guideline to the key inputs to implement the CDP or UDP Dialing plans in an NACD environment. This assumes the ISDN network is already programmed and operational.

For specific information regarding ISDN network configuration, CDP, or UDP, refer to the following NTPs for those features:

- *Coordinated Dialing Plan Description* (NTP 553-2651-102)
- *Network/Basic Alternate Route Selection* (NTP 553-2751-100)
- *ISDN Primary Rate Interface Description and Administration* (NTP 553-2901-100)

### Seven-digit CDP dialing plan

If there is no CDP dialing plan or if the existing CDP dialing plan is seven digits long, then the CDP dialing plan can be used for the NACD application.

Overlay 86 ESN data block must have the number of digits in the CDP code (NCDP) prompt equal to seven.

Overlay 87 defines the specific three-digit Local Steering Code (LSC). The LSC must have a DMI that deletes three digits. A three-digit Distant Steering Code (DSC) is required for each Network ACD node.

Overlay 15, Customer Data Block, must also define LSC as the already-defined LSC from Overlay 87. This programming must be done at all nodes in the network.

**Note:** When defining Route List Entries in Overlay 86 that are associated with either DSCs or LOCs used with the NACD applications

- the routes must be only ISDN routes (the ISDN routes cannot step to non-ISDN routes)
- the PNI defined for the routes must be equal to the PNI defined in Overlay 15, Customer Data Block, of the node to which it is directly connected

### **UDP dialing plan**

Define AC1 or AC2 in Overlay 86, ESN Data Block.

Define Location Codes (LOC) and Home Location Code (HLOC) in Overlay 90, Network Translation Data Block, for each Network ACD node. The HLOC should have a DMI that deletes 3.

In Overlay 15, Customer Service Data Block, define HLOC as the already-defined HLOC in Overlay 90.

If AC2 is used within the NACD Routing tables, then put LOC after AC2.

If AC1 is used within the NACD Routing tables, then do not put LOC after AC2.

Either AC1 or AC2 can be used, but both cannot be used in the NACD Routing Tables per NACD node. That means node A can use AC1 in its NACD Routing Table, and node B can use AC2 in its NACD Routing Table, but node A cannot use AC1 and AC2 within its NACD Routing Table.

In Overlay 16, Route Data Block, define INAC as YES on all incoming ISDN routes in the network. This programming must be done at all nodes in the network.

The three-digit node identification is equivalent to the HLOC or LOC of the Network ACD node and is also required to be programmed in the Meridian MAX system. This programming is done in the Network Definition/Installation screen under Maintenance and Administration Programs.

### **CDP dialing plan and UDP just for NACD routing tables**

There are cases in which it is preferable to use a CDP dialing plan other than seven digits. When this is the case, CDP can be used for non-NACD environments, and UDP can be configured for just the NACD application.

Define AC1 or AC2 in Overlay 86, ESN Data Block.

Define the Location Codes (LOC) and Home Location Code in Overlay 90, Network Translation Data Block. The HLOC should have a DMI that deletes 3.

In Overlay 15, Customer Data Block, define HLOC as the already-defined HLOC in Overlay 90.

If AC2 is used within the NACD tables, then put LOC after AC2.

If AC1 is used within the NACD tables, then do not put LOC after AC2. Either AC1 or AC2, but not both, can be used in the NACD tables per NACD node. That means that node A can use AC1 in its NACD Routing Table, and node B can use AC2 in its NACD Routing Table, but node A cannot use AC1 and AC2 within its NACD Routing Table.

In Overlay 16, Route Data Block, define INAC as YES on all incoming ISDN routes in the network. This programming must be done at all nodes in the network.

The three-digit node identification is equivalent to the HLOC or LOC, or the Network ACD node, and is also required to be programmed in the Meridian MAX system. This programming is done in the Network Definition/Installation screen under Maintenance and Administration Programs.

**Note:** When assigning Route List Index (RLI) entries in Overlay 87 or Overlay 90 for DSCs and LOCs associated with NACD applications, there must be only ISDN route choices in the RLI.MAX 10.

## System performance

Meridian MAX is a message-driven system. Messages received from the Meridian 1 proliferate into many inter-task messages, which are used to drive the Meridian MAX. The real-time performance of the system depends largely on two factors: the Message Arrival Rate (MAR) and the Message Service Rate (MSR). The MAR and MSR are affected by several operational factors.

See Appendix 2 of *Automatic Call Distribution with an Auxiliary Data System—System Performance and Engineering Information* (NTP 553-2671-151) for a discussion of MAR and MSR.

### Calculating calls per hour

This section describes how to calculate the number of calls that can be supported by your Meridian MAX in a variety of scenarios.

#### Describing calls per hour

The maximum number of calls per hour (cph or call rate) for a Meridian MAX is calculated as simple calls per hour (scph).

A simple call per hour is an external call that enters an ACD-DN, answered by an agent servicing that ACD-DN, and released. This scenario generates five HSL messages. A simple abandoned call generates two HSL messages. There are more HSL messages when the call is routed through CCR, IVR, NACD, and so on.

Meridian MAX 10 allows the HSL to be connected at 9600 baud or 19 200 baud.

The maximum sustainable call rate varies depending on the load on the Meridian MAX, which depends on the features being used at the time. The maximum number of simple calls per hour supported by Meridian MAX 10 is 30 000.

The call rates stated are the rates that the Meridian MAX can support. The Meridian 1 might support maximum/peak call rates higher or lower than the Meridian MAX can support. The theoretical maximum call rate is mainly based on the number of agents and their cycle time. The true maximum call rate that a call center can sustain is the minimum of the previous three maximums. If MEI clients are connected to the Meridian MAX, their maximum call rate should also be considered.

### **Call rates at full load**

A fully loaded Meridian MAX has almost every feature in use to its maximum capacity with certain events occurring during peak day service. This causes the system to use more CPU and I/O resources.

This is a list of the most common features and events that consume a large amount of CPU and I/O resources:

- using these options: MTE, CCR, NACD, CC, NAC, MQA, and MSI
- using the allowable maximum for these options: number of queues, positions, LAN supervisor sessions, MEI-Network links, and MEI-Observe links
- using trunk-level reporting and the agent activity code feature
- storing interval data from RAM to disk
- not running midnight routines
- setting the refresh rate of the Meridian MAX supervisor display to ten seconds
- having the maximum number of Meridian MAX supervisors logged on (all using LAN MTE): one-third viewing Global Queue Statistics Display, one-third viewing Global Agent by ACD-DN Status Display, and one-third viewing Global Agent by Position Status Display
- changing shifts so that about one-third of the agents log off and on at 20 agents per second
- using the Spare Position Handling feature
- generating three simultaneous historical reports
- allowing the Historical database to be one-third of the maximum limit for the platform
- having no active MSI connections, NAC connections, or Configuration Control commands
- having one active MEI-Network connection
- having three active MEI-Observe connections

Table 2-6 provides the maximum sustainable call rate that can be supported by a fully loaded Meridian MAX. On the Meridian 1, all agents are servicing five queues (due to MQA) with call handling times of 0 seconds. Although it is unrealistic that an agent takes 0 seconds to handle a call, these tests determine how fast the Meridian MAX receives and processes HSL messages.

<b>Table 2-6 Maximum sustainable call rate at full load (with shift change)</b>		
<b>Platform</b>	<b>*scpm at 19 200 HSL baud rate</b>	<b>*scpm at 19 200 HSL baud rate</b>
IPEX	500 (or 30 000 scph)	366 (or 22 000 scph)

\* Since an agent shift change usually lasts only a matter of minutes, the call rate should be measured in simple calls per *minute* (scpm), rather than simple calls per *hour* (scph).

#### **Call rates without shift change**

Table 2-7 shows the maximum sustainable call rates based on a scenario in which a system is fully loaded but not undergoing a shift change.

<b>Table 2-7 Maximum sustainable call rate at full load (without shift change)</b>				
<b>Platform</b>	<b>HSL baud rate</b>	<b>*scph with three reports</b>	<b>**call handling with time implied</b>	<b>scph without reports</b>
IPEX	19 200	40 000	108 secs	45 000

\* These values assume that the same condition occurs for one hour. If the conditions change during the hour, the call rate must be adjusted.

\*\* This column indicates the average time an agent spends with the caller and waiting for the next call. A longer call handling time implies a smaller call rate. This column also assumes that the IPEX is handling 1500 agents.

#### **Call rates without certain features or events**

Not all call centers will use all the Meridian MAX 10 features. It is important to determine the maximum sustainable call rate for a call center that is not fully configured. It is impossible to determine all combinations, so a typical set of features and events has been determined.

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This list shows how such a call center might use the set of Meridian MAX features:

- using these options: maximum number of positions, maximum of 30 LAN supervisor sessions, CCR, NACD, CC, NAC (no MQA, no MSI, no MEI-Network, no MEI-Observe)
- using the maximum number of queues allowed for the Meridian MAX
- not using trunk-level reporting and the agent activity code feature
- storing interval data from RAM to disk
- not running midnight routines
- setting the refresh rate for the Meridian MAX supervisor display to 10 seconds
- having the maximum number of Meridian MAX supervisors logged on (all using LAN MTE): one-third viewing Global Queue Statistics Display, one-third viewing Global Agent by ACD-DN Status Display, and one-third viewing Global Agent by Position Status Display
- changing shifts so that about one-third of the agents log off and on at 20 agents per second
- not using the Spare Position Handling feature
- generating one historical report (five pages with a banner; excluding the current interval)
- allowing the Historical database to be one-third of the maximum limit for the platform
- having no active MSI connections, NAC connections, MSI connections, MEI-Network connections, MEI-Observe connections, or Configuration Control commands

Table 2-8 provides the maximum sustainable call rate that can be supported without certain features or events. On the Meridian 1, all agents are servicing one queue (no MQA) with call handling times of 0 seconds. Although it is unrealistic that an agent takes 0 seconds to handle a call, these tests determine how fast the Meridian MAX receives and processes HSL messages.

<b>Table 2-8 Maximum sustainable call rate without certain features or events</b>		
<b>Platform</b>	<b>*scpm at 19 200 HSL baud rate</b>	<b>*scpm at 19 200 HSL baud rate</b>
IPEX	500 (or 30 000 scph)	383 (or 23 000 scph)

\* Since an agent shift change usually lasts only a matter of minutes, the call rate should be measured in simple calls per *minute* (scpm), rather than simple calls per *hour* (scph).

## System reliability

Meridian MAX 10 provides automatic backup and protection against loss of data due to a power failure (when proper procedures are followed).

### Automatic backup

Data used by the Meridian MAX's displays and reports is stored for historical purposes. This historical data is backed up through the Meridian MAX automatic backup facility to minimize the loss of recent changes to the system's database (for example, in the event of a disk failure).

Database files are automatically backed up to tape every midnight. Consequently, a tape must always be loaded in the tape drive. Avoid using the same tape through two consecutive backups, as the new backup overwrites the previous one. For this reason, several backup tapes should be used and rotated daily.

For more information on the Meridian MAX's capacity to store data, refer to the "Meridian MAX system configuration" chapter.

### Power failure

If a power failure occurs, Meridian MAX automatically reboots and starts the application software as soon as power is reapplied.

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If you have the DC version of the Meridian MAX, you may have also acquired the battery backup option. This option allows you to connect your Meridian MAX to a battery.

In the event of a power failure, such a system can be brought down safely before the battery has discharged beyond its operable limit. The AC version of the Meridian MAX does not have this option.

If an Uninterruptible Power Supply (UPS) is being used, in the event of a power failure, such a system should be backed up manually, then brought down safely before the battery has discharged beyond its operable limit. If the system is not backed up before the battery has discharged beyond its operable limit, your data for that day is lost.

### Mean Time Between Failures

Table 2-9 lists the major components of the Meridian MAX IPEX module and their MTBF values.

<b>Table 2-9 Mean Time Between Failures (MTBF) for Meridian MAX IPEX module</b>	
<b>Hardware</b>	<b>MTBF (hours)</b>
Hard drive: Seagate 13 Gbyte UATA 66 ST 303021A	500 000
Tape drive: 20 Gbyte cartridge, Seagate STT200000A	250 000
CPU Carrier Board PCA, RadiSys 34076-00x	>400 000
Power/Drive Board PCA, RadiSys 34084-00x	>240 000
Iris-C CPU Board PCA, RadiSys 34218-00x	>110 000
PMCIO, Serial I/O PCA, RadiSys 34007-00x	>250 000
Meridian MAX IPEX system, RadiSys NORMAX11/21	>39 062

## A word about warranties

It is extremely important that you read and understand the warranties issued for your Meridian MAX peripheral devices. Each warranty details what you can and cannot do with the warranted item.

The utmost care has been taken to ensure that the procedures described in this guide do not void any of the warranties. However, it is still possible for an instruction to be in conflict with a warranty when a warranty changes after the publication of this guide. If you find such a condition, inform your dealer or Nortel Networks service representative.

### **ATTENTION**

Under no circumstances should you void your warranty for the sake of following any instruction given in this (or any other) document.

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## Chapter 3: Configuring the Meridian 1 hardware and software

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You must configure your Meridian 1 switch to communicate with the Meridian MAX IPEX module. There are four main steps to this process:

- 1 Changing the number of ACD-ADS customers
- 2 Configuring the auxiliary data system (ADS) block
- 3 Configuring the Meridian 1 circuit cards
- 4 Configuring the High-Speed Link and Load Management Link

### Changing the number of ACD-ADS customers

You must configure the Meridian 1 to use the Meridian MAX as an auxiliary processor for Automatic Call Distribution (ACD). To do this, you must set the value of the DCUS parameter to 1 in Overlay program 17 in the Meridian 1 software. For details on Meridian 1 parameters, refer to the *X11 Software Input/Output Guide* (NTP 553-3001-400). The procedure below provides guidelines for changing this parameter.

#### Procedure 3-1

##### To change the number of ACD-ADS customers

- 1 Log on to the Meridian 1 console, type **LD 17** to access Overlay program 17, and press **{RETURN}**.

The system displays the request prompt:

```
REQ
```

- 2 Type **CHG** and press **{RETURN}**.

The system displays the following prompt:

```
TYPE
```

### 3-2 Configuring the Meridian 1 hardware and software

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- 3 Type **PARM** (Change system parameters) to access the system parameters, and press **{RETURN}**.

The system displays the following prompt:

```
LPIB
```

- 4 Press **{RETURN}** to accept the current setting for this prompt.
- 5 Continue pressing **{RETURN}** after each subsequent prompt until the system displays the following prompt:

```
DCUS
```

- 6 Type **1** for the maximum number of ACD--ADS customers and press **{RETURN}**.
- 7 Continue pressing **{RETURN}** after each subsequent prompt until the system displays the memory stamp, followed by the request prompt, as shown below:

```
MEM AVAIL: (U/P): 4951187      USED U P: 270517 70327
TOT: 5292031
DCH AVAIL:    63      USED:    1      TOT:    64
AML AVAIL:    31      USED:    1      TOT:    32
```

```
REQ
```

- 8 Type **\*\*\*\*** and press **{RETURN}** to exit Overlay program 17.

## Configuring the ADS block

The auxiliary data system (ADS) block in the Meridian 1 allows you to use an auxiliary processor, such as the Meridian MAX, to perform call center reporting and management. You must set the parameters in the ADS block to enable the Meridian MAX to perform the functions required for your call center.

Use the ADS parameters to

- set the Agent ID mode on or off
- set the upper and lower boundaries for agent logon IDs
- set the maximum number of agents that are allowed to log on at one time
- set Multiple Queue Assignment (MQA) and its various features on or off

**Procedure 3-2**

**To configure the auxiliary data system (ADS) block**

- 1 Log on to the Meridian 1 console, type **LD 23** to access Overlay program 23, and press **{RETURN}**.

The system displays the request prompt:

```
REQ
```

- 2 Type **NEW** to add the ADS block and press **{RETURN}**.

The system displays the following prompt:

```
TYPE
```

- 3 Type **ADS** to access the auxiliary data system parameters and press **{RETURN}**.

The system displays the following prompt:

```
CUST
```

- 4 Type the customer number associated with this function and press **{RETURN}**.

The system displays the following prompt:

```
AID
```

- 5 Use Table 3-1 to enter the appropriate values for this parameter and for each subsequent ADS parameter. Press **{RETURN}** after each entry.

When you have completed the last ADS parameter, the system displays the memory stamp, followed by the request prompt, as shown below:

```
MEM AVAIL: (U/P): 4951187      USED U P: 270517 70327
                TOT: 5292031
DCH AVAIL:      63      USED:      1      TOT:      64
AML AVAIL:      31      USED:      1      TOT:      32
```

```
REQ
```

- 6 Type **\*\*\*\*** and press **{RETURN}** to exit Overlay program 23.

### 3-4 Configuring the Meridian 1 hardware and software

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<b>Table 3-1 Auxiliary data block (ADS) prompts</b>		
<b>Prompt</b>	<b>Response</b>	<b>Comment</b>
AID	(NO) Yes	Agent ID mode
IDLB	(1)--9999	Agent ID Lower Boundary
IDUB	<i>IDLB</i> -(9999)	Agent ID Upper Boundary
MQA	(NO) Yes	(Don't allow)/Allow agents to use MQA functionality
MQAS	(NO) Yes	(Don't allow)/Allow agents to specify a Supervisor ID during logon
MQAP	(NO) Yes	(Don't allow)/Allow agents to specify Priorities during logon
MQCF	(NO) Yes	(Don't allow)/Allow automatic Call Forwarding of Phantom TNs to agent sets at logon
MQCF	xxx	The MQA Call Forwarding Digits attached to the Agent IDs

## Configuring the Meridian 1 circuit cards

There are several types of circuit cards you can use to implement the High-Speed Link and Load Management Link on the Meridian 1. The card types available depend on the type of Meridian 1 switch you are using.

### Circuit cards for the Option 11C

Use the following circuit cards for implementing the HSL and the LML with the Meridian MAX:

- NTDK20 Small System Controller (SSC) circuit card (3 ports)  
The ports available for Meridian MAX links on this card are Port 1 and Port 2.
- NTDK23, NTDK25, NTDK80 Fiber Receiver circuit card (1 port)  
Since this card provides only one serial link, it can be used in configurations where only the HSL is needed.
- NTAK02 SDI/DCH Serial Data Interface (SDI) circuit card (4 ports)  
Only two of the four ports on this card can be used for connections to Meridian MAX. These are Ports 0 and 2, which must be configured as SDI.
- NTAK03 TDS/DTR Serial Data Interface (SDI) circuit card (2 ports)  
Both serial ports offered on this card can be used for Meridian MAX links.

The Option 11C PBX consists of a main cabinet and up to four additional expansion cabinets. The NTDK20 SSC card is located in Slot 0 of the main cabinet. The Fiber Receiver cards (NTDK23, NTDK25, and NTDK80) are located in Slot 0 of the expansion cabinets. The two SDI cards (SDI/DCH and TDS/DTR) can be located in any free slot of either the main cabinet or an expansion cabinet.

### Circuit cards for the Option 51C–81C

Use the following serial I/O circuit cards for implementing the HSL and LML with the Meridian MAX:

- QPC139 two-port Serial Data Interface (SDI) circuit card
- QPC841 four-port Serial Data Interface (QSDI) circuit card
- NT8D41AA Dual Port Serial Data Interface Paddle Board (XS DI)

### 3-6 Configuring the Meridian 1 hardware and software

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- NT8D41BA Quad Serial Data Interface Paddle Board (QXSDI)

The four cards listed above are capable of offering both HSL and LML on a single card.

- NT6D80 Multi-purpose Serial Data Link (MSDL) circuit card

Only the first serial port (Port 0) of an MSDL card can support asynchronous RS-232 communication. Therefore, if both HSL and LML are needed, two MSDL cards are required, one for each link.

#### Configuring the NTDK20 SSC circuit card

The NTDK20 SSC card can provide both the HSL and the LML. In addition, this card is capable of implementing an HSL at a rate of either 9600 baud or 19 200 baud.

The serial ports on this card are configured to provide a DTE interface only. Therefore, no additional work is required to set the interface of these serial ports for communication with the Meridian MAX.

To configure the NTDK20 SSC card for use with the HSL or the LML on the Meridian 1, follow the steps in Procedure 3-3.

#### Procedure 3-3

##### To configure the NTDK20 SSC circuit card for use with the High-Speed Link or the Load Management Link

- 1 If the SSC card has not been installed into the Option 11C, refer to the *Option 11C and Option 11C Mini Technical Reference Guide* (NTP 533-3011-100) for information on installing the SSC circuit card, and then continue with this procedure.
- 2 Configure the SSC card using the Meridian 1 maintenance terminal. Use the document *Software Input/Output Guide X11 Administration* (NTP 553-3001-311), and use the following steps as a guideline.
- 3 Log on to the M1 console and type **LD 17** to access Overlay program 17 to define the HSL or LML on either Port 1 or Port 2.

The system displays the request prompt:

```
REQ
```

- 4 Type **CHG** and press **{RETURN}** to change the configuration on Port 1 or Port 2.

The system displays the following prompt:

```
TYPE
```

- 5 Type **ADAN** (Action Device and Number) and press **{RETURN}** to access the configuration record.  
The system displays the following prompt:  
ADAN
- 6 Type **NEW TTY xx** and press **{RETURN}** to add a new serial TTY port, or type **CHG TTY xx** and press **{RETURN}** to change an existing serial port. The device number is represented by xx. (The range of device numbers is 0 to 15.)  
The system displays the following prompt:  
TTY\_TYPE
- 7 Type **SDI** as the TTY logical type for Option 11C, and press **{RETURN}**.  
The system displays the following prompt:  
CAB
- 8 Type the cabinet number and press **{RETURN}**; since the SSC can only be in the main cabinet, type **0**.  
The system displays the following prompt:  
CDNO
- 9 Type **0** and press **{RETURN}** to identify the card number for the SSC card.  
The system displays the following prompt:  
PORT
- 10 Type the number of the physical port on the SSC card and press **{RETURN}**; the value is either **1** or **2**.  
The system displays the following prompt:  
DES
- 11 Type the designator or name of the port and press **{RETURN}**. Label the port by typing a name up to 16 alphanumeric characters in length (for example, MAX\_HSL).  
The system displays the following prompt:  
FLOW
- 12 Type **NO** and press **{RETURN}** to disable flow control.  
The system displays the following prompt:  
BPS

### 3-8 Configuring the Meridian 1 hardware and software

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- 13** Type the baud rate for the serial port and press **{RETURN}**. If this port is the HSL, type either **9600** or **19200**. If this port is the LML, type **9600**.  
The system displays the following prompt:  
BITL
- 14** Type **8** and press **{RETURN}** to set the data bit length.  
The system displays the following prompt:  
STOP
- 15** Type **1** and press **{RETURN}** to set the number of stop bits.  
The system displays the following prompt:  
PARY
- 16** Type **NONE** and press **{RETURN}** to set the parity type.  
The system displays the following prompt:  
ENL
- 17** Type **YES** and press **{RETURN}** to enable Option 11C error messages.  
The system displays the following prompt:  
USER
- 18** Type **HSL** and press **{RETURN}** to designate the port and set the output message type for HSL, or type **ACD** and press **{RETURN}** to designate the port and set the output message types for LML.  
If you typed HSL, you have completed the procedure.  
If you typed ACD, continue to the next step.  
The system displays the following prompt:  
CUST
- 19** Type the customer number associated with this function and press **{RETURN}**.  
The system displays the following prompt:  
SSUP
- 20** Type **YES** and press **{RETURN}** to assign the device to a senior supervisor/load manager.  
The system displays the following prompt:  
APRT

- 21 Type **NO** and press **{RETURN}**; the ACD printer must be set to NO when SSUP = YES.

### **Cabling for the NTDK20 SSC circuit card**

Ensure that the DB-9 (female) connector of the Meridian 1 cable (NTBK48AA) is plugged into the SDI connector on the Option 11C connector panel. A DB-25 (male) connector on the NTBK48AA cable associated with the HSL or LML connects to its corresponding DB-25 (female) connector on either the NT1R03KB or NT1R03JB cable.

### **Configuring the NTDK23, NTDK25, or NTDK80 circuit card**

The NTDK23, NTDK25, or NTDK80 card can provide either the HSL or the LML. In addition, this card is capable of implementing an HSL at a speed of either 9600 baud or 19 200 baud.

The serial port on this card is configured to provide a DTE interface only. Therefore, no additional work is required to set the interface of this serial port for communication with the Meridian MAX.

To configure the NTDK23, NTDK25, or NTDK80 card for use with the HSL or the LML on the Meridian 1, follow the steps in Procedure 3-4.

#### **Procedure 3-4**

#### **To configure the NTDK23, NTDK25, or NTDK80 circuit card for use with the High-Speed Link or the Load Management Link**

- 1 If the circuit card has not been installed into the Option 11C, refer to *Option 11C and Option 11C Mini Technical Reference Guide* (NTP 533-3011-100) for information on installing the NTDK23, NTDK25, or NTDK80 circuit card, and then continue with this procedure.
- 2 Configure the circuit card using the Meridian 1 maintenance terminal. Use the document *Software Input/Output Guide X11 Administration* (NTP 553-3001-311), and use the following steps as a guideline.
- 3 Log on to the M1 console and type **LD 17** to access Overlay program 17 to define the HSL or LML on Port 0. Press **{RETURN}**.  
The system displays the request prompt:

REQ

- 4 Type **CHG** to change the configuration on Port 0, and press **{RETURN}**.  
The system displays the following prompt:

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TYPE

- 5 Type **ADAN** (Action Device and Number) to access the configuration record, and press **{RETURN}**.

The system displays the following prompt:

ADAN

- 6 Type **NEW TTY xx** and press **{RETURN}** to add a new serial TTY port, or type **CHG TTY xx** and press **{RETURN}** to change an existing serial port. The device number is represented by xx. (The range of device numbers is from 0 to 15.)

The system displays the following prompt:

TTY\_TYPE

- 7 Type **SDI** and press **{RETURN}** to identify the TTY logical type for Option 11C.

The system displays the following prompt:

CAB

- 8 Type the cabinet number and press **{RETURN}**. Since the NTDK23, NTDK25, or NTDK80 can only be in an expansion cabinet, the possible values are **1** to **4**.

The system displays the following prompt:

CDNO

- 9 Type **0** and press **{RETURN}** to identify the card number for the circuit card.

The system displays the following prompt:

PORT

- 10 Type **0** and press **{RETURN}** to identify the number of the physical port on the circuit card.

The system displays the following prompt:

DES

- 11 Type the designator or name of the port and press **{RETURN}**. Label the port by typing a name up to 16 alphanumeric characters in length (for example, MAX\_HSL).

The system displays the following prompt:

FLOW

- 12 Type **NO** and press **{RETURN}** to disable flow control.

The system displays the following prompt:

BPS

- 13** Type the baud rate for the serial port and press **{RETURN}**. If this port is the HSL, type either **9600** or **19200**. If this port is the LML, type **9600**.

The system displays the following prompt:

BITL

- 14** Type **8** and press **{RETURN}** to set the data bit length.

The system displays the following prompt:

STOP

- 15** Type **1** and press **{RETURN}** to set the number of stop bits.

The system displays the following prompt:

PARY

- 16** Type **NONE** and press **{RETURN}** to set the parity type.

The system displays the following prompt:

ENL

- 17** Type **YES** and press **{RETURN}** to enable Option 11C error messages.

The system displays the following prompt:

USER

- 18** Type **HSL** and press **{RETURN}** to designate the port and set the output message type for HSL, or type **ACD** and press **{RETURN}** to designate the port and set the output message types for LML.

If you typed HSL, you have completed the procedure.

If you typed ACD, continue to the next step.

The system displays the following prompt:

CUST

- 19** Type the customer number associated with this function, and press **{RETURN}**.

The system displays the following prompt:

SSUP

- 20** Type **YES** and press **{RETURN}** to assign the device to a senior supervisor/load manager.

The system displays the following prompt:

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APRT

- 21 Type **NO** and press **{RETURN}**; the ACD printer must be set to NO when SSUP = YES.

### **Cabling for the NTDK23, NTDK25, or NTDK80 circuit card**

Ensure that the DB-9 (female) connector on the Meridian 1 cable (NTAK1118) is plugged into the SDI connector on the Option 11C connector panel. The DB-25 (male) connector on the NTAK1118 cable associated with the HSL or LML connects to its corresponding DB-25 (female) connector on either the NT1R03KB or NT1R03JB cable.

### **Configuring the NTAK02 SDI/DCH circuit card**

The NTAK02 SDI/DCH circuit card can provide either the HSL or the LML. In addition, this card is capable of implementing a HSL at a speed of either 9600 baud or 19 200 baud. Only Port 0 and Port 2 on this card can be used for Meridian MAX links.

To perform the physical configuration of the SDI/DCH card, refer to *Circuit card installation and testing* (NTP 553-3001-211), and use the following guidelines:

- Enable Port 0 and Port 2 - SW1: Set DIP switches 1 and 3 to OFF
- The serial ports on this card must provide a DTE interface in order to communicate with the Meridian MAX. To set the interface for Port 0 and Port 2 to DTE:

Strap Jumper J10 across pin rows C - B

Strap Jumper J5 across pin rows C - B

To configure the NTAK02 SDI/DCH circuit card for use with the HSL or the LML on the Meridian 1, follow the steps in Procedure 3-5.

#### **Procedure 3-5**

#### **To configure the NTAK02 circuit card for use with the High-Speed Link or the Load Management Link**

- 1 If the circuit card has not been installed into the Option 11C, refer to the *Option 11C and Option 11C Mini Technical Reference Guide* (NTP 533-3011-100) for information on installing the NTAK02 circuit card, and then continue with this procedure.
- 2 Configure the circuit card using the Meridian 1 maintenance terminal. Use the document *Software Input/Output Guide X11 Administration* (NTP 553-3001-311), and use the following steps as a guideline.

- 3** Log on to the M1 console and type **LD 17** to access Overlay program 17 to define the HSL or LML on Port 0 or Port 2. Press **{RETURN}**.

The system displays the request prompt:

```
REQ
```
- 4** Type **CHG** and press **{RETURN}** to change the configuration on Port 0 or Port 2.

The system displays the following prompt:

```
TYPE
```
- 5** Type **ADAN** (Action Device and Number) and press **{RETURN}** to access the configuration record.

The system displays the following prompt:

```
ADAN
```
- 6** Type **NEW TTY xx** and press **{RETURN}** to add a new serial TTY port, or type **CHG TTY xx** and press **{RETURN}** to change an existing serial port. The device number is represented by xx. (The range of device numbers is from 0 to 15.)

The system displays the following prompt:

```
TTY_TYPE
```
- 7** Type **SDI** and press **{RETURN}** to identify the TTY logical type for Option 11C.

The system displays the following prompt:

```
CAB
```
- 8** Type the cabinet number and press **{RETURN}**; the possible values are **0** to **4**.

The system displays the following prompt:

```
CDNO
```
- 9** Type the card number for the circuit card (that is, the slot number in which the card is installed), and press **{RETURN}**; the possible values are **1** to **10**.

The system displays the following prompt:

```
PORT
```
- 10** Type the number of the physical port on the circuit card and press **{RETURN}**; this can be either **0** or **2**.

The system displays the following prompt:

```
DES
```

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- 11 Type the designator or name of the port and press **{RETURN}**. Label the port by typing a name up to 16 alphanumeric characters in length (for example, MAX\_HSL).  
The system displays the following prompt:  
FLOW
- 12 Type **NO** and press **{RETURN}** to disable flow control.  
The system displays the following prompt:  
BPS
- 13 Type the baud rate for the serial port and press **{RETURN}**. If this port is the HSL, type either **9600** or **19200**. If this port is the LML, type **9600**.  
The system displays the following prompt:  
BITL
- 14 Type **8** and press **{RETURN}** to set the data bit length.  
The system displays the following prompt:  
STOP
- 15 Type **1** and press **{RETURN}** to set the number of stop bits.  
The system displays the following prompt:  
PARY
- 16 Type **NONE** and press **{RETURN}** to set the parity type.  
The system displays the following prompt:  
ENL
- 17 Type **YES** and press **{RETURN}** to enable Option 11C error messages.  
The system displays the following prompt:  
USER
- 18 Type **HSL** and press **{RETURN}** to designate the port and set the output message type for HSL, or type **ACD** and press **{RETURN}** to designate the port and set the output message types for LML.  
If you typed HSL, you have completed the procedure.  
If you typed ACD, continue to the next step.  
The system displays the following prompt:  
CUST
- 19 Type the customer number associated with this function, and press **{RETURN}**.

The system displays the following prompt:

SSUP

- 20** Type **YES** and press **{RETURN}** to assign the device to a senior supervisor/load manager.

The system displays the following prompt:

APRT

- 21** Type **NO** and press **{RETURN}**; the ACD printer must be set to NO when SSUP = YES.

### **Cabling for the NTAK02 SDI/DCH circuit card**

Ensure that the 50-pin key telephone connector of the Meridian 1 cable (NTAK19FB) is plugged into the 50-pin key telephone connector on the Option 11C connector panel that corresponds to the slot occupied by the SDI/DCH card. A DB-25 (male) connector on the NTAK19FB cable associated with the HSL or LML connects to its corresponding DB-25 (female) connector on either the NT1R03KB or NT1R03JB cable.

### **Configuring the NTAK03 TDS/DTR circuit card**

The NTAK03 TDS/DTR circuit card can provide either the HSL or the LML. In addition, this card is capable of implementing an HSL at a speed of either 9600 baud or 19 200 baud.

The serial ports on this card are configured to provide a DTE interface only. Therefore, no additional work is required to set the interface of these serial ports for communication with the Meridian MAX.

To configure the NTAK03 TDS/DTR circuit card for use with the HSL or the LML on the Meridian 1, follow the steps in Procedure 3-6.

#### **Procedure 3-6**

#### **To configure the NTAK03 circuit card for use with the High-Speed Link or the Load Management Link**

- 1** If the circuit card has not been installed into the Option 11C, refer to the *Option 11C and Option 11C Mini Technical Reference Guide* (NTP 533-3011-100) for information on installing the NTAK03 circuit card, and then continue with this procedure.
- 2** Configure the circuit card using the Meridian 1 maintenance terminal. Use the document *Software Input/Output Guide X11 Administration* (NTP 553-3001-311), and use the following steps as a guideline.

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- 3** Log on to the M1 console and type **LD 17** to access Overlay program 17 to define the HSL or LML on Port 0 or Port 1. Press **{RETURN}**

The system displays the request prompt:

```
REQ
```
- 4** Type **CHG** and press **{RETURN}** to change the configuration on Port 0 or Port 1.

The system displays the following prompt:

```
TYPE
```
- 5** Type **ADAN** (Action Device and Number) and press **{RETURN}** to access the configuration record.

The system displays the following prompt:

```
ADAN
```
- 6** Type **NEW TTY xx** and press **{RETURN}** to add a new serial TTY port, or type **CHG TTY xx** and press **{RETURN}** to change an existing serial port. The device number is represented by xx. (The range of device numbers is from 0 to 15.)

The system displays the following prompt:

```
TTY_TYPE
```
- 7** Type **SDI** and press **{RETURN}** to identify the TTY logical type for Option 11C.

The system displays the following prompt:

```
CAB
```
- 8** Type the cabinet number and press **{RETURN}**; the possible values are **0** to **4**.

The system displays the following prompt:

```
CDNO
```
- 9** Type the card number for the circuit card (that is, the slot number in which the card is installed), and press **{RETURN}**; the possible values are **1** to **10**.

The system displays the following prompt:

```
PORT
```
- 10** Type either **0** or **1** and press **{RETURN}** to identify the number of the physical port on the circuit card.

The system displays the following prompt:

```
DES
```

- 11 Type the designator or name of the port and press **{RETURN}**. Label the port by typing a name up to 16 alphanumeric characters in length (for example, MAX\_HSL).  
The system displays the following prompt:  
FLOW
- 12 Type **NO** and press **{RETURN}** to disable flow control.  
The system displays the following prompt:  
BPS
- 13 Type the baud rate for the serial port and press **{RETURN}**. If this port is the HSL, type either **9600** or **19200**. If this port is the LML, type **9600**.  
The system displays the following prompt:  
BITL
- 14 Type **8** and press **{RETURN}** to set the data bit length.  
The system displays the following prompt:  
STOP
- 15 Type **1** and press **{RETURN}** to set the number of stop bits.  
The system displays the following prompt:  
PARY
- 16 Type **NONE** and press **{RETURN}** to set the parity type.  
The system displays the following prompt:  
ENL
- 17 Type **YES** and press **{RETURN}** to enable Option 11C error messages.  
The system displays the following prompt:  
USER
- 18 Type **HSL** and press **{RETURN}** to designate the port and set the output message type for HSL, or type **ACD** to designate the port and set the output message types for LML.  
If you typed HSL, you have completed the procedure.  
If you typed ACD, continue to the next step.  
The system displays the following prompt:  
CUST
- 19 Type the customer number associated with this function, and press **{RETURN}**.

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The system displays the following prompt:

SSUP

- 20** Type **YES** and press **{RETURN}** to assign the device to a senior supervisor/load manager.

The system displays the following prompt:

APRT

- 21** Type **NO** and press **{RETURN}**; the ACD printer must be set to NO when SSUP = YES.

#### **Cabling for the NTAK03 TDS/DTR circuit card**

Ensure that the 50-pin key telephone connector on the Meridian 1 cable (NTAK19EC) is plugged into the 50-pin key telephone connector on the Option 11C connector panel that corresponds to the slot occupied by the TDS/DTR card. A DB-25 (male) connector on the NTAK19EC cable associated with the HSL or LML connects to its corresponding DB-25 (female) connector on either the NT1R03KB or NT1R03JB cable.

#### **Configuring the QPC139 SDI circuit card**

The QPC139 Serial Data Interface (SDI) circuit card can provide both the HSL and the LML. The only baud rate supported for this card, for either link type, is 9600. Set the card's output device to *DCE (modem)*.

To perform the physical configuration of the QPC139 card, refer to *Circuit card installation and testing* (NTP 553-3001-211) and use the following guidelines:

- Set the Port 1 jumper plug to location A13
- Set the Port 2 jumper plug to location A25
- The F7 switch is used to set the device number for Port 1 and Port 2. Refer to the NTP listed above for the specific switch settings to specify the device number for a port.

To perform the software configuration of the QPC139 card for use with the HSL or the LML on the Meridian 1, follow the steps in Procedure 3-7.

**Procedure 3-7**

**To configure the QPC139 circuit card for use with the High-Speed Link or the Load Management Link**

- 1 If the QPC139 circuit card has not been installed into the Option 51C-81C, refer to *Circuit card installation and testing* (NTP 553-3001-211) for information on installing the QPC139 circuit card, and then continue with this procedure.
- 2 Configure the QPC139 circuit card using the Meridian 1 maintenance terminal. Use the document *Software Input/Output Guide X11 Administration* (NTP 553-3001-311), and use the following steps as a guideline.
- 3 Log on to the M1 console and type **LD 17** to access Overlay program 17 to define the HSL or LML on either Port 1 or Port 2. Press **{RETURN}**.

The system displays the request prompt:

REQ

- 4 Type **CHG** and press **{RETURN}** to change the configuration on either Port 1 or Port 2.

The system displays the following prompt:

TYPE

- 5 Type **ADAN** (Action Device and Number) and press **{RETURN}** to access the configuration record.

The system displays the following prompt:

ADAN

- 6 Type **NEW TTY xx** and press **{RETURN}** to add a new serial TTY port, or type **CHG TTY xx** and press **{RETURN}** to change an existing serial port. The device number is represented by xx. (Use the device number that was set during physical configuration.)

The system displays the following prompt:

CTYP

- 7 Type **SDI2** and press **{RETURN}** to identify the card type for the serial card.

The system displays the following prompt:

DNUM

- 8 Type the device number of the serial port and press **{RETURN}**; it must match the device number specified in Step 6.

The system displays the following prompt:

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DES

- 9 Type the designator or name of the port and press **{RETURN}**. Label the port by typing a name up to 16 alphanumeric characters in length (for example, MAX\_HSL).

The system displays the following prompt:

FLOW

- 10 Type **NO** and press **{RETURN}** to disable flow control.

The system displays the following prompt:

USER

- 11 Type **HSL** and press **{RETURN}** to designate the port and set the output message type for HSL, or type **ACD** and press **{RETURN}** to designate the port and set the output message types for LML.

If you typed HSL, you have completed the procedure.

If you typed ACD, continue to the next step.

The system displays the following prompt:

CUST

- 12 Type the customer number associated with this function, and press **{RETURN}**.

The system displays the following prompt:

SSUP

- 13 Type **YES** and press **{RETURN}** to assign the device to a senior supervisor/load manager.

The system displays the following prompt:

APRT

- 14 Type **NO** and press **{RETURN}**; the ACD printer must be set to NO when SSUP = YES.

#### **Cabling for the QPC139 SDI circuit card**

Ensure that the DB-25 (male) connector on the Meridian 1 cable (NT7D58Ex) is plugged into the connector on the Meridian 1 I/O panel that corresponds to the HSL or LML. The other DB-25 (male) connector on the NT7D58Ex cable connects to its corresponding DB-25 (female) connector on either the NT1R03KB or NT1R03JB cable.

## Configuring the QPC841 QSDI circuit card

The QPC841 four-port Serial Data Interface (QSDI) circuit card can provide both the HSL and the LML. The only baud rate supported for this card, for either link type, is 9600. Set the card's mode to *DCE (modem)*.

To perform the physical configuration of the QPC841 card, refer to *Circuit card installation and testing* (NTP 553-3001-211) and use the following guidelines:

- To set the mode of a port to *DCE (modem)*:
  - Port 1 – SW8 is set all to OFF, SW9 is set all to ON.
  - Port 2 – SW6 is set all to OFF, SW7 is set all to ON.
  - Port 3 – SW4 is set all to OFF, SW5 is set all to ON.
  - Port 4 – SW2 is set all to OFF, SW3 is set all to ON.
- To set the speed of a port to 9600:
  - Port 1 – SW10 is set all to OFF.
  - Port 2 – SW11 is set all to OFF.
  - Port 3 – SW12 is set all to OFF.
  - Port 4 – SW13 is set all to OFF.
- SW14 is used to set the device number for Port 1 and Port 2.
- SW15 is used to set the device number for Port 3 and Port 4. Refer to the *Circuit card installation and testing* guide for the switch settings to specify the device number for a port.

To perform the software configuration of the QPC841 card for use with the HSL or the LML on the Meridian 1, follow the steps in Procedure 3-8.

### Procedure 3-8

#### To configure the QPC841 circuit card for use with the High-Speed Link or the Load Management Link

- 1 If the QSDI circuit card has not been installed into the Option 51C-81C, refer to *Circuit card installation and testing* (NTP 553-3001-211) for information on installing the QPC841 circuit card, and then continue with this procedure.
- 2 Configure the QPC841 circuit card using the Meridian 1 maintenance terminal. Use the document *Software Input/Output Guide X11 Administration* (NTP 553-3001-311), and use the following steps as a guideline.

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- 3** Log on to the M1 console and type **LD 17** to access Overlay program 17 to define the HSL or LML on Ports 1, 2, 3, or 4 of the QSDI card. Press **{RETURN}**.

The system displays the request prompt:

REQ
- 4** Type **CHG** and press **{RETURN}** to change the configuration on Ports 1, 2, 3, or 4.

The system displays the following prompt:

TYPE
- 5** Type **ADAN** (Action Device and Number) and press **{RETURN}** to access the configuration record.

The system displays the following prompt:

ADAN
- 6** Type **NEW TTY xx** and press **{RETURN}** to add a new serial TTY port, or type **CHG TTY xx** and press **{RETURN}** to change an existing serial port. The device number is represented by xx. (Use the device number that was set during physical configuration.)

The system displays the following prompt:

CTYP
- 7** Type **SDI4** and press **{RETURN}** to identify the card type for this serial card.

The system displays the following prompt:

DNUM
- 8** Type the device number of the serial port and press **{RETURN}**. It must match the device number specified in Step 6.

The system displays the following prompt:

DES
- 9** Type the designator or name of the port and press **{RETURN}**. Label the port by typing a name up to 16 alphanumeric characters in length (for example, MAX\_HSL).

The system displays the following prompt:

FLOW
- 10** Type **NO** and press **{RETURN}** to disable flow control.

The system displays the following prompt:

USER

- 11 Type **HSL** and press **{RETURN}** to designate the port and set the output message type for HSL, or type **ACD** and press **{RETURN}** to designate the port and set the output message types for LML.

If you typed HSL, you have completed the procedure.

If you typed ACD, continue to the next step.

The system displays the following prompt:

```
CUST
```

- 12 Type the customer number associated with this function, and press **{RETURN}**.

The system displays the following prompt:

```
SSUP
```

- 13 Type **YES** and press **{RETURN}** to assign the device to a senior supervisor/load manager.

The system displays the following prompt:

```
APRT
```

- 14 Type **NO** and press **{RETURN}**; the ACD printer must be set to NO when SSUP = YES.

### **Cabling for the QPC841 QSDI circuit card**

Ensure that the DB-25 (male) connector of the Meridian 1 cable (NT7D58Ex) is plugged into the connector on the Meridian 1 I/O panel that corresponds to the HSL or LML. The other DB-25 (male) connector on the NT7D58Ex cable connects to its corresponding DB-25 (female) connector on either the NT1R03KB or NT1R03JB cable.

### **Configuring the NT8D41AA XSDI circuit card**

The NT8D41AA Dual Port Serial Data Interface Paddle Board (XSDI) circuit card can provide both the HSL and the LML. The only baud rate supported for this card, for either link type, is 9600. Set the mode of the card to *DCE (modem)*.

To perform the physical configuration of the NT8D41AA card, refer to *Circuit card installation and testing* (NTP 553-3001-211) and use the following guidelines:

- To set the mode of a port to *DCE (modem)*:
  - Port 1 – SW5 is set all to OFF, SW6 is set all to ON, except for DIP #2, which is set to OFF.

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Port 2 – SW7 is set all to OFF, SW8 is set all to ON, except for DIP #2, which is set to OFF.

- To set the speed of a port to 9600:

Port 1 – SW2 is set all to OFF.

Port 2 – SW3 is set all to OFF.

- SW4 is used to set the device number for Port 1 and Port 2. Refer to *Circuit card installation and testing* for the switch settings to specify the device number for a port.

To perform the software configuration of the NT8D41AA card for use with the HSL or the LML on the Meridian 1, follow the steps in Procedure 3-9.

#### **Procedure 3-9**

#### **To configure the NT8D41AA circuit card for use with the High-Speed Link or the Load Management Link**

- 1 If the XSDI circuit card has not been installed into the Option 51C--81C, refer to *Circuit card installation and testing* (NTP 553--3001--211) for information on installing the NT8D41AA circuit card, and then continue with this procedure.
- 2 Configure the NT8D41AA circuit card using the Meridian 1 maintenance terminal. Use the document *Software Input/Output Guide X11 Administration* (NTP 553--3001--311), and use the following steps as a guideline.
- 3 Log on to the M1 console and type **LD 17** to access Overlay program 17 to define the HSL or LML on either Port 1 or Port 2 of the XSDI card. Press **{RETURN}**.

The system displays the request prompt:

REQ

- 4 Type **CHG** and press **{RETURN}** to change the configuration on Port 1 or Port 2.

The system displays the following prompt:

TYPE

- 5 Type **ADAN** (Action Device and Number) and press **{RETURN}** to access the configuration record.

The system displays the following prompt:

ADAN

- 6** Type **NEW TTY xx** and press **{RETURN}** to add a new serial TTY port, or type **CHG TTY xx** and press **{RETURN}** to change an existing serial port. The device number is represented by xx. (Use the device number that was set during physical configuration.)

The system displays the following prompt:

CTYP

- 7** Type **XSDI** and press **{RETURN}** to identify the card type for the serial card.

The system displays the following prompt:

DNUM

- 8** Type the device number of the serial port and press **{RETURN}**; it must match the device number specified in Step 6.

The system displays the following prompt:

DES

- 9** Type the designator or name of the port and press **{RETURN}**. Label the port by typing a name up to 16 alphanumeric characters in length (for example, MAX\_HSL).

The system displays the following prompt:

FLOW

- 10** Type **NO** and press **{RETURN}** to disable flow control.

The system displays the following prompt:

USER

- 11** Type **HSL** and press **{RETURN}** to designate the port and set the output message type for HSL, or type **ACD** and press **{RETURN}** to designate the port and set the output message types for LML.

If you typed HSL, you have completed the procedure.

If you typed ACD, continue to the next step.

The system displays the following prompt:

CUST

- 12** Type the customer number associated with this function, and press **{RETURN}**.

The system displays the following prompt:

SSUP

- 13** Type **YES** and press **{RETURN}** to assign the device to a senior supervisor/load manager.

The system displays the following prompt:

APRT

- 14 Type **NO** and press **{RETURN}**; the ACD printer must be set to NO when SSUP = YES.

#### **Cabling for the NT8D41AA XSDI circuit card**

Ensure that the DB-9 (female) connector on the Meridian 1 cable (NT8D93Ax) is plugged into the connector on the Meridian 1 I/O panel that corresponds to the HSL or LML. The other DB-25 (male) connector of the NT8D93Ax cable connects to its corresponding DB-25 (female) connector on either the NT1R03KB or NT1R03JB cable.

#### **Configuring the NT8D41BA QXSDI circuit card**

The NT8D41QA Quad Serial Data Interface Paddle Board (QXSDI) circuit card can provide both the HSL and the LML. The only baud rate supported for this card, for either link type, is 9600. Set the mode of the card to *DCE (modem)*.

To perform the physical configuration of the NT8D41BA card, refer to *Circuit card installation and testing* (NTP 553-3001-211) and use the following guidelines:

- To set the mode of a port to *DCE (modem)*:
  - Port 1 – SW3: DIP switches 1, 2, 3, and 5 are set to OFF. DIP switches 4 and 6 are set to ON.
  - SW2: DIP switches 2, 4, and 6 are set to OFF. DIP switches 1, 3, and 5 are set to ON.
  - Port 2 – SW5: DIP switches 1, 2, 3, and 5 are set to OFF. DIP switches 4 and 6 are set to ON.
  - SW4: DIP switches 2, 4, and 6 are set to OFF. DIP switches 1, 3, and 5 are set to ON.
  - Port 3 – SW7: DIP switches 1, 2, 3, and 5 are set to OFF. DIP switches 4 and 6 are set to ON.
  - SW6: DIP switches 2, 4, and 6 are set to OFF. DIP switches 1, 3, and 5 are set to ON.
  - Port 4 – SW9: DIP switches 1, 2, 3, and 5 are set to OFF. DIP switches 4 and 6 are set to ON.

SW8: DIP switches 2, 4, and 6 are set to OFF.  
DIP switches 1, 3, and 5 are set to ON.

- To set the speed of a port to 9600:
  - Port 1 – SW13: DIP switch 1 is set to ON.  
DIP switches 2, 3, and 4 are set to OFF.
  - Port 2 – SW10: DIP switch 1 is set to ON.  
DIP switches 2, 3, and 4 are set to OFF.
  - Port 3 – SW11: DIP switch 1 is set to ON.  
DIP switches 2, 3, and 4 are set to OFF.
  - Port 4 – SW12: DIP switch 1 is set to ON.  
DIP switches 2, 3, and 4 are set to OFF.
- SW15 and SW16 are used to set the device number for a given port on this card. Refer to *Circuit card installation and testing* for the switch settings to specify the device number for a port.

To perform the software configuration of the NT8D41BA (QXSDI) card for use with the HSL or the LML on the Meridian 1, follow the steps in Procedure 3-10.

#### Procedure 3-10

##### To configure the NT8D41BA circuit card for use with the High-Speed Link or the Load Management Link

- 1 If the QXSDI circuit card has not been installed into the Option 51C-81C, refer to *Circuit card installation and testing* (NTP 553-3001-211) for information on installing the NT8D41BA circuit card, and then continue with this procedure.
- 2 Configure the NT8D41BA circuit card using the Meridian 1 maintenance terminal. Use the document *Software Input/Output Guide X11 Administration* (NTP 553-3001-311), and use the following steps as a guideline.
- 3 Log on to the M1 console and type **LD 17** to access Overlay program 17 to define the HSL or LML on Port 1, 2, 3, or 4. Press **{RETURN}**.  
The system displays the request prompt:  
REQ
- 4 Type **CHG** and press **{RETURN}** to change the configuration on Port 1, 2, 3, or 4.  
The system displays the following prompt:  
TYPE

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- 5 Type **ADAN** (Action Device and Number) and press **{RETURN}** to access the configuration record.

The system displays the following prompt:

```
ADAN
```
- 6 Type **NEW TTY xx** and press **{RETURN}** to add a new serial TTY port, or type **CHG TTY xx** and press **{RETURN}** to change an existing serial port. The device number is represented by xx. (Use the device number that was set during physical configuration.)

The system displays the following prompt:

```
CTYP
```
- 7 Type **SDI4** and press **{RETURN}** to identify the card type for the serial card.

The system displays the following prompt:

```
DNUM
```
- 8 Type the device number of the serial port and press **{RETURN}**; it must match the device number specified in Step 6.

The system displays the following prompt:

```
DES
```
- 9 Type the designator or name of the port and press **{RETURN}**. Label the port by typing a name up to 16 alphanumeric characters in length (for example, MAX\_HSL).

The system displays the following prompt:

```
FLOW
```
- 10 Type **NO** and press **{RETURN}** to disable flow control.

The system displays the following prompt:

```
USER
```
- 11 Type **HSL** and press **{RETURN}** to designate the port and set the output message type for HSL, or type **ACD** and press **{RETURN}** to designate the port and set the output message types for LML.

If you typed HSL, you have completed the procedure.

If you typed ACD, continue to the next step.

The system displays the following prompt:

```
CUST
```
- 12 Type the customer number associated with this function, and press **{RETURN}**.

The system displays the following prompt:

SSUP

- 13** Type **YES** and press **{RETURN}** to assign the device to a senior supervisor/load manager.

The system displays the following prompt:

APRT

- 14** Type **NO** and press **{RETURN}**; the ACD printer must be set to NO when SSUP = YES.

### **Cabling for the NT8D41BA QXSDI circuit card**

Ensure that the DB-9 (female) connector on the Meridian 1 cable (NT8D93Ax) is plugged into the connector on the Meridian 1 I/O panel that corresponds to the HSL or LML. The other DB-25 (male) connector of the NT8D93Ax cable connects to its corresponding DB-25 (female) connector on either the NT1R03KB or NT1R03JB cable.

## **Configuring the NT6D80 MSDL card**

The NT6D80 Multi-purpose Serial Data Link (MSDL) circuit card can provide either the HSL or the LML, but not both. Only Port 0 on the MSDL card can be used for links with the Meridian MAX, since it is the only port capable of asynchronous communication. This card is capable of implementing an HSL at a speed of either 9600 baud or 19 200 baud.

Port 0 of the card must provide a DTE interface in order to communicate with the Meridian MAX. The type of interface this port provides is software configured.

To perform the physical configuration of the NT6D80 card, refer to *Circuit card installation and testing* (NTP 553-3001-211) and use the following guidelines:

- To set Port 0 to RS-232:
  - SW4 is set all to OFF
  - SW8 is set all to OFF
- To specify the device number of Port 0, use switches S10 and S9. Note that S10 designates tens while S9 designates ones.

To perform the software configuration of the NT6D80 card for use with the HSL or LML on the Meridian 1, follow the steps in Procedure 3-11.

**Procedure 3-11**

**To configure the Meridian 1 NT6D80 MSDL card for use with the High-Speed Link or the Load Management Link**

- 1 If there are no MSDL cards installed on your current system, refer to *Circuit card installation and testing* (NTP 553-3001-211) for information on installing MSDL circuit cards, and continue with this procedure.

If MSDL cards are already installed on your current system, go to Step 11.

- 2 Configure the MSDL card using the Meridian 1 maintenance terminal. Use the document *X11 System Management Applications Guide* (NTP 553-3001-301), and use the following steps as a guideline. For prompts not listed, press **{RETURN}** to select the default value.

- 3 Type **LD 22** to access Overlay program 22 to verify that MSDL (222) and MSDL SDI (227) software is loaded on your system. Press **{RETURN}**.

- 4 Type **PKG 222** and press **{RETURN}** to print out whether your system has this software loaded.

If the package is not loaded, the system displays the following message:

```
MSDL PKG 222 IS RESTRICTED
```

- 5 Type **PKG 227** and press **{RETURN}** to print out whether your system has this software loaded.

If the package is not loaded, the system displays the following message:

```
MSDL PKG 227 IS RESTRICTED
```

If these packages are not equipped on your system, contact your distributor.

The system displays the following prompt:

```
REQ
```

- 6 Type **\*\*\*** and press **{RETURN}** to exit Overlay program 22.
- 7 Check your system for existing MSDL cards that can be used for HSL and LML. Verify that the switch settings of the MSDL card number (DNUM) do not conflict with other I/O devices.
- 8 If you have a new MSDL card, go to Step 11.

If you have an existing TTY configured on Port 0 of the MSDL card that you want to use for the HSL or LML, use Overlay program 37 to disable that TTY port. Contact your Meridian 1 administrator for assistance.

Type **LD 37** and press **{RETURN}** to access Overlay program 37 to disable the TTY port.

- 9** Type **DIS TTY xx** and press **{RETURN}**. The available TTY is represented by xx.

- 10** Type **\*\*\*\*** and press **{RETURN}** to exit Overlay program 37.

- 11** Type **LD 17** and press **{RETURN}** to access Overlay program 17 to define the HSL or the LML on Port 0 of the MSDL card.

The system displays the following prompt:

REQ

- 12** Type **CHG** and press **{RETURN}** to change the configuration on Port 0.

The system displays the following prompt:

TYPE

- 13** Type **ADAN** and press **{RETURN}** to access the configuration record.

The system displays the following prompt:

ADAN

- 14** Type **NEW TTY xx** and press **{RETURN}** to add a new MSDL TTY port, or type **CHG TTY xx** and press **{RETURN}** to change an existing MSDL TTY port. The device number is represented by xx.

The system displays the following prompt:

CTYP

- 15** Type **MSDL** and press **{RETURN}**.

The system displays the following prompt:

PORT 0

DES

**Note:** Port 0 is the only port that can be configured as an HSL or LML.

- 16** Label the port by typing a name up to 16 alphanumeric characters in length (for example, MAX\_HSL).

The system displays the following prompt:

BPS

- 17** Type the baud rate for the serial port and press **{RETURN}**. If this port is the HSL, type either **9600** or **19200**. If this port is the LML, type **9600**.

The system displays the following prompt:

BITL

- 18** Type **8** and press **{RETURN}** to set the data bit length.

### 3-32 Configuring the Meridian 1 hardware and software

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The system displays the following prompt:

PARY

- 19** Type **NONE** and press **{RETURN}** to set the parity type.

The system displays the following prompt:

PARM

- 20** Type **R232 DTE** and press **{RETURN}** to set the interface and transmission mode.

The system displays the following prompt:

FUNC

- 21** Press **{RETURN}** to set the MSDL card function.

The system displays the following prompt:

USER

- 22** Type **HSL** and press **{RETURN}** to designate the port and set the output message types for HSL, or type **ACD** to designate the port and set the output message types for LML.

If you designate the port for the HSL, go to Step 26.

If you designate the port for the LML, the system displays the following prompt:

CUST

- 23** Type **zz** and press **{RETURN}**. The customer number of the Meridian MAX node is represented by zz.

The system displays the following prompt:

SSUP

- 24** Type **YES** and press **{RETURN}**.

The system displays the following prompt:

APRT

- 25** Type **NO** and press **{RETURN}**.

- 26** The system displays the following prompt:

ADAN DATA SAVED  
ADAN

- 27** Type **\*\*\*** and press **{RETURN}** to exit Overlay program 17.

- 28** Type **LD 48** and press **{RETURN}** to access Overlay program 48 to disable all other applications running on the MSDL card.

**Note:** In the next step, you type a command to disable all ports on the MSDL card. If this is an existing card in use, this command might cause service disruption to any devices connected to this card.

- 29 Type **DIS MSDL xx ALL** and press **{RETURN}** to disable all ports on the MSDL card. The device number is represented by xx.  
  
A red light appears on the MSDL card. At this point, you can remove the card to check the DIP switch settings. Ensure that the settings are set correctly for RS-232 and that the MSDL card is reinstalled correctly before continuing with this procedure. Refer to *Circuit card installation and testing* (NTP 553-3001-211) for information on MSDL DIP switch settings and MSDL card installation.
- 30 Type **ENL MSDL xx FDL** and press **{RETURN}** to download the resident memory on the Meridian 1 to the MSDL firmware. The device number is represented by xx.
- 31 Type **\*\*\*\*** and press **{RETURN}** to exit Overlay program 48.
- 32 Check the Meridian MAX Error Log for indication of an HSL or LML connection. Refer to the *Meridian MAX 10 Maintenance and Diagnostics Guide* (NTP 553-4001-811), "Maintenance and administration programs: system running" chapter, "Diagnostics" section, for more information on the Meridian MAX Error Log.

#### **Cabling for the NT6D80 MSDL circuit card**

Ensure that the DB-25 (male) connector on the Meridian 1 cable (NT7D58Ex) is plugged into the connector on the Meridian 1 I/O panel that corresponds to the HSL or LML. The other DB-25 (male) connector on the NT7D58Ex cable connects to its corresponding DB-25 (female) connector on either the NT1R03KB or NT1R03JB cable.

## **Configuring the High-Speed Link and the Load Management Link**

### **Configuring the High-Speed Link**

To configure the High-Speed Link (HSL) on the Meridian 1, follow the steps in Procedure 3-12.

#### **Procedure 3-12**

##### **To configure the High-Speed Link on the Meridian 1**

- 1 Verify that the serial card being used for the HSL has been configured correctly in accordance with the procedures given earlier in this chapter.

### 3-34 Configuring the Meridian 1 hardware and software

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- 2 Verify that the correct cable for the Meridian 1 is in place and properly connected to the appropriate connector of the Meridian MAX cable (either NT1R03JB or NT1R03KB).
- 3 Configure the High-Speed Link using the Meridian 1 maintenance terminal. Use the document *Software Input/Output Guide X11 Administration* (NTP 553-3001-311), and use the following steps as a guideline.
- 4 Log on to the M1 console and type **LD 37** to access Overlay program 37 to enable the port for the HSL. Press **{RETURN}**.  
The system displays the prompt for this overlay:  
.  
.
- 5 Type **ENL TTY xx** and press **{RETURN}** to enable the device number *xx* that is associated with the HSL.
- 6 To verify that the port is enabled, type the command **STAT TTY xx** and press **{RETURN}**. The system displays the following prompt:  

```
TTY (xx): ENBL DES: abc123
```

where *xx* is the device number of the HSL port and *abc123* is the description that was given for this port when it was configured.
- 7 Exit Overlay 37 by typing **\*\*\*\***.
- 8 Type **LD 48** and press **{RETURN}** to access Overlay program 48 to enable the HSL.  
The system displays the prompt for this overlay:  
.  
.
- 9 Type **STAT HSL** and press **{RETURN}** to view the status of the HSL.  
The system displays the following prompt:  

```
DOWN
```
- 10 Type **ENL HSL** and press **{RETURN}** to enable the HSL.  
The system displays the following prompt:  

```
NRDY
```
- 11 Exit Overlay 48 by typing **\*\*\*\*** and pressing **{RETURN}**, and then log off using LOGO.
- 12 Wait for the system to display the `ADD000` prompt. When you see this prompt, the HSL is up.

## Configuring the Load Management Link

To configure the Load Management Link (LML) on the Meridian 1, follow the steps in Procedure 3-13.

### Procedure 3-13

#### To configure the Load Management Link on the Meridian 1

- 1 Verify that the serial card being used for the LML has been configured correctly in accordance with the procedures given earlier in this chapter.
- 2 Verify that the correct cable for the Meridian 1 is in place and properly connected to the appropriate connector of the Meridian MAX cable (either NT1R03JB or NT1R03KB).
- 3 Configure the Load Management Link using the Meridian 1 maintenance terminal. Use the document *Software Input/Output Guide X11 Administration* (NTP 553-3001-311), and use the following steps as a guideline.
- 4 Log on to the M1 console and type **LD 37** to access Overlay program 37 to enable the port for the LML. Press **{RETURN}**.

The system displays the prompt for this overlay:

.

- 5 Type **ENL TTY yy** and press **{RETURN}** to enable the device number yy that is associated with the LML.
- 6 To verify that the port is enabled, type the command **STAT TTY yy** and press **{RETURN}**.

The system displays the following prompt:

```
TTY (yy): ENBL DES: xyz456
```

where yy is the device number of the LML port and xyz456 is the description that was given for this port when it was configured.

- 7 Exit Overlay 37 by typing **\*\*\*\*** and pressing **{RETURN}**, and then log off using LOGO.

**3-36** Configuring the Meridian 1 hardware and software

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## Chapter 4: Hardware installation: IPEX module

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### A word about warranties

It is extremely important that you read and understand the warranties issued for your Meridian MAX peripheral devices. Each warranty details what you can and cannot do with the warranted item.

The utmost care has been taken to ensure that the procedures described in this guide do not void any of the warranties. However, it is still possible for an instruction to be in conflict with a warranty when a warranty changes after the publication of this guide. If you find such a condition, inform your dealer or Nortel Networks service representative.

**ATTENTION**

Under no circumstances should you void your warranty for the sake of following any instruction given in this (or any other) document.

## Overview

Meridian MAX 10 supports only one hardware platform — the Meridian MAX IPE eXtended (IPEX) platform.

There are two versions of IPEX:

- NTJH96AA for the Option 11C system, which occupies three slots in the main or expansion cabinet
- NTJH96BA for the Option 51C–81C system, which occupies four slots in the NT8D37 IPE Equipment Module

Table 4-1 lists the equipment and materials required to install an IPEX.



### **CAUTION**

#### **Avoid electrostatic discharge**

Use an antistatic wrist strap when handling the IPEX module to avoid electrostatic discharge.

<b>Table 4-1 Meridian MAX physical equipment and material list</b>	
<b>Equipment</b>	<b>Contents</b>
IPEX applications module	<b>CPU:</b> CompactPCI Intel Dixon 333 MHz CPU card A custom transition card bridges the Compact PCI and the IPE shelf Tip & Ring connectors. The card contains eight asynchronous RS-232 ports and one 10BaseT Ethernet port to support interconnection to the Meridian 1, system console, diagnostic modem, and Network Administration Center (NAC).
	<b>Hard drive:</b> UltraATA/66--type hard drive (or greater capacity)
	<b>Operating system:</b> Red Hat Linux Operating System
	<b>Software system:</b> CompactFlash memory card and a Meridian MAX software tape A system shipped from the factory is automatically booted from the memory card. This automatically installs a minimal Linux kernel, the rest of the Linux operating system, and the Meridian MAX application software from the tape drive.
	<b>Tape drive:</b> 20 Gbyte (compressed) Travan 20 EIDE tape drive
Cables	Meridian MAX IPEX shielded four-port cable with Ethernet (NT1R03JB) Meridian MAX IPEX shielded four-port cable (NT1R03KB)
Ferrites	For Option 11C only, two snap-on ferrite devices (A0376837) for the NT1R03JB and NT1R03KB cables (For information on installing the ferrite devices on the cables, refer to the "Installing the input/output cables—Option 11C" in this chapter.)
—continued—	

4-4 Hardware installation: IPEX module

<b>Table 4-1 (continued) Meridian MAX physical equipment and material list</b>	
<b>Equipment</b>	<b>Contents</b>
Supervisor workstations	<ul style="list-style-type: none"> <li>• a PC running MTE and connected to Meridian MAX 10 through a LAN or serial port</li> <li>• DEC VT220/VT420 or 100% compatibles connected to Meridian MAX 10 through a serial port</li> </ul>
Printer	Meridian MAX 10 no longer supports printers that are connected through a serial port. For more information, refer to the "Printers" chapter.
Modems	Meridian MAX 10 supports any modems supported by the Red Hat Linux 6.2 Operating System. For more information, refer to the "Modems" chapter.
Documentation	<p>553-4001-905 <i>Meridian MAX 10 Supervisor's User Guide</i> P0853414    <i>Meridian MAX 8 MSI/MEI Protocol Reference Guide</i> (applicable also to MSI/MEI interfaces in Meridian MAX 9 and Meridian MAX 10)</p> <p>553-4001-906 <i>MTE 10 User Guide</i> A0662798 (includes the following set of NTPs): 553-4001-111 <i>Meridian MAX 10 Installation Guide</i> 553-4001-811 <i>Meridian MAX 10 Maintenance and Diagnostics Guide</i></p>
Miscellaneous supplies	<p>*Use order code A0830819 to order a blank 20 Gbyte Travan NS--20 data cassette tape for the Meridian MAX IPEX module. *A minimum of three blank Travan tapes is recommended.</p>

## Hardware installation overview procedure

To install the Meridian MAX IPEX platform, follow these steps.

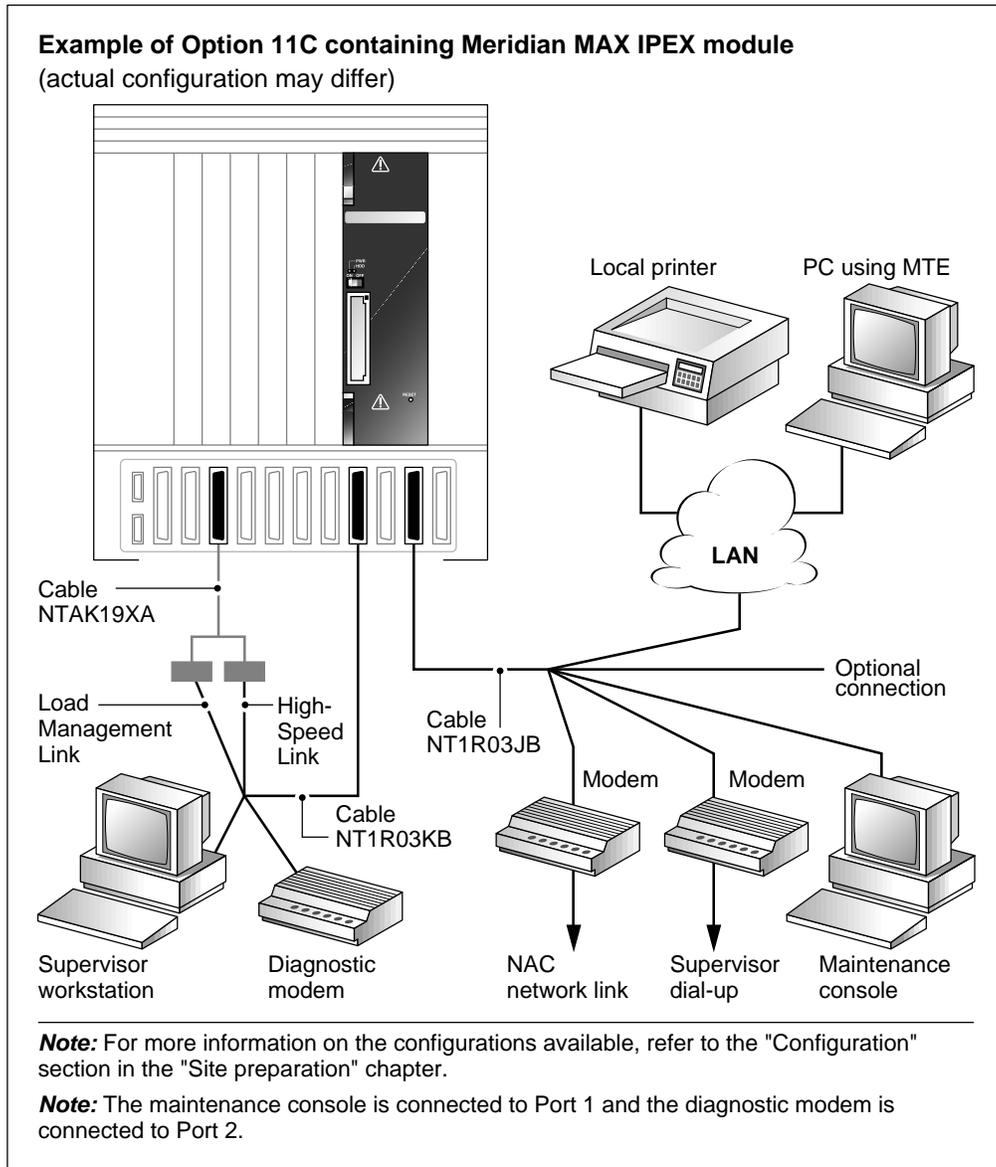
- 1** Prepare a site to install the Meridian MAX IPEX platform.  
For more information, refer to the “Site preparation” chapter.
- 2** Register the peripheral equipment warranties.  
For more information, refer to the “A word about warranties” section.
- 3** Configure the Meridian 1 hardware and software.  
For more information, refer to the “Configuring the Meridian 1 hardware and software” chapter.
- 4** Install the IPEX module and establish the Ethernet connection.  
For more information, refer to the “Installing the IPEX module—Option 11C” section or the “Installing the IPEX module—Option 51C–81C” section.
- 5** Install all required cables.  
For more information, refer to the “Installing the input/output cables—Option 11C” section, the “Installing the input/output cables—Option 51C–81C” section, or the “Cables” section.
- 6** Power up the IPEX module.
- 7** Install and configure the Meridian MAX 10 software and operating system.  
For more information, refer to the “Software installation overview” chapter and continue to the “New software installations” chapter and the “Meridian MAX system configuration” chapter
- 8** Connect the modem.  
For more information, refer to the “Modems” chapter.
- 9** Install and configure the workstations.  
For more information, refer to the “Workstations” chapter.

## Hardware layout

Figure 4-1 shows a simplified overview of the hardware layout for the Meridian MAX IPEX Option 11C module installation. For more information on the configurations available, refer to the “Configuration” section in the “Site preparation” chapter.

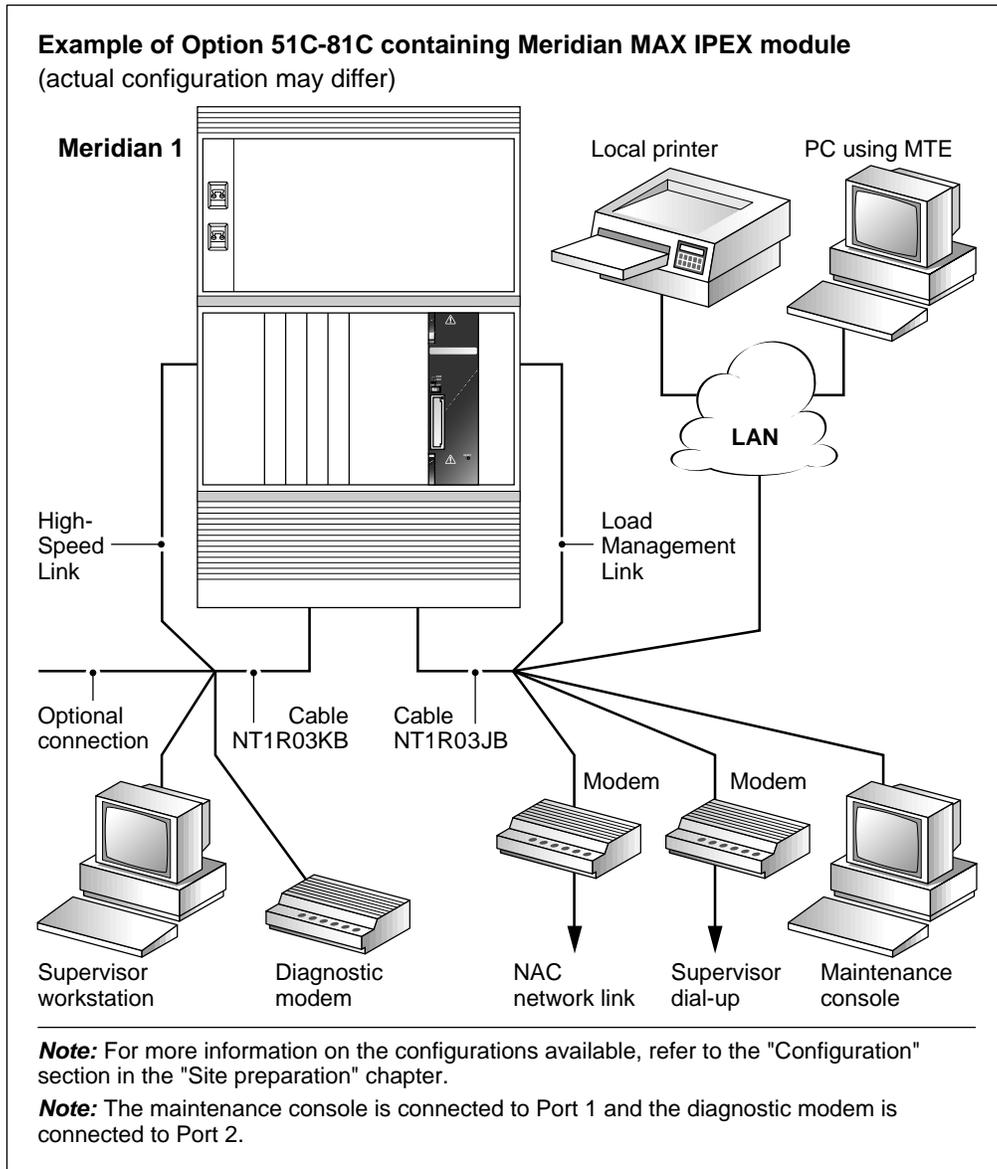
Figure 4-2 shows a simplified overview of the hardware layout for the Meridian MAX IPEX Option 51C–81C module installation. These figures are intended to show how the equipment is interconnected. The actual layout of your site might be quite different (see the “Site layout” section of the “Site preparation” chapter).

**Figure 4-1**  
**Meridian MAX IPEX installation overview—Option 11C**



G101606

**Figure 4-2**  
**Meridian MAX IPEX installation overview—Option 51C-81C**



G101605

## Installing the IPEX module—Option 11C

If you have obtained a new Meridian MAX IPEX system, the module is already assembled. It is necessary for you to insert the module into the Option 11C. The IPEX module is hot-pluggable.

When you remove the front panel of the main cabinet of the Option 11C or the front panel of an expansion cabinet, there are a number of slots numbered 2 to 9 in the main cabinet and 11 to 20 in the expansion cabinet. You can place the Meridian MAX IPEX in any of these slots, except Slots 10–12, which are reserved for Meridian Mail.

The Meridian MAX IPEX occupies any three consecutive slots. The slot positions of existing applications determine the slot placement of the IPEX module. You must also consider the slot placements of future applications for your system when deciding the slot placement for your IPEX module.

When the slot placement has been determined, slowly slide the IPEX module along the slot rails into the cabinet, making certain that the latches at the top and bottom of the module are in an unlatched position, until it is firmly in place. Make sure the latches at the top and bottom of the module are secured.

## Installing the input/output cables—Option 11C

### Main cabinet

Two shielded four-port cables connect the Meridian MAX IPEX to the serial supervisor workstations, system console, diagnostic modem, Meridian 1, and other peripheral devices. The NT1R03JB cable has a 50-pin telephone connector on one end and four DB-25 female connectors on the other, as well as an additional Ethernet port, as shown in Figure 4-10. The NT1R03KB cable is identical to the NT1R03JB cable except that it has no additional Ethernet port, as shown in Figure 4-11.

Each of the eight female DB-25 connectors can connect to a peripheral device. The NT1R03JB cable services Ports 1, 3, 5, and 7. The NT1R03KB cable services Ports 2, 4, 6, and 8. Refer to the communication port assignment sheet (Table 4-4) when connecting peripherals to cables.

Underneath the main cabinet of the Option 11C is a connector panel with ten numbered connector receptacles. Each connector receptacle connects to the corresponding numbered card slot directly above, inside the main cabinet. The telephone connector plugs of each four-port cable are

#### 4-10 Hardware installation: IPEX module

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connected to these receptacles. The connector plugs are held in place by a removable connector panel hold-down bar.

The connector panel assignment for the NT1R03JB cable and the NT1R03KB cable in the Option 11C main cabinet is shown in Table 4-2. The connector panel assignment depends on the desired slot placement of the Meridian MAX IPEX module.

Once you have determined the correct assignments, connect the connector plugs for both the NT1R03JB cable and the NT1R03KB cable to the appropriate connector receptacles underneath the Option 11C main cabinet. For example, if your Meridian MAX IPEX module occupies slots 7, 8, and 9, connect the NT1R03JB cable to connector receptacle J9, and connect the NT1R03KB cable to connector receptacle J7. Connector receptacle J8 is not used. For Class B installations, install one snap-on ferrite device (supplied with the Meridian MAX system hardware) around each cable. The ferrite device must be installed around the cable jacket as close as possible to the connector plug that is affixed to the Option 11C I/O panel.

Make sure the connectors are secure. This allows the front panel on the Option 11C to be closed without interference from too many dangling cables.

Replace the connector panel hold-down bar, making sure the padded side is placed against the back of the telephone connector plugs.

#### **ATTENTION**

The NT1R03JB cable and the NT1R03KB cable, each with attached shielded serial cables, must be routed vertically down to the floor from the Option 11C main cabinet and then run along the floor at least 2 to 3 meters (6.5 to 10 feet) from the system before exiting the room. This ensures the installation satisfies EN55022/CISPR 22 Class B requirements for radiated emissions. For installations other than Class B, this is not a requirement and cables can be routed without this constraint.

Module slot combinations	Cable	
	NT1R03JB	NT1R03KB
2-4	J4	J2
3-5	J5	J3
4-6	J6	J4
5-7	J7	J5
6-8	J8	J6
7-9	J9	J7

### Expansion cabinet

If you are installing your Meridian MAX IPEX module into an Option 11C expansion cabinet, the process is very similar to an installation in the main cabinet.

Two shielded four-port cables are used to connect the Meridian MAX IPEX to the serial supervisor workstations, system console, diagnostic modem, Meridian 1, and other peripheral devices. The NT1R03JB cable has a 50-pin telephone connector on one end, and four DB-25 female connectors on the other, as well as an additional Ethernet port, as shown in Figure 4-10. The NT1R03KB cable is identical to the NT1R03JB cable except that it has only four DB-25 female connectors, as shown in Figure 4-11.

Each of the eight DB-25 connectors can connect to a peripheral device. The NT1R03JB cable services Ports 1, 3, 5, and 7. The NT1R03KB cable services Ports 2, 4, 6, and 8. Refer to the communication port assignment sheet (Table 4-4) when connecting peripherals to cables.

Underneath the expansion cabinet of the Option 11C is a connector panel with ten numbered connector receptacles. Each connector receptacle connects to the corresponding numbered slot directly above, inside the expansion cabinet. The telephone connectors of each four-port cable are connected here. These connectors are held in place by a removable connector panel hold-down bar.

The connector panel assignment for the NT1R03JB cable and the NT1R03KB cable in the Option 11C is shown in Table 4-3. The connector

#### 4-12 Hardware installation: IPEX module

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panel assignment depends on the desired slot placement of the Meridian MAX IPEX module.

Once you have determined the correct assignments, connect the connector plugs for both the NT1R03JB cable and the NT1R03KB cable to the appropriate connector receptacles underneath the Option 11C expansion cabinet. For example, if your Meridian MAX IPEX module occupies slots 14, 15, and 16, connect the NT1R03JB cable to connector receptacle J16, and connect the NT1R03KB cable to connector receptacle J14. Connector receptacle J15 is not used. For Class B installations, install one snap-on ferrite device (supplied with the Meridian MAX system hardware) around each cable. The ferrite device must be installed around the cable jacket as close as possible to the connector plug that is affixed to the Option 11C I/O panel.

Make sure the connectors are secure. Replace the connector panel hold-down bar, making sure the padded side is placed against the back of the connectors.

#### **ATTENTION**

The NT1R03JB cable and the NT1R03KB cable, each with attached shielded serial cables, must be routed vertically down to the floor from the Option 11C expansion cabinet and then run along the floor at least 2 to 3 meters (6.5 to 10 feet) from the system before exiting the room. This ensures the installation satisfies EN55022/CISPR 22 Class B requirements for radiated emissions. For installations other than Class B, this is not a requirement and cables can be routed without this constraint.

*Note:* Since the Option 11C expansion cabinet can be placed above, below, beside, or even in another room from the main cabinet, the High-Speed Link port might not reach the port on the Meridian 1 serial cable configured for the High-Speed Link. If that is the case, you can extend that port using NT1R03Dx or NT1R03Ex extension cables, where x indicates the length of the cable.

Module slot combinations	Cable	
	NT1R03JB	NT1R03KB
11-13	J13	J11
12-14	J14	J12
13-15	J15	J13
14-16	J16	J14
15-17	J17	J15
16-18	J18	J16
17-19	J19	J17
18-20	J20	J18

### Assigning the input/output ports—Option 11C

There are eight ports available for various peripheral devices, but two of them are configured for a specific peripheral. Port 1 is configured for the console port and Port 2 is configured for the diagnostic modem. The remaining peripherals and links can be configured on any of Ports 3 to 8.

*Note:* The Configuration Control feature uses a Load Management Link that is also referred to as a Configuration Control Link.

Table 4-4 provides a chart that lists all of the assignable ports and shows the type of device that can be connected to each port. As you decide upon the device to connect to each port, enter the device name in the space provided. If you are assigning a supervisor workstation or network link, you must specify the type of connection: direct, dial-up at 2400 baud, or dial-up at 9600 baud. This information is requested during the software installation.

Note the following abbreviations:

- High-Speed Link (HSL)
- Load Management Link (LML)
- Network Link (NetLink) (NL)
- Supervisor Workstation (SW)

#### 4-14 Hardware installation: IPEX module

Note the following details for connection types:

- Serial/dial-up connection at 2400 baud (2400)
- Serial/dial-up connection at 9600 baud (9600)
- Serial connection at 19 200 baud (19 200)

**Note:** The “Connection type” column in the following table lists all of the possible connections. Some connection types cannot be applied to some available devices. For example, the only connection type possible for a High-Speed Link is a direct connection.

Port	NT1R03 Cable	Devices available	Device selected	Connection type
1	JB	CONSOLE PORT	CONSOLE PORT	N/A
2	KB	DIAGNOSTIC MODEM	DIAGNOSTIC MODEM	N/A
3	JB	SW / HSL / LML / NL		2400/9600/19 200
4	KB	SW / HSL / LML / NL		2400/9600/19 200
5	JB	SW / HSL / LML / NL		2400/9600/19 200
6	KB	SW / HSL / LML / NL		2400/9600/19 200
7	JB	SW / HSL / LML / NL		2400/9600/19 200
8	KB	SW / HSL / LML / NL		2400/9600/19 200

Table 4-5 provides a chart that shows the Ethernet connection between the Meridian MAX IPEX module and the customer’s Local Area Network (LAN). This connection is between the Ethernet connector on the NT1R03JB four-port cable and the customer’s network device (hub, router, and so on). Nortel Networks does not supply the cable to use for this connection; the customer must supply it. It must be a shielded Category 5 cable to protect the electromagnetic integrity of the IPEX module within the Meridian 1 system.

The IPEX is fix-configured for 10 Mbps full-duplex operation; the customer’s network device must be similarly configured.

**ATTENTION**

The distance between the Ethernet port on the NT1R03JB cable and the customer's network device must be less than 50 meters (164 feet). If the distance is greater, the customer equipment must be moved closer or an additional network device must be added to reduce the distance to less than 50 meters.

**Table 4-5**  
Option 11C communication port assignment sheet (Ethernet)

Port	NT1R03 Cable	Devices available	Device selected	Connection type
1	JB	MTE / MSI / MEI	N/A	10BaseT

## Installing the IPEX module—Option 51C-81C

If you have obtained a new Meridian MAX IPEX system for the Option 51C-81C, the module is already assembled. You must determine the slot placement for the IPEX module and then insert it into the Intelligent Peripheral Equipment (IPE) shelf (NT8D37). The IPEX module is hot-pluggable. You can then install the input/output cables. These procedures are explained below.

**Note:** If your IPE shelf is not properly configured for 24-port cards, rerouting of the backplane cabling is necessary. See the “Cable rerouting for Option 51C-81C for IPEX modules” section for rerouting procedures, and then return to this section.

When you remove the front panel of the IPE shelf of the Option 51C-81C, there are slots numbered 0 to 15 where the Meridian MAX IPEX module can be inserted. It can occupy any four consecutive slots that are wired for 24 pairs of Tip & Ring. The slot positions of existing applications already installed in the IPE shelf determine the slot positions of the IPEX module. You must also consider the slot placements of future applications for your system when deciding the slot placement for your IPEX module.

To insert the IPEX module, slowly slide the module along the slots into the shelf, making sure the latches at the top and bottom of the module are in an

unlatched position, until it is firmly in place. Make sure the latches at the top and bottom of the module are secured.

### **Installing the input/output cables—Option 51C-81C**

Two shielded four-port cables are used to connect the Meridian MAX IPEX to the serial supervisor workstations, system console, diagnostic modem, Meridian 1, and other peripheral devices. The NT1R03JB cable has a 50-pin telephone connector on one end, and four DB-25 female connectors on the other, as well as an additional Ethernet port, as shown in Figure 4-10. The NT1R03KB cable is identical to the NT1R03JB cable except that it has only four DB-25 female connectors, as shown in Figure 4-11.

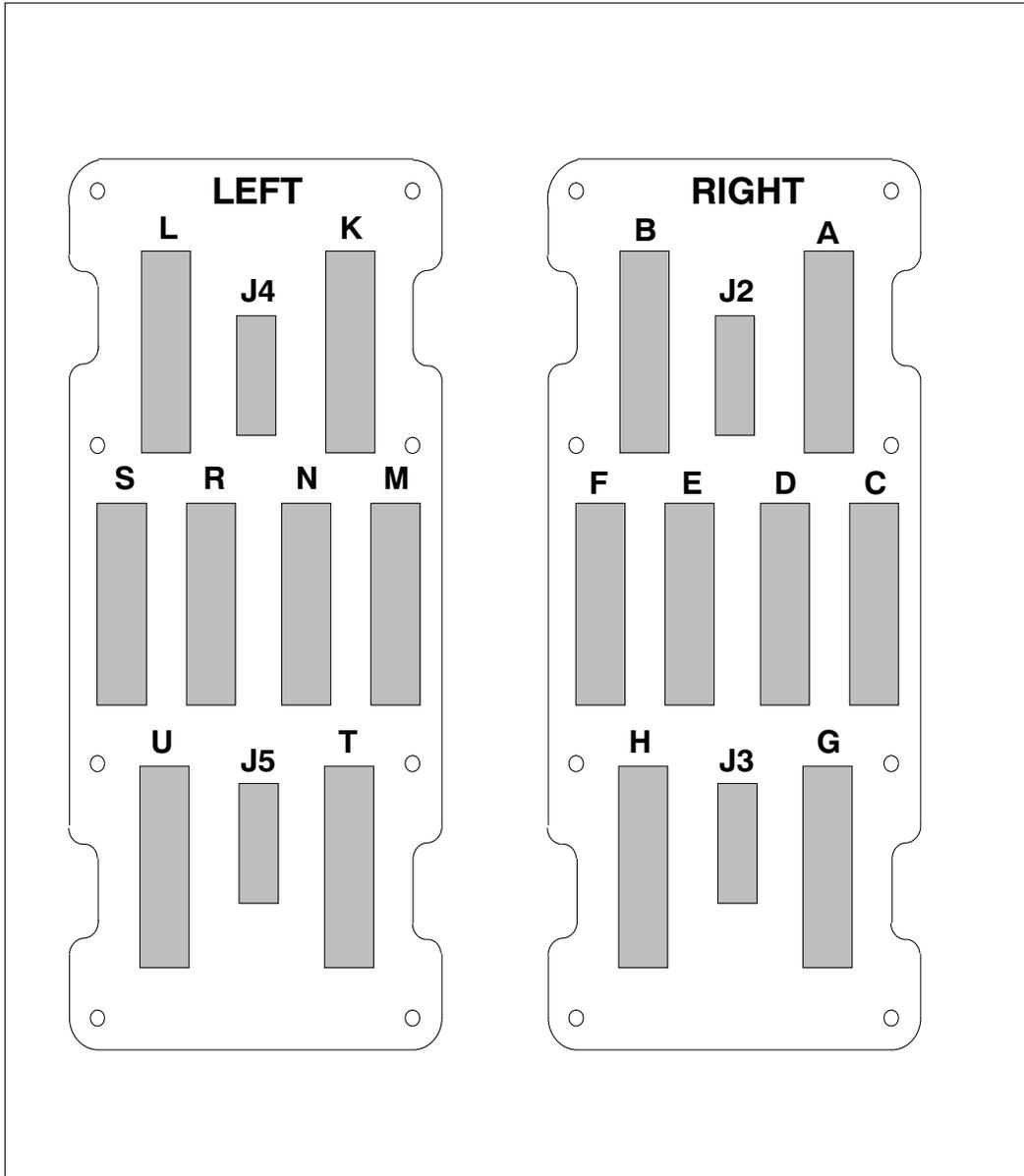
Each of the eight DB-25 connectors can connect to a peripheral device. The NT1R03JB cable services Ports 1, 3, 5, and 7. The NT1R03KB cable services Ports 2, 4, 6, and 8. Refer to the Option 51C-81C communication port assignment sheet (see Table 4-9) when connecting peripherals to cables.

Inside the back of the IPE shelf, on the left and right of the backplane cover, are the NT8D37 IPE shelf I/O panels, as shown in Figure 4-3. The telephone connector plugs of each four-port cable are connected to these panels. The connectors on the panel are labeled with a letter between A and U. Each lettered connector is connected to a corresponding slot at the front of the Option 51C-81C.

Connect the four-port cables to the IPE shelf connectors. Make sure the connectors are secure. Table 4-6 shows to which connectors on the I/O panel the NT1R03JB cable and the NT1R03KB cable connect depending on the slot placement of the Meridian MAX IPEX in the Option 51C-81C. For example, if your Meridian MAX IPEX module occupies slots 4, 5, 6, and 7, the NT1R03JB cable connects to connector H, and the NT1R03KB cable connects to connector E.

Module slot combinations	Cable	
	NT1R03JB	NT1R03KB
0-3	D	A
1-4	E	B
2-5	F	C
3-6	G	D
4-7	H	E
8-11	N	K
9-12	R	L
10-13	S	M
11-14	T	N
12-15	U	R

Figure 4-3  
NT8D37 IPE shelf I/O panels



## Cable rerouting for Option 51C–81C

In a standard configuration, the Meridian MAX IPEX module can be placed in any peripheral slot on the Option 51C–81C IPE shelf. This is possible when the slots are fully cabled to accommodate 24 Tip & Ring pairs per slot. Meridian MAX Release 10 and later software requires Meridian 1 X11 Release 21 or later software; however, if your system formerly ran a software release prior to Meridian 1 X11 Release 18, you may need to reroute cables inside the IPE shelf.

**Note:** The IPEX can be inserted in any slot. However, to minimize cable rerouting, it is suggested to install it in slot 0, which is fully populated. The Tip & Ring cable on slot 3 should be rerouted. To reroute this cable, reconnect cable D, which is accessible from the back of the module.

In the standard backplane configuration of the NT8D37 IPE shelf using a software release prior to Meridian 1 X11 Release 18, some slots on the backplane are fully cabled to accommodate 24 Tip & Ring pairs (3 cable connectors). Most of the backplane slots, however, accommodate 16 pairs (2 cable connectors). By adding and reconfiguring cable ends in the backplane slots, 24 pairs can be connected to each backplane slot. Once the rerouting process is done, the IPE shelf can support the Meridian MAX IPEX module.

**Note:** When backplane slots are reconfigured for expanded cabling, the labeling for the NT8D37 IPE shelf must be changed at the MDF to reflect the change in the backplane slots.

Cables are designated by the letter of the I/O panel (A, B, C, and so forth) where the 50-pin cable connector is attached. Each cable has three 20-pin connectors (16 positions are used), designated 1, 2, or 3, which attach to the backplane. As per these designations, the backplane ends of the first cable are referred to as A-1, A-2, and A-3.

The location of the cable connectors on the backplane are designated by the slot number (L0 through L15 for NT8D37), and the shroud row (1, 2, 3). As per these designations, the slot positions in the first slot are referred to as L0-1, L0-2, and L0-3.

**Cable rerouting for NT8D37 IPE shelf**

In the standard 11-cable configuration for the backplane in the NT8D37 IPEX module, cables D, H, N, and U are not used. Those cables are used in the 16-cable fully expanded configuration.

Cabling for each segment can be expanded using one NT8D81AA cable/filter assembly. Cabling for the entire backplane can be expanded using four NT8D81AA cable/filter assemblies.

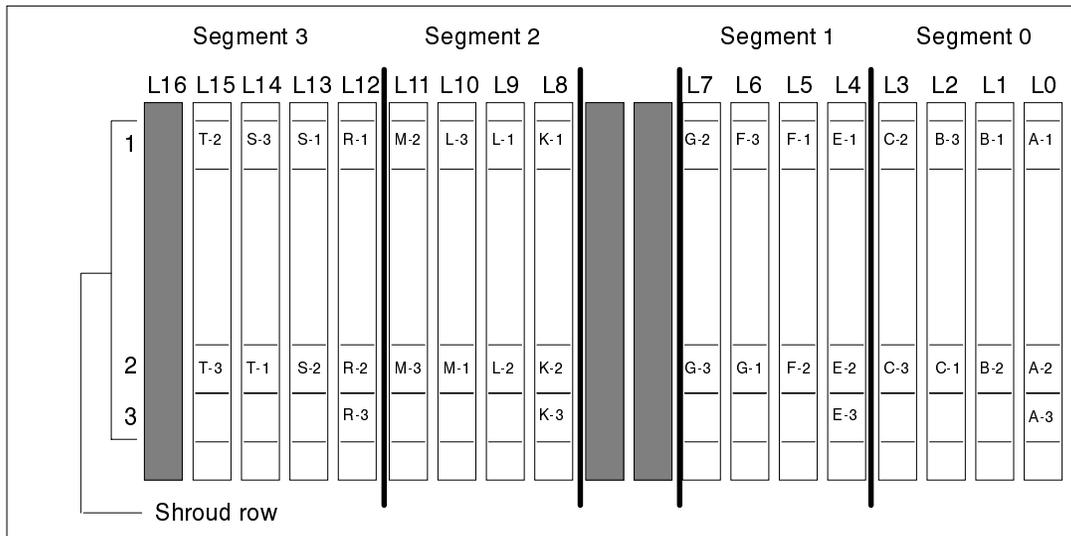
*Note:* Backplane slots 0, 4, 8, and 12 (for cables A, E, K, and R) are already fully cabled for 24 pairs, so no change is required for those slots.

Table 4-7 lists cable connections *before* cable expansion. Figure 4-4 shows the backplane slots *before* cable expansion.

Backplane slots—shroud rows			I/O panel/cable designation
L0-1	L0-2	L0-3	A
L1-1	L1-2	L2-1	B
L2-2	L3-1	L3-2	C
L4-1	L4-2	L4-3	E
L5-1	L5-2	L6-1	F
L6-2	L7-1	L7-2	G
L8-1	L8-2	L8-3	K
L9-1	L9-2	L10-1	L
L10-2	L11-1	L11-2	M
L12-1	L12-2	L12-3	R
L13-1	L13-2	L14-1	S
L14-2	L15-1	L15-2	T

**Note:** Cables, D, H, N, and U are not used in this configuration.

**Figure 4-4**  
**NT8D37 backplane cable designsations (standard configuration)**



#### NT8D37 backplane cable expansion—segment 0

- 1 Leave cable A as is in slot position L0.
- 2 Move cable end B-3 to slot position L1-3.
- 3 Remove cable C from the backplane, and connect cable ends C-1, C-2, and C-3 to slot positions L2-1, L2-2, and L2-3.
- 4 Add cable D to the I/O panel by connecting cable ends D-1, D-2, and D-3 to slot positions L3-1, L3-2, and L3-3.

#### NT8D37 backplane cable expansion—segment 1

- 1 Leave cable E as is in slot position L4.
- 2 Move cable end F-3 to slot position L5-3.
- 3 Remove cable G from the backplane, and connect cable ends G-1, G-2, and G-3 to slot positions L6-1, L6-2, and L6-3.
- 4 Add cable H to the I/O panel by connecting cable ends H-1, H-2, and H-3 to slot positions L7-1, L7-2, and L7-3.

**NT8D37 backplane cable expansion—segment 2**

- 1 Leave cable K as is in slot position L8.
- 2 Move cable end L-3 to slot position L9-3.
- 3 Remove cable M from the backplane, and connect cable ends M-1, M-2, and M-3 to slot positions L10-1, L10-2, and L10-3.
- 4 Add cable N to the I/O panel by connecting cable ends N-1, N-2, and N-3 to slot positions L11-1, L11-2, and L11-3.

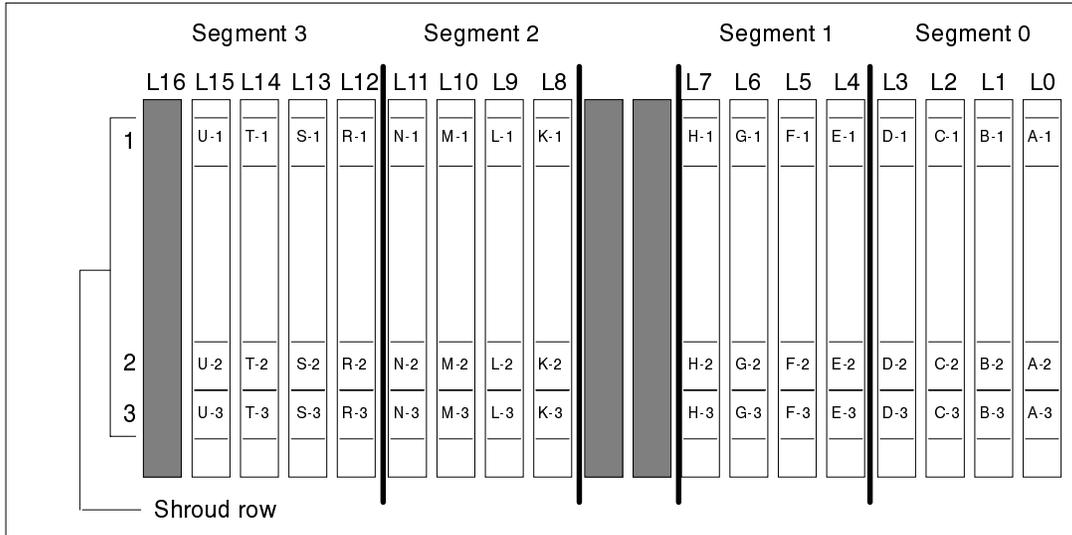
**NT8D37 backplane cable expansion—segment 3**

- 1 Leave cable R as is in slot position L12.
- 2 Move cable end S-3 to slot position L13-3.
- 3 Remove cable T from the backplane, and connect cable ends T-1, T-2, and T-3 to slot positions L14-1, L14-2, and L14-3.
- 4 Add cable U to the I/O panel by connecting cable ends U-1, U-2, and U-3 to slot positions L15-1, L15-2, and L15-3.

Table 4-8 lists cable connections for a fully expanded configuration. Figure 4-5 shows the backplane slots in a fully expanded configuration.

<b>Table 4-8 NT8D37 cable connections (fully expanded configuration)</b>	
<b>From backplane slots—shroud rows</b>	<b>To I/O panel/cable designation</b>
L0-1,2,3	A
L1-1,2,3	B
L2-1,2,3	C
L3-1,2,3	D (new cable)
L4-1,2,3	E
L5-1,2,3	F
L6-1,2,3	G
L7-1,2,3	H (new cable)
L8-1,2,3	K
L9-1,2,3	L
L10-1,2,3	M
L11-1,2,3	N (new cable)
L12-1,2,3	R
L13-1,2,3	S
L14-1,2,3	T
L15-1,2,3	U (new cable)

**Figure 4-5**  
**NT8D37 backplane cable designations (fully expanded configuration)**



### Assigning the input/output ports—Option 51C–81C

There are eight ports available for various peripheral devices, but two of them are configured for a specific peripheral device. Port 1 is configured for the console port, and Port 2 is configured for the diagnostic modem. The remaining peripherals and links can be configured on any of Ports 3 to 8.

*Note:* The Configuration Control feature uses a Load Management Link that is also referred to as a Configuration Control Link.

Table 4-9 provides you with a chart that lists all of the assignable ports and shows the type of device that can be connected to each port. As you decide upon the device to connect to each port, enter the device name in the space provided. If you are assigning a Supervisor Workstation, Remote Login, or Network Link, you must specify the type of connection: direct, dial-up at 2400 baud, or dial-up at 9600 baud. This information is requested during the software installation.

Note the following abbreviations:

- High-Speed Link (HSL)
- Load Management Link (LML)
- Network Link (NetLink) (NL)
- Supervisor Workstation (SW)

Note the following details for connection types:

- Serial/dial-up connection at 2400 baud (2400)
- Serial/dial-up connection at 9600 baud (9600)
- Serial connection at 19 200 baud (19 200)

*Note:* The “Connection type” column in the following table lists all of the possible connections. Some connection types cannot be applied to some available devices. For example, the only connection type possible for a High-Speed Link is a direct connection.

<b>Table 4-9 Option 51C–81C communication port assignment sheet</b>				
<b>Port</b>	<b>NT1R03 Cable</b>	<b>Devices available</b>	<b>Device selected</b>	<b>Connection type</b>
1	JB	CONSOLE PORT	CONSOLE PORT	N/A
2	KB	DIAGNOSTIC MODEM	DIAGNOSTIC MODEM	N/A
3	JB	SW / HSL / LML / NL		2400/9600/19 200
4	KB	SW / HSL / LML / NL		2400/9600/19 200
5	JB	SW / HSL / LML / NL		2400/9600/19 200
6	KB	SW / HSL / LML / NL		2400/9600/19 200
7	JB	SW / HSL / LML / NL		2400/9600/19 200
8	KB	SW / HSL / LML / NL		2400/9600/19 200

Table 4-10 provides a chart that shows the Ethernet connection between the Meridian MAX IPEX module and the customer's Local Area Network (LAN). This connection is between the Ethernet connector on the NT1R03JB four-port cable and the customer's network device (hub, router, and so on). Nortel Networks does not supply the cable to use for this connection; the customer must supply it. It must be a shielded Category 5 cable to protect the electromagnetic integrity of the IPEX module within the Meridian 1 system.

The IPEX is fix-configured for 10 Mbps full-duplex operation; the customer's network device must be similarly configured.

<b>Table 4-10 Option 51C–81C communication port assignment sheet (Ethernet)</b>				
<b>Port</b>	<b>NT1R03 Cable</b>	<b>Devices available</b>	<b>Device selected</b>	<b>Connection type</b>
1	JB	MTE / MSI / MEI	N/A	10BaseT

## Cables

### External input/output cables

Meridian MAX IPEX external cables exit from the base of the Option 11C and the rear of the Option 51C–81C. Table 4-11 lists all of the external I/O cables and the devices to which they connect. For the gender of each peripheral device, see the individual section for each type of peripheral.

*Note:* The Configuration Control feature uses a Load Management Link that is also referred to as the Configuration Control Link.

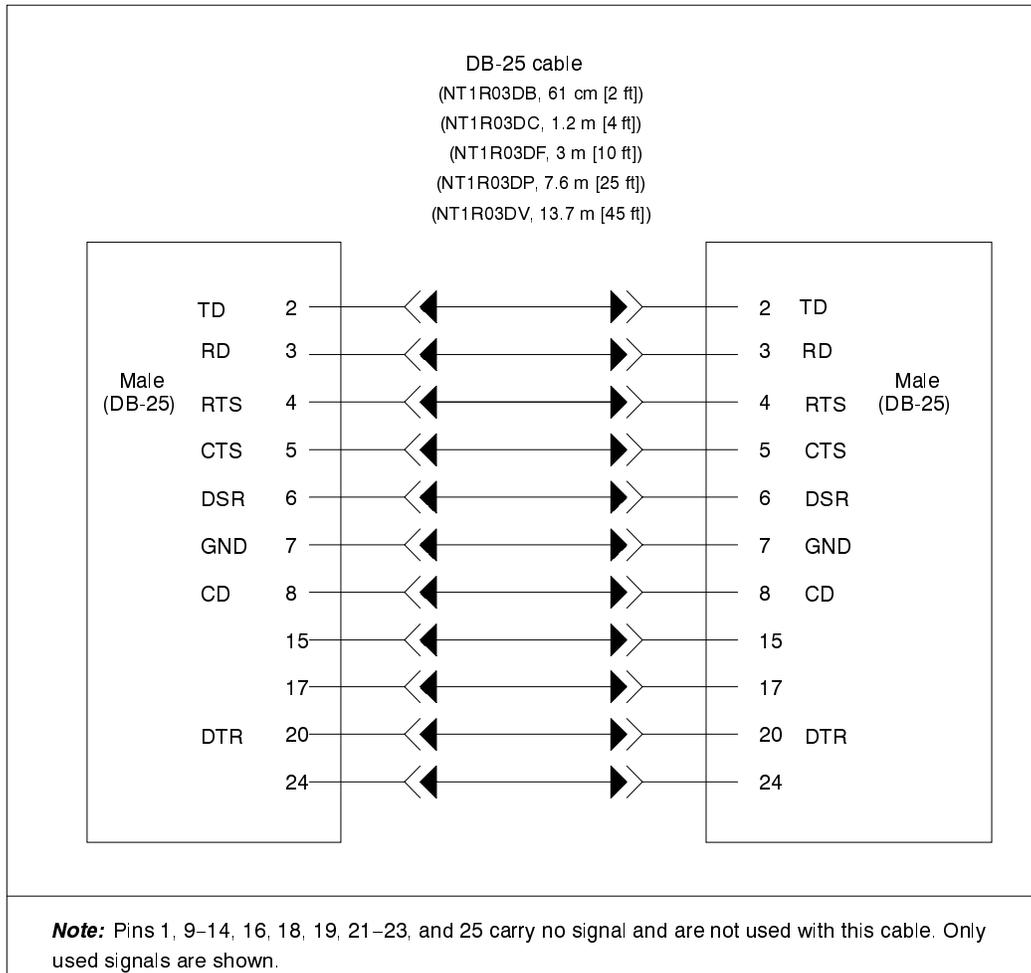
ENG code	Application	Cable and connector style	Length
NT1R03JB NT1R03KB	Four-port cable. Carries input/output information between the Option 11C or Option 51C-81C and its peripheral devices. (The NT1R03JB also has an Ethernet connection.)	50-pin (female) telephone connector to four DB-25 (female) connectors. (NT1R03JB also has an Ethernet connection.)	Four connectors 76 cm (30 in.) 69 cm (27 in.) 61 cm (24 in.) 53 cm (21 in.) in ladder shape
NT1R03DB NT1R03DC NT1R03DF NT1R03DP NT1R03DV	Straight-through extension cable from NT1R03JB and NT1R03KB cables to peripheral devices, or to a Meridian 1 cable used for an HSL or LML connection	DB-25 (male) connector to DB-25 (male) connector	61 cm (2 ft) 1.2 m (4 ft) 3 m (10 ft) 7.6 m (25 ft) 13.7 m (45 ft)
NT1R03EB NT1R03EC NT1R03EF NT1R03EP NT1R03EV	Straight-through extension cable from NT1R03JB and NT1R03KB cables to peripheral devices, or to a Meridian 1 cable used for an HSL or LML connection	DB-25 (male) connector to DB-25 (female) connector	61 cm (2 ft) 1.2 m (4 ft) 3 m (10 ft) 7.6 m (25 ft) 13.7 m (45 ft)
—continued—			

<b>Table 4-11 (continued)</b> <b>External input/output cables</b>			
<b>ENG code</b>	<b>Application</b>	<b>Cable and connector style</b>	<b>Length</b>
NT1R03HF	Modem cable from the NT1R03JB or NT1R03KB cable to a modem	DB-25 (male) connector to DB-25 (male) connector	3 m (10 ft)
NT7D58EB NT7D58ED NT7D58EF NT7D58EL NT7D58ET NT7D58EV	Carries input/output information between a serial port on a QPC139 or a QPC841 SDI card (for Option 51C-81C) and the four-port cables (NT1R03JB and NT1R03KB). Use for an HSL or LML connection. One end of the cable connects to the serial port connector found on the faceplate of the SDI card.	25-pin (male) subminiature D-style connector to a 25-pin (male) subminiature D-style connector.	61 cm (2 ft) 1.8 m (6 ft) 3 m (10 ft) 6.1 m (20 ft) 10.7 m (35 ft) 13.7 m (45 ft)
—continued—			

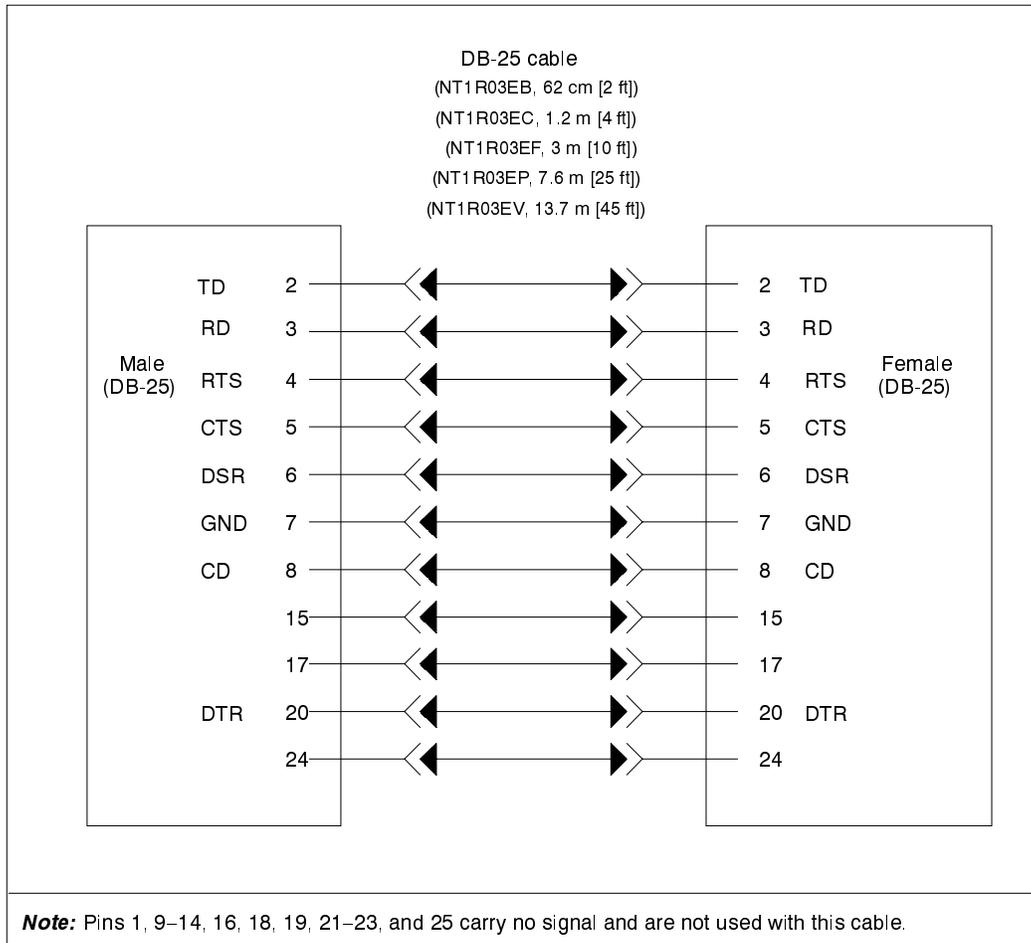
<b>Table 4-11 (continued)</b> <b>External input/output cables</b>			
<b>ENG code</b>	<b>Application</b>	<b>Cable and connector style</b>	<b>Length</b>
NT8D93AJ NT8D93AW	Carries input/output information between a serial port on an NT8D41AA (XSDI) or NT8D41BA (QXSDI) paddle board (for Option 51C–81C) and the four-port cables (NT1R03JB and NT1R03KB). Use for an HSL or LML connection. The DB–9 end of this cable connects to the Meridian 1 shelf's I/O panel, where the paddle board's serial connector is located. The DB–25 end connects to the HSL or LML port on the four-port cables.	25-pin (male) D-style connector to 9-pin (female) subminiature D-style connector	4.9 m (16 ft) 14.6 m (48 ft)
NTAK1118	Carries input/output information between the serial port on an NTDK23, NTDK25, or NTDK80 Fiber Receiver card (for Option 11C) and the four-port cables (NT1R03JB and NT1R03KB).	DB–9 (female) connector to DB–25 (male) connectors	
—continued—			

<b>Table 4-11 (continued)</b> <b>External input/output cables</b>			
<b>ENG code</b>	<b>Application</b>	<b>Cable and connector style</b>	<b>Length</b>
NTAK19EC	Carries input/output information between all serial ports on an NTA03 TDS/DTR card (for Option 11C) and the four-port cables (NT1R03JB and NT1R03KB).	50-pin telephone connector to two DB-25 (male) connectors	1.8 m (6 ft)
NTAK19FB	Carries input/output information between all serial ports on an NTA02 SDI/DCH card (for Option 11C) and the four-port cables (NT1R03JB and NT1R03KB).	50-pin telephone connector to four DB-25 (male) connectors	1.8 m (6 ft)
NTBK48AA	Carries input/output information between all serial ports on an NTDK20 SSC card (for Option 11C) and the four-port cables (NT1R03JB and NT1R03KB).	DB-9 (female) connector to three DB-25 (male) connectors	1.5 m (5 ft)

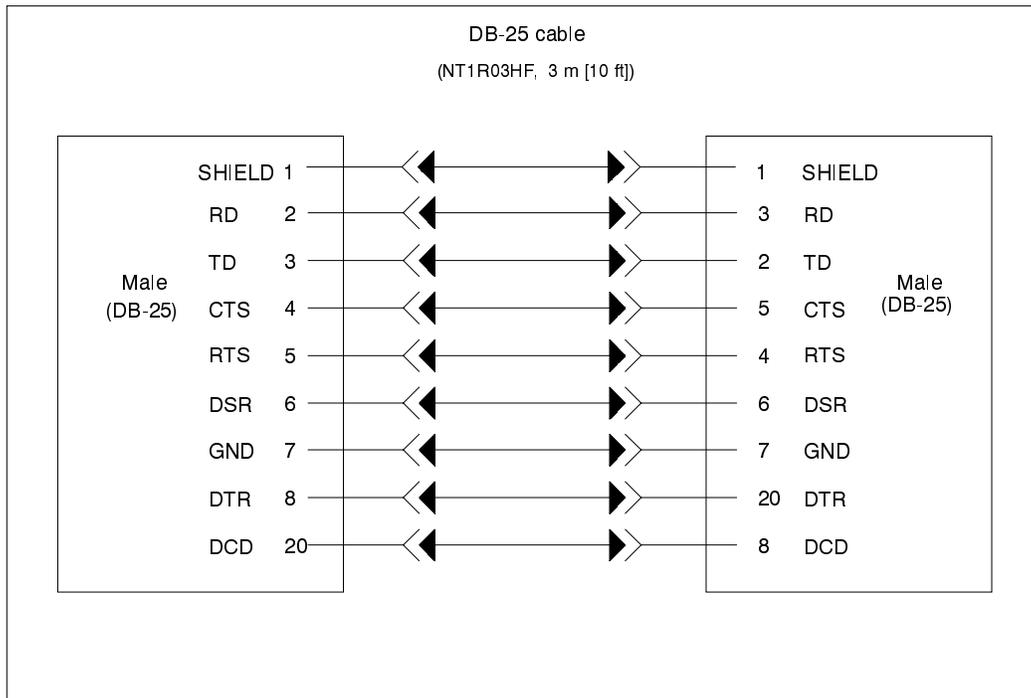
**Figure 4-6**  
**Cabling arrangement—Meridian MAX IPEX NT1R03Dx straight-through RS-232 extension cable used between the NT1R03JB or NT1R03KB cable and peripheral devices, or between the NT1R03JB or NT1R03KB cable and a Meridian 1 cable used for an HSL or LML connection**



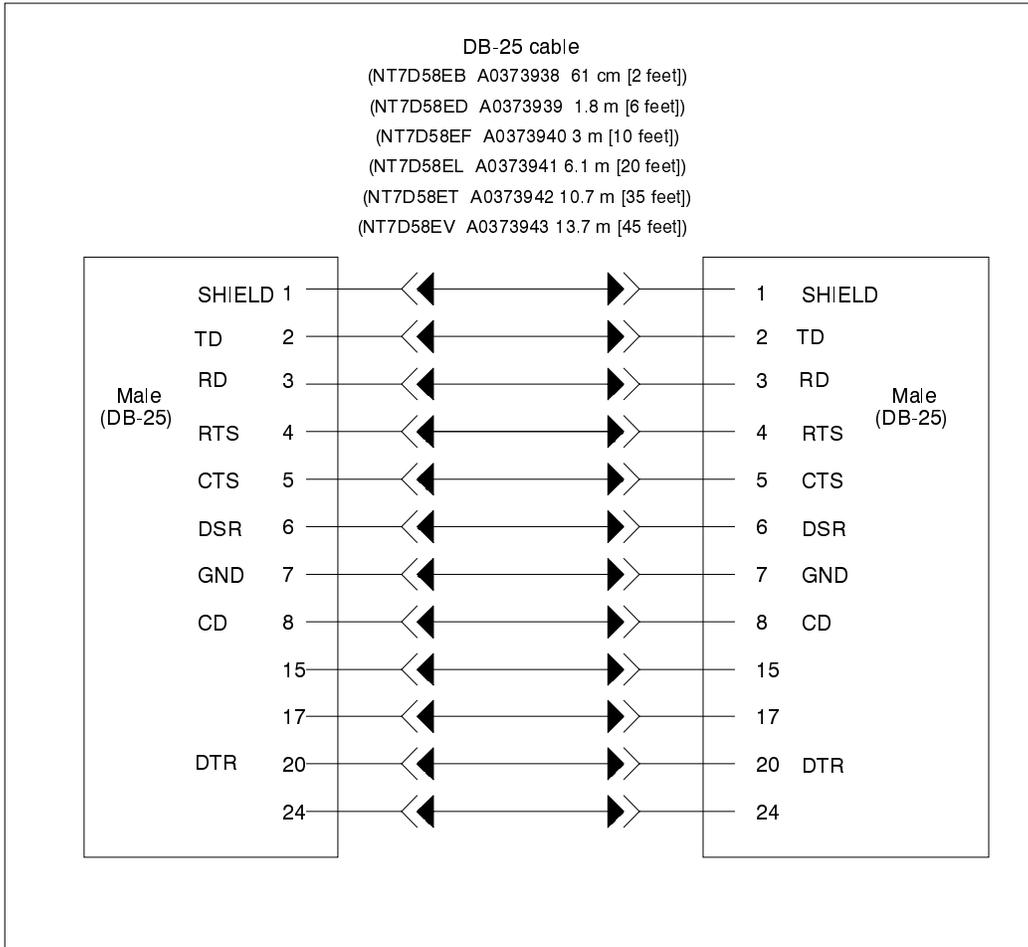
**Figure 4-7**  
**Cabling arrangement—Meridian MAX IPEX NT1R03Ex straight-through RS-232 extension cable used between the NT1R03JB or NT1R03KB cable and peripheral devices, or between the NT1R03JB or NT1R03KB cable and a Meridian 1 cable used for an HSL or LML connection**



**Figure 4-8**  
**Cabling arrangement—Meridian MAX IPEX NT1R03HF modem cable used between**  
**NT1R03JB or NT1R03KB and modems**



**Figure 4-9**  
**Cabling arrangement—Meridian MAX cable NT7D58Ex used for HSL and LML connections between the NT1R03JB or NT1R03KB cable and a serial port on a QPC139 or QPC841 in the Meridian 1**



### **NT1R03JB/NT1R03KB four-port I/O cable**

The NT1R03JB and NT1R03KB four-port I/O cables connect the Meridian MAX IPEX module with each peripheral in the system. The NT1R03KB cable has a single 50-pin telephone connector plug at one end, and four female DB-25 connectors at the other end, as shown in Figure 4-11. The NT1R03JB is similarly constructed with four female DB-25 connectors; however, it also has an additional connector used for the LAN connection, as shown in Figure 4-10.

For Option 11C, the 50-pin telephone connector plug on the four-port cable connects directly to the I/O panel of the Option 11C.

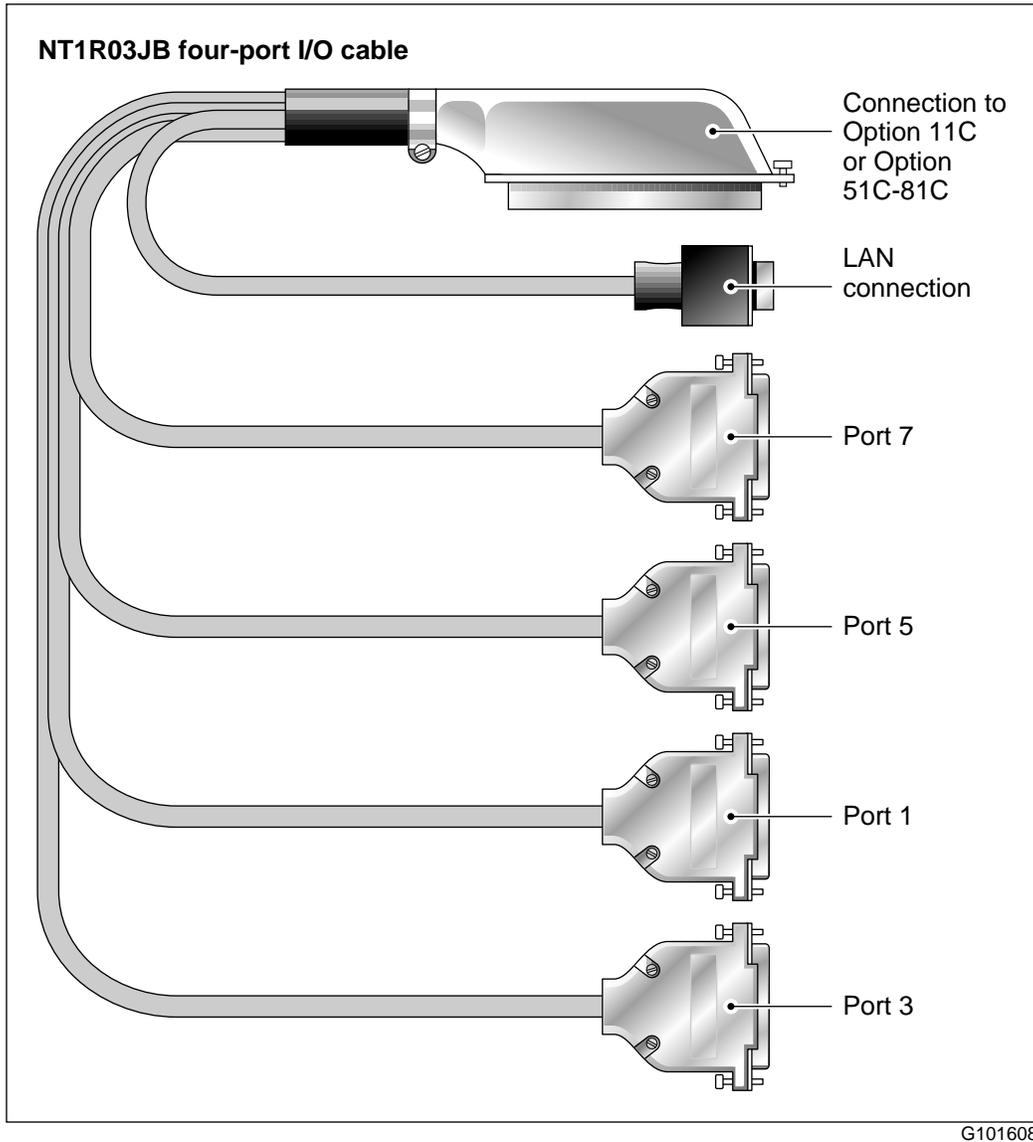
For Option 51C–81C, the 50-pin telephone connector plug on the four-port cable connects to the Meridian MAX IPEX module I/O panel at the rear of the Option 51C–81C IPE shelf.

Each of the four DB-25 plugs at the other end of the four-port cable are connected to a peripheral device. Refer to the correct port assignment chart when connecting peripherals to cables.

The customer-provided RS-232 straight-through cable with male DB-25 connectors, seen in Figures 4-6, 4-7, and 4-8, can extend the range between a Meridian MAX IPEX and a peripheral device. The distance between a peripheral RS-232 device and an Option 11C or Option 51C–81C must be less than 15 meters (50 feet). The distance between the four-port cable with the Ethernet connector (NT1R03JB) and the customer's network device must be less than 50 meters (164 feet).

Table 4-12 is the wiring table for the NT1R03JB four-port I/O cable with the additional Ethernet connector. Table 4-13 is the wiring table for the NT1R03KB four-port I/O cable. Note that all of the pins listed in the FROM column represent pins in the 50-pin telephone connector plug. Pins listed in the TO column are pins in the DB-25 sockets for the cables listed in the CABLE column.

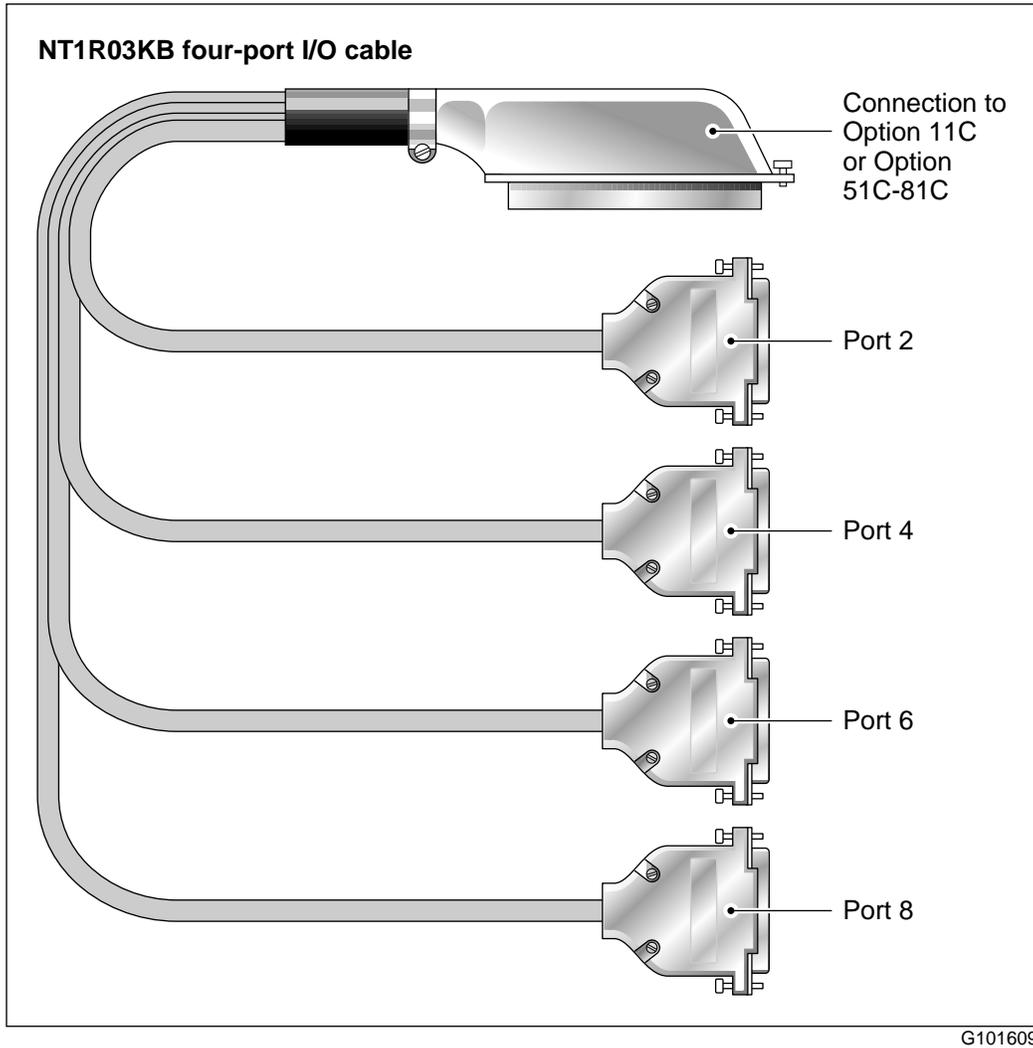
**Figure 4-10**  
**NT1R03JB four-port I/O cable**



<b>Table 4-12</b>							
<b>NT1R03JB 50-pin four-port cable wiring</b>							
<b>From DB-50</b>	<b>To DB-25</b>	<b>Port</b>	<b>*Signal name</b>	<b>From DB-50</b>	<b>To DB-25</b>	<b>Port</b>	<b>*Signal name</b>
1	7	1	GND1	26	6 and 8	1	DSR1, DCD1
2	2	1	RXD1	27	3	1	TXD1
3	4	1	RTS1	28	5	1	CTS1
4	20	1	DTR1	29	20	1	DTR1
5	7	3	GND3	30	20	3	DTR3
6	3	3	TXD3	31	2	3	RXD3
7	5	3	CTS3	32	4	3	RTS3
8	6	3	DSR3	33	8	3	DCD3
9	7	5	GND5	34	20	5	DTR5
10	3	5	TXD5	35	2	5	RXD5
11	5	5	CTS5	36	4	5	RTS5
12	6	5	DSR5	37	8	5	DCD5
13	15	5	TXCI5	38	17	5	RXCI5
14	24	5	TXCO5	39	22	5	RI5
15	7	7	GND7	40	20	7	DTR7
16	3	7	TXD7	41	2	7	RXD7
17	5	7	CTS7	42	4	7	RTS7
18	6	7	DSR7	43	8	7	DCD7
19	15	7	TXCI7	44	17	7	RXCI7
20	22	7	RI7	45	24	7	TXCO7
<b>From DB-50</b>	<b>To RJ-45</b>	<b>Port</b>	<b>Signal name</b>	<b>From DB-50</b>	<b>To RJ-45</b>	<b>Port</b>	<b>Signal name</b>
21	N.C.			46	N.C.		
22	1	Ethernet	T+	47	2	Ethernet	T-
23	3	Ethernet	R+	48	6	Ethernet	R-
24	N.C.		SG	49	N.C.		
25		FGND	FGND	50		FGND	FGND

\*The signal name column shows values for the DB-25 DCE signal.  
**Note:** The cable wiring for the NT1R03JB Ethernet connector indicated at pins 46–49 on the DB-50 connector maps onto pins 1, 3, 2, and 6, and the shell of the RJ-45 Ethernet connector.

**Figure 4-11**  
**NT1R03KB four-port I/O cable**



4-38 Hardware installation: IPEX module

<b>Table 4-13 NT1R03KB 50-pin four-port cable wiring</b>							
<b>From DB-50</b>	<b>To DB-25</b>	<b>Port</b>	<b>*Signal name</b>	<b>From DB-50</b>	<b>To DB-25</b>	<b>Port</b>	<b>*Signal name</b>
1	7	2	GND1	26	6 and 8	2	DSR1, DCD1
2	2	2	RXD1	27	3	2	TXD1
3	4	2	RTS1	28	5	2	CTS1
4	20	2	DTR1	29	20	2	DTR1
5	7	4	GND3	30	20	4	DTR3
6	3	4	TXD3	31	2	4	RXD3
7	5	4	CTS3	32	4	4	RTS3
8	6	4	DSR3	33	8	4	DCD3
9	7	6	GND5	34	20	6	DTR5
10	3	6	TXD5	35	2	6	RXD5
11	5	6	CTS5	36	4	6	RTS5
12	6	6	DSR5	37	8	6	DCD5
13	15	6	TXCI5	38	17	6	RXCI5
14	24	6	TXCO5	39	22	6	RI5
15	7	8	GND7	40	20	8	DTR7
16	3	8	TXD7	41	2	8	RXD7
17	5	8	CTS7	42	4	8	RTS7
18	6	8	DSR7	43	8	8	DCD7
19	15	8	TXCI7	44	17	8	RXCI7
20	22	8	RI7	45	24	8	TXCO7
21			NC	46			NC
22			NC	47			NC
23			NC	48			NC
24			NC	49			NC
25		FGND	FGND	50		FGND	FGND

\*The signal name column shows values for the DB-25 DCE signal.

## Faceplate components

There are two light-emitting diodes (LEDs), a power switch, and a reset button on the Meridian MAX IPEX module faceplate. These are shown in Figure 4-12.

The LEDs show the following conditions:

- **PWR (power)** This green LED lights continuously, indicating power is running to the Meridian MAX IPEX.
- **HDD (hard disk drive)** The intensity of this green LED varies depending on system use. Heavy communication between devices is indicated by a solid bright light, while a dimmer flickering light indicates less data movement.



### CAUTION

#### Risk of system interruption

*Do not press* Reset while applications are running, unless under the direction of Nortel Networks support personnel. Shut down the system software before pressing Reset. This button reinitializes the Meridian MAX IPEX system. The system performs a self-test and then reboots. For more information, refer to the “Meridian MAX power-down procedure” chapter.

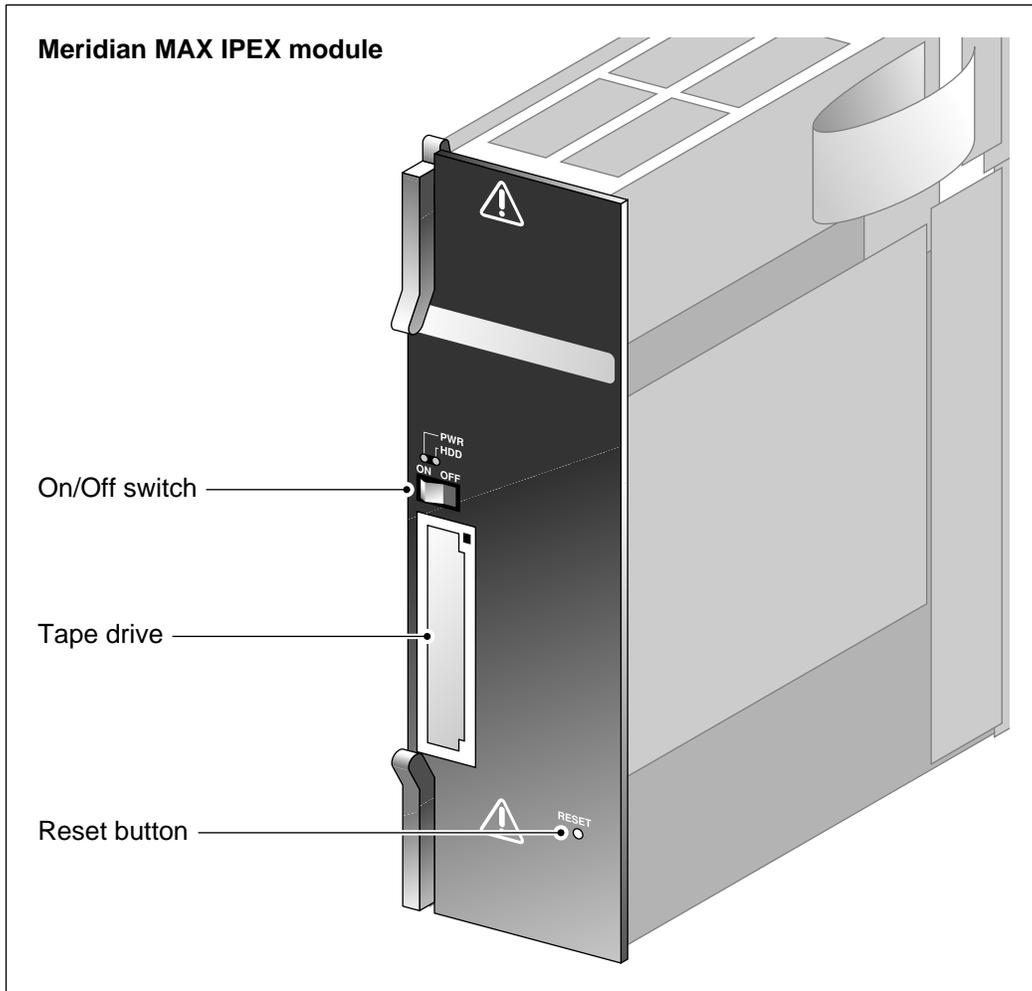


### CAUTION

#### Risk of equipment damage

Use an antistatic wrist strap before you remove components from an antistatic bag. Failure to do so results in damage to components.

**Figure 4-12**  
**Meridian MAX IPEX module—front view**



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## Chapter 5: Software installation overview

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### A word about warranties

It is extremely important that you read and understand the warranties issued for your peripheral equipment. Each warranty details what you can and cannot do with the warranted item. While the utmost care has been taken to ensure that the procedures described in this guide do not void any of the warranties, it is still possible for an instruction to be in conflict with a warranty, such as warranty changes after the publication of this guide. If you find such a condition, contact your dealer or Nortel Networks service representative.

**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 (usually the manufacturers) where required.

**ATTENTION**

When entering a number in response to a prompt, use the upper row of keys (numbers) rather than the numeric keypad. If you want to use the numeric keypad, ensure that the keyboard indicator "NUM LOCK" is on. Otherwise, unpredictable results can occur.

## Keycodes

During any Meridian MAX 10 installation, you must enter a 20-character alphanumeric keycode. This keycode represents your system options, system hardware, and Meridian 1 serial number. The options appear on the screen for your verification during installation.

All keycodes are obtained from your Nortel Networks distributor. Any change in system options requires the generation of a new keycode.

The following keycode information appears:

- Meridian 1 serial number
- platform
- number of serial ports
- maximum number of position IDs
- maximum number of supervisor sessions
- Configuration Control (enabled/disabled)
- Formula Definition (enabled/disabled)
- NAC Connectivity (enabled/disabled)
- MSL-1 NACD MIS (enabled/disabled)
- CCR/EAR MIS (enabled/disabled)
- Data Stream Reporting (enabled/disabled)
- MAX Status Interface (MSI) (enabled/disabled)
- number of MAX Event Interface (MEI)-Network links
- number of MAX Event Interface (MEI)-Observe links
- Multiple Queue Assignment (MQA) (enabled/disabled)

**Note:** The MSI and MEI links must also be enabled through the Miscellaneous Options screen and the External Interface Configuration screen. For more information, refer to the *MSI/MEI Protocol Reference Guide* (P0853414).

## New software installations

If your operation has never used an ACD-MAX or Meridian MAX, you can only perform a new installation of Meridian MAX 10 IPEX. For more information, refer to the “New software installations” chapter.

## Software reinstallations and upgrades

### Reinstallations

You perform a software reinstallation to reinstall existing Meridian MAX 10 software if, for example, a problem arises with an installation. If a problem does occur, the system asks you to attempt the installation again. Determine whether hardware is causing the problem (for example, missing or improperly connected equipment), and correct the problem before restarting the installation. If it is not a hardware problem, restart the installation. If the problem persists, contact your distributor or Nortel Networks support group for assistance.

If you need to perform a reinstallation, refer to the *Meridian MAX 10 Upgrade Guide* (NTP 553-4001-210), “Software upgrades and reinstallations” chapter.

### Upgrades

As your operation grows, you might require greater Meridian MAX functionality and capacity. You accommodate this growth through hardware and software upgrades within Meridian MAX 10. You can increase system functionality through software upgrades.

You perform a software upgrade when you want to install new Meridian MAX 10 software that changes the system’s features and functionality. For more information, refer to the *Meridian MAX 10 Upgrade Guide* (NTP 553-4001-210).

## Updating a current software release

As new releases of Meridian MAX 10 software are developed, you can purchase and install an updated version of the software. For more information, refer to the *Meridian MAX 10 Upgrade Guide* (NTP 553-4001-210), “Updating a current software release” chapter.

## Reentry points

Meridian MAX 10 software has four installation reentry points. If a software installation must be aborted at some point, you can restart the installation from the last successfully completed section of the installation. For example, if an installation had to be aborted after the OS files were copied to the hard disk but before the application files were copied, you can skip over the successfully copied OS files and go to the point just before the application files were copied.

**Note:** The system displays only those reentry points available for your installation. You cannot skip steps that were not successfully completed.

Check your error log and system messages when the software installation procedure is complete to ensure no errors were reported. If you want to use a reentry point, check that no errors were reported within the steps you want to skip. If you are unsure, restart the installation from the beginning. If the errors persist, contact your Nortel Networks distributor.

If an error message appears on the screen, perform a graceful shutdown of the system. The system provides prompts and messages for the shutdown.

	<p><b>CAUTION</b> <b>Risk of data corruption</b> If the system is shut down improperly, unpredictable results can occur.</p>
---	--

The reentry points for a Meridian MAX software installation are

- 1 from the beginning
- 2 prior to copying the OS files to the hard disk
- 3 prior to copying the Meridian MAX application files to the hard disk
- 4 prior to booting from the hard disk

## Installation tape

The installation procedure uses one software installation tape. Take care to avoid damaging the tape. If the tape is damaged, errors can occur during the installation procedure. Ensure that the installation tape is set to write-protected. Keep tapes away from excessive heat or electromagnetic radiation.

Figure 5-1 shows the correct method for inserting a cartridge tape into the Travan 20 tape drive.

To insert or remove a cartridge tape from the Meridian MAX module's tape drive, you can remove the front panel for short periods of time. If you do not need to access the module shortly afterwards, make certain that the front panel (and rear panel, if using Option 51C–81C) is properly replaced.

**Note:** Do not remove the tape while the tape drive is running (the tape drive LED is lit).

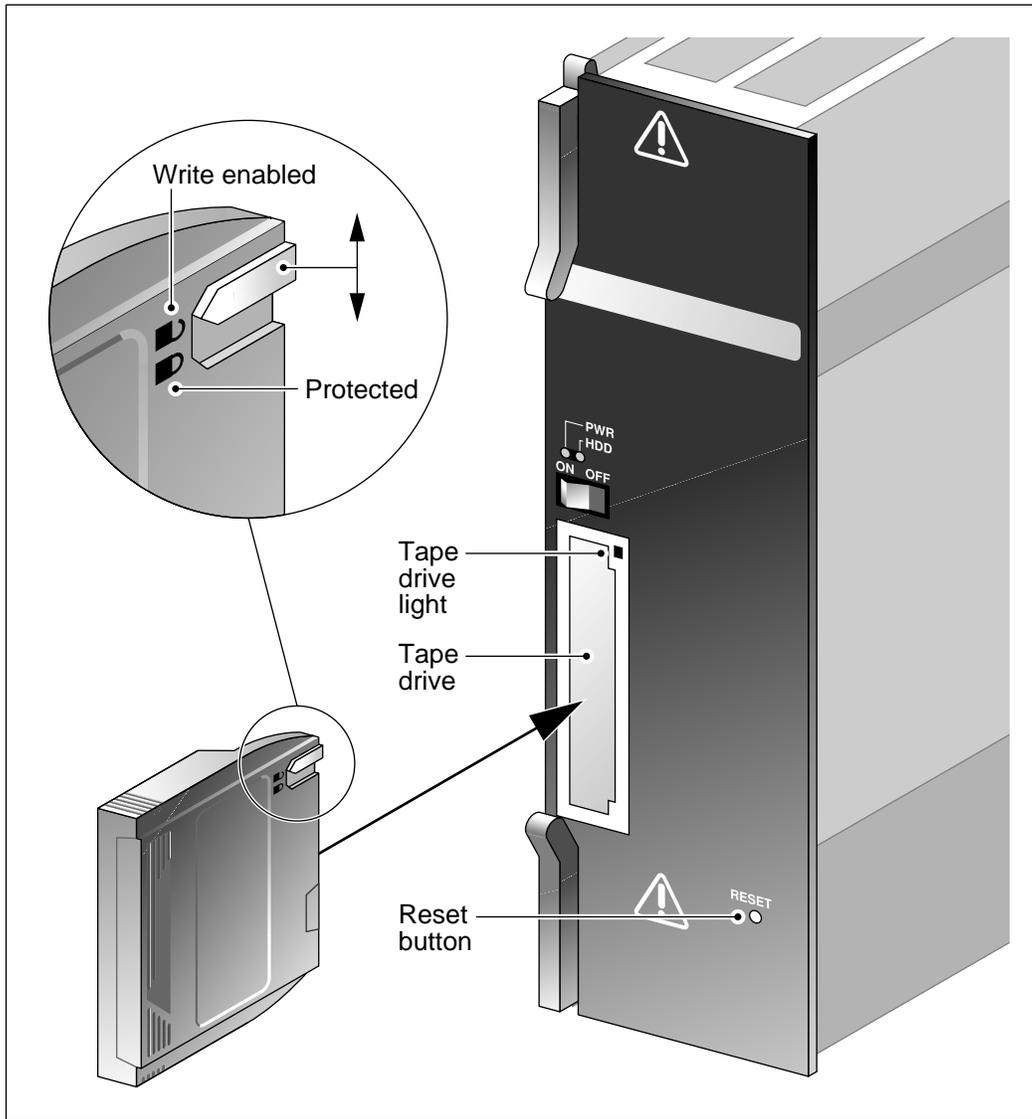


### **CAUTION**

#### **Risk of data corruption**

Do not power off a module without first performing the system shutdown procedure. You must not power off the Meridian MAX module without first shutting down the system. The shutdown process synchronizes the information currently in system memory with the information on the hard drive. Only in extenuating circumstances should the module be powered off without first shutting down.

**Figure 5-1**  
Inserting a cartridge into the Travan 20 tape drive



G101610

## **Cleaning the tape drive**

You should clean the tape cartridge cavity after an initial pass with a new tape cartridge, or whenever dust or debris is visible inside the cartridge cavity. You should also clean it after about 100 hours of operation or every three to six months depending on utilization.

To clean the tape drive, use a head cleaning cartridge. Nortel Networks does not offer a product for this purpose. You can order a cleaning kit for a Travan NS-20-compatible tape drive from another vendor, such as Imation.

You might need to replace the tape drive if

- you receive repeated errors when attempting to write to tape
- the light on the front of the tape drive is out
- you cannot hear the tape spinning

If you experience these problems, contact Nortel Networks to determine if you need to replace the tape drive. If so, you can order a tape drive repair kit from Nortel Networks, which includes instructions for replacing the tape drive. For ordering details, refer to the “Field replaceable parts” chapter.



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## Chapter 6: New software installations

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This chapter describes the procedures to install the Meridian MAX 10 software and the Red Hat Linux operating system. You must perform a new installation if your hardware has never been used with a Meridian MAX product.

This chapter contains two separate procedures for installing new software for the IPEX module: one for factory-installed software and one for customer-installed software.

To distinguish factory-installed software from customer-installed software, power up the Meridian MAX 10. If the logon prompt appears, then the system has factory-installed software. If a banner appears with the text “Meridian MAX Installation Procedure,” it has customer-installed software.

Follow the procedure “Factory-installed software procedure” if your system has IPEX factory-installed software.

Follow the procedure “Customer-installed software procedure” if your system has IPEX customer-installed software.

### Before you begin

Before you begin either procedure, you must do the following:

- Prepare a site to install the Meridian MAX 10 hardware. For more information, refer to the “Site preparation” chapter.
- Install the cables and peripheral devices. At a minimum, the console terminal must be connected to Port 1. For more information, refer to the “Hardware installation: IPEX module” chapter.

## Factory-installed software procedure

To install the software and operating system, follow these steps.

### Procedure 6-1

#### New installation procedure for Meridian MAX 10 factory-installed software

- 1 Before beginning this procedure, ensure that the IPEX module has been configured correctly.

Refer to the "Hardware installation: IPEX module" chapter.

- 2 Power up the module.

The power button is located above the tape drive.

The system displays startup messages, as shown in the following example:

```
LILO
Meridian MAX IPEX
boot:
Loading MAX10.....
Linux version 2.2.14-5.0 (root@porky.devel.redhat.com) (gcc
version egcs-2.91.66 19990314/Linux (egcs-1.1.2 release))
#1 Tue Mar 7 21:07:39 EST 2000
Detected 332607551 Hz processor.
Console: mono *MDA 80x25
Calibrating delay loop... 331.78 BogoMIPS
Memory: 257680k/262144k available (1060k kernel code, 416k
reserved, 2924k data, 64k init, 0k bigmem)
Dentry hash table entries: 262144 (order 9, 2048k)
Buffer cache hash table entries: 262144 (order 8, 1024k)
Page cache hash table entries: 65536 (order 6, 256k)
VFS: Diskquotas version dquot_6.4.0 initialized
CPU: Intel Mobile Pentium II stepping 0a
Enabling extended fast FPU save and restore...done.
Checking 386/387 coupling... OK, FPU using exception 16
error reporting.
Checking 'hlt' instruction... OK.
POSIX conformance testing by UNIFIX
mtrr: v1.35a (19990819) Richard Gooch
(rgooch@atnf.csiro.au)
PCI: PCI BIOS revision 2.10 entry at 0xfd9c5
PCI: Using configuration type 1
PCI: Probing PCI hardware
Linux NET4.0 for Linux 2.2
Based upon Swansea University Computer Society NET3.039
NET4: Unix domain sockets 1.0 for Linux NET4.0.
NET4: Linux TCP/IP 1.0 for NET4.0
IP Protocols: ICMP, UDP, TCP, IGMP
TCP: Hash tables configured (ehash 262144 bhash 65536)
Initializing RT netlink socket
Starting kswapd v 1.5
```

```
Detected PS/2 Mouse Port.
Serial driver version 4.27 with<4>keyboard: Too many NACKs
-- noisy kbd cable?
keyboard: Too many NACKs -- noisy kbd cable?
MANY_PORTS MULTIPORT SHARE_IRQ enabled
ttyS00 at 0x03f8 (irq = 4) is a 16550A
ttyS01 at 0x02f8 (irq = 3) is a 16550A
pty: 256 Unix98 ptys configured
apm: BIOS version 1.2 Flags 0x03 (Driver version 1.9)
Real Time Clock Driver v1.09
RAM disk driver initialized: 16 RAM disks of 4096K size
PIIX4: IDE controller on PCI bus 00 dev 39
PIIX4: not 100% native mode: will probe irqs later
   ide0: BM-DMA at 0xfc90-0xfc97, BIOS settings: hda:pio,
hdb:pio
   ide1: BM-DMA at 0xfc98-0xfc9f, BIOS settings: hdc:DMA,
hdd:pio
hda: SanDisk SDCFB-32, ATA DISK drive
hdc: ST313021A, ATA DISK drive\
hdd: Seagate STT20000A, ATAPI TAPE drive
ide0 at 0x1f0-0x1f7,0x3f6 on irq 14
ide1 at 0x170-0x177,0x376 on irq 15
hda: SanDisk SDCFB-32, 30MB w/1kB Cache, CHS=490/4/32
hdc: ST313021A, 12419MB w/512kB Cache, CHS=25232/16/63
floppy0: no floppy controllers found
md driver 0.90.0 MAX_MD_DEVS=256, MAX_REAL=12
raid5: measuring checksumming speed
raid5: MMX detected, trying high-speed MMX checksum
routines
   pII_mmx   : 773.430 MB/sec
   p5_mmx   : 821.055 MB/sec
   8regs    : 571.881 MB/sec
   32regs   : 325.755 MB/sec
using fastest function: p5_mmx (821.055 MB/sec)
scsi : 0 hosts.
scsi : detected total.
md.c: sizeof(mdp_super_t) = 4096
Partition check:
   hda: hda1
   hdc: hdcl hdc2 < hdc5 hdc6 hdc7 hdc8 >
autodetecting RAID arrays
autorun ...
... autorun DONE.
VFS: Mounted root (ext2 filesystem) readonly.
Freeing unused kernel memory: 64k freed
INIT: version 2.78 booting
       Welcome to Red Hat Linux
       Press 'I' to enter interactive startup.
Mounting proc filesystem [ OK ]
Configuring kernel parameters [ OK ]
Setting clock (utc): Thu Jul 27 15:29:37 GMT 2000 [ OK ]
Activating swap partitions [ OK ]
Setting hostname MAX00 [ OK ]
Checking root filesystem
/dev/hdc6: clean, 6468/384768 files, 20295/768088 blocks
```

## 6-4 New software installations

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```
[/sbin/fsck.ext2 -- /] fsck.ext2 -a /dev/hdc6
[ OK ]
Remounting root filesystem in read-write mode [ OK ]
Finding module dependencies [ OK ]
Checking filesystems
/dev/hdc1: clean, 25/25792 files, 5707/102784 blocks
/dev/hdc5: clean, 7922/897600 files, 64154/1792090 blocks
/dev/hdc8: clean, 108/280512 files, 9635/560440 blocks
Checking all file systems.
[/sbin/fsck.ext2 -- /boot] fsck.ext2 -a /dev/hdc1
[/sbin/fsck.ext2 -- /usr] fsck.ext2 -a /dev/hdc5
[/sbin/fsck.ext2 -- /var] fsck.ext2 -a /dev/hdc8
[ OK ]
Mounting local filesystems [ OK ]
Enabling swap space [ OK ]
INIT: Entering runlevel: 3
Entering non-interactive startup
Setting network parameters [ OK ]
Bringing up interface lo [ OK ]
Bringing up interface eth0 [ OK ]
Initializing random number generator [ OK ]
Mounting other filesystems [ OK ]
Starting system logger: [ OK ]
Starting kernel logger: [ OK ]
Starting at daemon: [ OK ]
Starting INET services: [ OK ]
Starting lpd: [ OK ]
Starting keytable [ OK ]
Starting X Font Server: [ OK ]

** Meridian MAX Startup **
Initializing, please wait .....

Loading system language strings ... [ OK ]
Loading help strings ... [ OK ]
Starting logging facility ... [ OK ]
Loading real-time data for Training mode ... [ OK ]
Starting MAPA Controller ... [ OK ]
Meridian MAX release 10.31
```

```
Meridian MAX Training Mode
Please login as 'precut' for more details.
```

At this point the system has completed the startup messages. It clears the screen and then displays the following message:

```
Red Hat Linux release 6.2 (Zoot)
Kernel 2.2.14-5.0 on an i686
```

```
MAX00 login:
```

### 3 Use the Maintenance console to log on as **maint**.

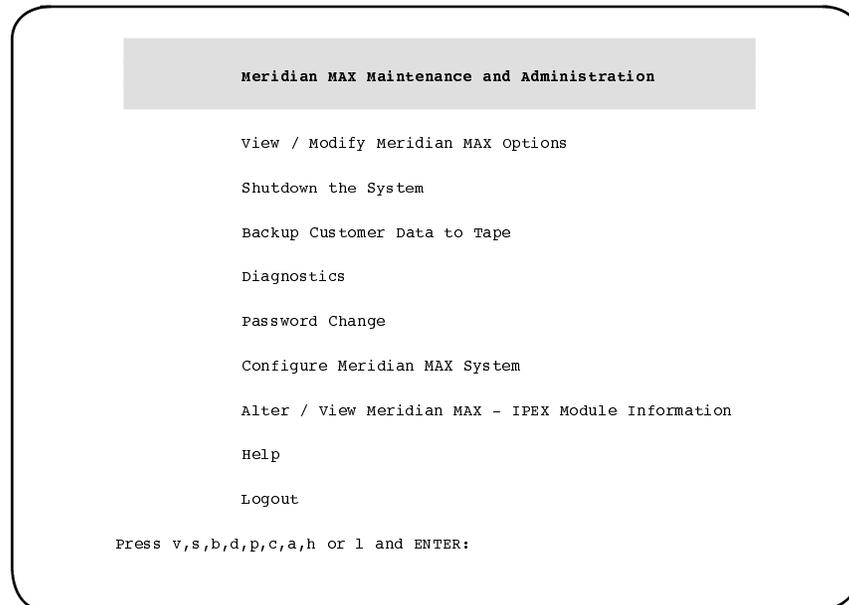
The system displays the following message:

Password:

- 4 Type the maintenance password.

The system displays the Meridian MAX Maintenance and Administration menu that appears while the system is active.

**Figure 6-1**  
**Maintenance and Administration menu—system running**



- 5 Type **s** and press **{RETURN}** to shut down the system.

The screen goes blank for several seconds. Then the system asks you to confirm your choice:

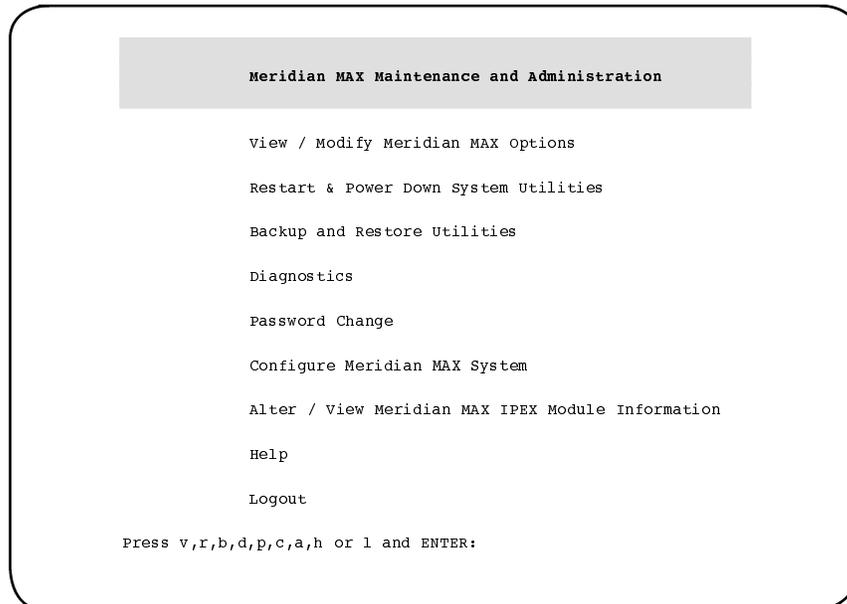
Press **y** and **ENTER** to confirm system shutdown.

(Just **ENTER** to quit)

- 6 Type **y** and press **{RETURN}** to confirm the shutdown of the system.

After the MAX application has terminated, the system displays the Meridian MAX Maintenance and Administration menu that appears while the MAX application is inactive.

**Figure 6-2**  
**Maintenance and Administration menu—system shutdown**



- 7 Type **v** and press **{RETURN}** for the View/Modify Meridian MAX Options menu.
- 8 Type **c** and press **{RETURN}** to select Current Options Display. This Meridian MAX Options screen displays the options selected for your site. This screen is a sample.

Note that the total number of configured direct connections plus the number of active LAN sessions cannot exceed 60.

**Figure 6-3**  
**Meridian MAX Options screen**

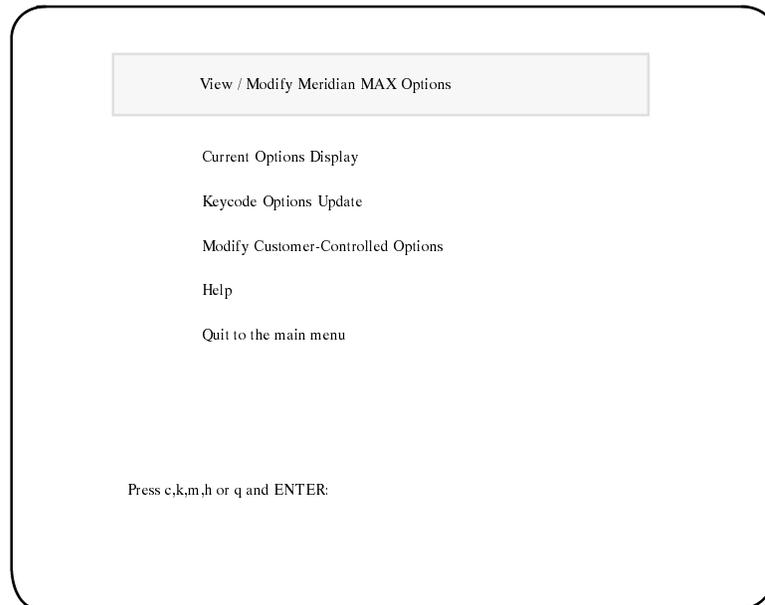
**Meridian MAX Options**

Product Release	:10.0x	Software Version	:10.xx
Hardware Platform	:IPEX	Database Version	:10.00
Meridian 1 Serial #	:12345	Customer Number	:0
Combined Call Abandon	:DISABLED	Agent-ID mode	:YES
Num Of Serial Ports	:40		
Max. Position IDs	:1200		
MAX Supervisor Sessions	:25		
Num of MEI-Network Links(s)	:1		
Num of MEI-Observe Link(s)	:3		
Configuration Control [CC]	:ENABLED		
Formula Definition [FD]	:ENABLED		
NAC Connectivity [NAC]	:ENABLED		
M1 NACD MIS [NACD]	:ENABLED		
CCR/EAR MIS [CCR]	:ENABLED		
Datastream Reporting [DSR]	:ENABLED		
M1 Terminal Emulator [MTE]	:ENABLED		
Multiple Queue Assgn. [MQA]	:ENABLED		
MAX Status Interface [MSI]	:DISABLED		

Press ENTER to return to menu.

- 9 Compare the *Customer Number* field with the customer number you want your system to have.  
 Press **{RETURN}** to return to the View/Modify Meridian MAX Options menu.
- 10 Type **q** and press **{RETURN}** to return to the Meridian MAX Maintenance and Administration menu.
- 11 If the *Customer Number* field is correct, go to Step 18.  
 If the *Customer Number* field is incorrect, type **v** and press **{RETURN}**.  
 The system displays the View/Modify Meridian MAX Options menu.

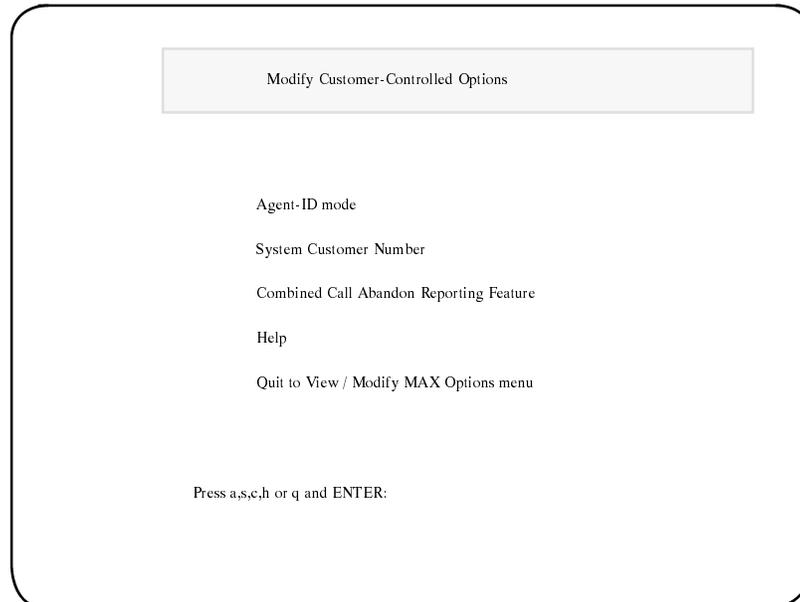
**Figure 6-4**  
**View/Modify Meridian MAX Options**



- 12** Type **m** and press **{RETURN}** for the Modify Customer-Controlled Options menu.

The system displays the following screen:

**Figure 6-5**  
**Modify Customer-Controlled Options screen**



- 13** Type **s** and press **{RETURN}** to assign a new customer number for this Meridian MAX site.

The system displays the following message:

```
***> The system customer number is #
```

(where # represents the current customer number)

Press **y** and **ENTER** to change the customer number.  
(Just **ENTER** to quit)

- 14** Type **y** and press **{RETURN}**.

The system displays the following question:

```
---> Which customer number would you like this MAX site  
to use?
```

## 6-10 New software installations

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- 15** Type a number between 0 and 99 (inclusive) that corresponds to the customer number assigned to your Meridian 1 switch and press **{RETURN}**.

The system displays the following message:

```
***> Customer number changed to ##
```

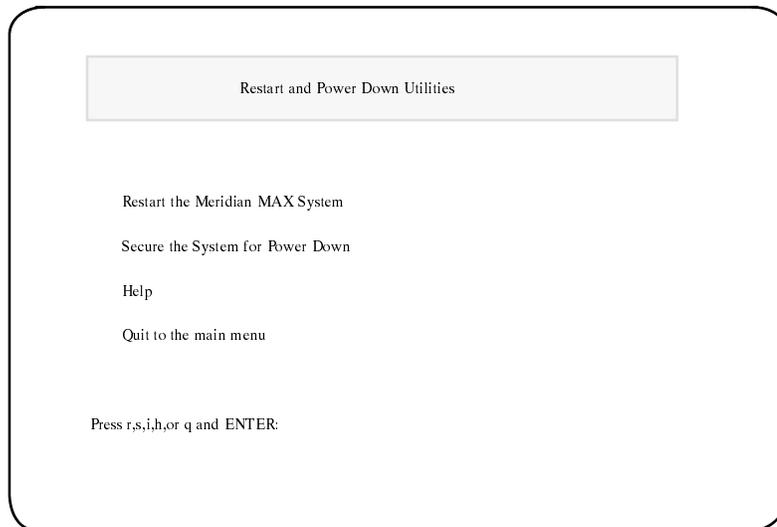
(where ## is the customer number you typed)

The system returns to the Modify Customer-Controlled Options screen.

- 16** Type **q** and press **{RETURN}** to return to the View/Modify Meridian MAX Options menu.
- 17** Type **q** and press **{RETURN}** to return to the Meridian MAX Maintenance and Administration menu.
- 18** Type **r** and press **{RETURN}**.

The system displays the Restart and Power Down Utilities menu.

**Figure 6-6**  
**Restart and Power Down Utilities**



**19** Type **r** and press **{RETURN}**.

The system begins the Restart the Meridian MAX System utility.

Press **y** and **ENTER** to confirm system restart. (Just **ENTER** to quit)

**20** Type **y** and press **{RETURN}**.

The system displays the following message:

The operating system will shut down and restart, and then MAX will restart.

Please wait for system to reboot.

The system displays a number of messages as it shuts down. After shutdown, the system automatically restarts and displays a logon prompt.

**21** Before logging on, ensure that the installation was successful by viewing the Meridian MAX error log for any fatal messages.

To do this, log on as **maint**. Use the instructions for accessing and viewing the error log in the *Meridian MAX 10 Maintenance and Diagnostics Guide* (NTP 553-4001-811), "Maintenance and administration programs: system running" chapter, "Diagnostics" section, "View MAX Error Log" subsection.

**22** Ensure that the correct system options are enabled.

To do this, remain logged on as **maint**. Use the instructions for accessing and viewing the system options in the *Meridian MAX 10 Maintenance and Diagnostics Guide* (NTP 553-4001-811), "Maintenance and administration programs: system running" chapter, "View/Modify Meridian MAX Options" section, "Current Options Display" subsection, for more information.

**23** If the system is installed correctly, go to Step 24.

If the system is not installed correctly, you must reinstall it. Refer to the "Customer-installed software procedure" in this chapter. Ensure that no errors occurred within the steps you want to skip. If you are unsure, restart the reinstallation from the beginning. If the errors persist, contact your Nortel Networks distributor.

## 6-12 New software installations

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- 24 Insert a new blank tape into the tape drive for daily backup. Ensure that the write-protect tab on the blank cartridge tape is set to write enabled to allow the system to write information on the tape.
- 25 Log off from the the maintenance function by typing I and pressing **{RETURN}** on the Meridian MAX Maintenance and Administration menu.  
The system displays a logon prompt.
- 26 Log on as **precut** to view the Meridian MAX Training Mode screen.  
Refer to the “Operating modes” chapter, “Switching from Training mode to Precutover mode” procedures, for further instructions on how to transfer from Training mode to Precutover mode.

## Customer-installed software procedure

To install the software and operating system, follow these steps.

### Procedure 6-2

#### New installation procedure for the Meridian MAX 10 customer-installed software

- 1 Insert the Meridian MAX Software Tape into the tape drive.  
For more information, refer to the "Software installation overview" chapter, "Installation tape" section.
- 2 Power on the IPEX to boot up the system and begin the install process.  
If you encounter a problem booting up the system, refer to the "Troubleshooting the BIOS settings" chapter.
- 3 Type the keycode.  
For more information, refer to the "Entering the keycode" section.
- 4 Set the date and time.  
For more information, refer to the "Setting the date and time" section.
- 5 Choose the type of installation or upgrade.  
For more information, refer to the "Choosing the type of installation" section.
- 6 If desired, select the reentry point.  
For more information, refer to the "Selecting the reentry point" section.
- 7 Start the software installation procedure.  
For more information, refer to the "Starting the software installation procedure" section.
- 8 Configure the software.  
For more information, refer to the "Configuring the Meridian MAX 10 software" section.
- 9 Install and enable the MAX Status Interface (MSI), if required.  
For more information, refer to the *MSI/MEI Protocol Reference Guide* (P0853414).
- 10 Install and enable the MAX Event Interface (MEI), if required.  
For more information, refer to the *MSI/MEI Protocol Reference Guide* (P0853414).

## Entering the keycode

To install or upgrade Meridian MAX, you must enter a 20-character alphanumeric keycode and the Meridian 1 serial number. The keycode represents the system options that you have purchased.

**Note:** The keycode is not case-sensitive; however, the Meridian 1 serial number is case-sensitive.

All keycodes are obtained from your Nortel Networks distributor. Any changes to your system options require a new keycode.

To enter the keycode, follow these steps.

### Procedure 6-3 To enter the keycode

- 1 If you have not already done so, boot the IPEX system with the Meridian MAX Software Tape inserted into the tape drive.  
The system boots from the internal CompactFlash device and displays a variety of bootup messages. When finished, the Meridian MAX 10 banner appears.

```
*****
*****
Meridian MAX Installation Procedure

Ensure that the Meridian MAX software tape is correctly
inserted into the tape drive.

During the software installation, certain prompts will
offer additional choices. These can be:

    q - quit the software installation procedure
    ? - display help information for the prompt
*****
*****

***> Checking that the tape is in the tape drive...
***> Verifying the MAX software tape...
***> Reading the tape table of contents...
***> Loading the installation image from tape...
***> Verifying the installation image...
```

```
***> Beginning installation...
```

```
INIT: version 2.78 booting
```

```
INIT: Entering runlevel: 3
```

- 2 The system prompts you to type your 20-character alphanumeric keycode followed by your Meridian 1 serial number. In the example below, these characters are represented by the pound key (#). You enter the keycode in sets of four characters and press **{RETURN}** after each entry.

**Note:** The keycode is not case-sensitive; however, the serial number is case-sensitive.

```
***> Enter the MAX keycode for this system
```

```
Please enter the first four characters of the keycode,
or 'q' to quit: ####
```

```
Please enter the next four characters of the keycode,
or 'q' to quit: ####
```

```
Please enter the next four characters of the keycode,
or 'q' to quit: ####
```

```
Please enter the next four characters of the keycode,
or 'q' to quit: ####
```

```
Please enter the last four characters of the keycode,
or 'q' to quit: ####
```

```
Please enter the Meridian 1 serial number that corresponds
to this keycode, or 'q' to quit: #####
```

- 3 If the system is unable to decrypt the keycode, it prompts you to reenter the keycode or abort the procedure. If the problem persists, the system aborts the procedure and prompts you to contact your Nortel Networks service representative.

If the system is able to decrypt the keycode, it displays the corresponding configuration information, as shown below. (This configuration is an example. Your system options might differ.)

The following options were encoded in the keycode that you entered. Please verify that the options are correct:

Option		Setting
-----		-----
Serial Number	:	#####
Platform	:	IPEX

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---

```
Number of Serial Ports      :      8
Max. Position IDs          :     1500
Max. Supervisor Sessions   :      60
Num of MEI-Network Link(s) :      1
Num of MEI-Observe Link(s) :      3
Configuration Control [CC] :    ENABLED
Formula Definition [FD]   :    ENABLED
NAC Connectivity [NAC]    :    ENABLED
M1 NACD MIS [NACD]       :    ENABLED
CCR/EAR MIS [CCR]        :    ENABLED
Datastream Reporting [DSR] :    ENABLED
Multiple Queue Assgn. [MQA] :    ENABLED
MAX Status Interface [MSI] :    DISABLED
```

Are the options correct? [y/n]

- 4 If the options are incorrect, type **n** and press **{Return}**. The system prompts you to reenter the keycode or abort the procedure. If the problem persists, the system aborts the procedure. Contact your Nortel Networks service representative.

- 5 If the system configuration is correct, type **y** and press **{Return}**.  
If the MQA option or NACD option, or both, are enabled, a warning message appears:

```
**WARNING**
```

```
The following options have been enabled: MQA NACD
A new installation must be performed to disable these
options, resulting in the loss of historical data!
```

Do you wish to proceed? [y/n]

- 6 If you wish to proceed, type **y** and press **{Return}**.

The date and time prompt appears.

```
***> Enter the correct date and time [MMDDhhmmYYYY]:
```

- 7 Go to the "Setting the date and time" section.

## Setting the date and time

The operating system's date and time are used in the timestamps in the on-screen install messages and in the Meridian MAX software installation log.

To set the date and time, follow these steps.

### Procedure 6-4

#### To set the date and time

- 1 In the date and time prompt, type the correct date and time and press **{RETURN}**.

The first pair of numbers represent the month, the second pair of numbers represent the day, the third pair of numbers represent the hour in the 24-hour time cycle, the fourth pair of numbers represent the minutes, and the last four numbers represent the year. For example, if 083013122000 is entered, the system asks you the following question:

```
Is the date Wed Aug 30 13:12:00 2000 correct? [y/n]:
```

- 2 If the date or time is incorrect, type **n** and press **{RETURN}**. The system then returns you to the date and time prompt. If the date and time are correct, type **y** and press **{RETURN}**. The system continues:

```
***> From this point on, many system messages will be
      timestamped. (TIME)
```

The word TIME in parentheses indicates a time message displayed by your system.

- 3 Go to the "Choosing the type of installation" section.

## Choosing the type of installation

Once the keycodes and date/time have been entered, the system displays the installation menu.

To select the new installation procedure, follow these steps.

**Procedure 6-5**  
**To select the new installation procedure**

- 1 Wait for the Meridian MAX Software Installation Menu to appear on the screen.

The Meridian MAX Software Installation Menu

-----

- 1 New Installation (first-time install of Linux and MAX)
- 2 Platform Upgrade (migrate from older platform to IPEX)
- 3 Installation Upgrade (update both Linux and MAX on current system)
- 4 Application Upgrade (update MAX only on current system)

-----

---> select the action to perform. [1-4,q]:

- 2 To select a new installation, type **1** and press **{RETURN}**.
- 3 Go to the "Selecting the reentry point" section.

**Selecting the reentry point**

After specifying the type of installation, you must indicate whether you want to start a previously aborted installation.

To continue the installation procedure, follow these steps.

**Procedure 6-6**  
**To select the reentry point**

- 1 Wait for the system to display the following prompt:

Will perform a New Installation.

---> Do you wish to restart a previously-aborted installation? [y/n,?]:

- 2 If you do not want to restart a previously aborted installation, type **n** and press **{RETURN}**. Go to the "Starting the software installation procedure" section.

If you want to restart a previously aborted installation, type **y** and press **{RETURN}**. The system continues:

\*\*\*> Determining whether the new installation can be re-started...

The system displays the Meridian MAX Installation/Upgrade Restart Menu.

**Note:** Only those reentry points that have been verified by your system are shown in the Meridian MAX Installation/Upgrade Restart Menu:

The Meridian MAX Installation/Upgrade Restart Menu

Restart Meridian MAX new installation from one of the following stages:

- 1 From the Beginning
- 2 Just before copying Linux files to hard disk
- 3 Just before copying MAX application files to hard disk
- 4 Just before booting from hard disk

--> Enter the number of the desired menu choice. (1-4, q, ?):

- 3** If you want to quit, type **q** and press **{RETURN}**. The installation is aborted and a prompt appears to allow you to restart the installation.
- If you want to restart the installation from the beginning, type **1** and press **{RETURN}**.

The system displays the following message:

You have chosen to start the Meridian MAX new installation from the beginning.

- If you want to restart the installation just before the Linux files are copied to the hard disk, type **2** and press **{RETURN}**.

The system displays the following message:

You have chosen to start the Meridian MAX new installation at the point where the Linux files are about to be copied to the hard drive.

- If you want to restart the installation just before the Meridian MAX application files are copied to the hard disk, type **3** and press **{RETURN}**.

The system displays the following message:

You have chosen to start the Meridian MAX new installation at the point where the application files are about to be copied to the hard drive.

- If you want to restart the installation just before the Meridian MAX system boots from the hard disk, type **4** and press **{RETURN}**.

The system displays the following message:

```
You have chosen to start the Meridian MAX new installation
at the point where the system is about to be booted from
the hard disk for the first time.
```

- 4 Go to the "Starting the software installation procedure" section.

## Starting the software installation procedure

At this stage, the system is ready to install the software. A warning message appears to indicate the significance of this step.

To continue the installation procedure, follow these steps.

### Procedure 6-7

#### To start the software installation procedure

- 1 Wait for the system to display the following prompt:

```
WARNING:      Meridian MAX new installation requires
               overwriting the hard disk. This means that
               FILES AND DATA ON THE DISK WILL BE
               DESTROYED.
```

```
---> Do you wish to begin Meridian MAX new installation?
      [y/n,q,?]:
```

- 2 Type **y** and press **{RETURN}**.

A series of system messages appear:

```
***> Beginning new installation. (TIME)
*****
* Stage 1 - Formatting Hard Drive and Installing OS      *
*****
```

```
***> Preparing the hard disk for installation...
***> Positioning tape to OS archive...
***> Starting installation tool...
```

```
Modified Anaconda Installer version 1.00
Red Hat Linux (C) 2000 Red Hat, Inc.
```

```
Reading package information...
Formatting / filesystem...
Formatting /boot filesystem...
Formatting /usr filesystem...
Formatting /var filesystem...
```

```
Formatting swap space on /dev/hdc7...
Preparing to install...
Extracting packages from tape...
Installing packages...
Performing post install configuration...
Linux installation completed
```

```
***> Formatting of hard disk and installation of OS
complete.
*****
* Stage 2 - Installing MAX Application Files *
*****
```

```
***> Mounting disk partitions...
***> Installing the boot loader onto the hard disk...
***> Installing the MAX Application software... (TIME)
***> Creating MAX configuration files... (TIME)
```

```
*****
* Stage 3 - Preparing to Reboot From Hard Disk *
*****
```

```
***> Rewinding Meridian MAX Software Tape... (TIME)
***> Unmounting all mounted file systems... (TIME)
***> Synchronizing the installation disk...
```

```
*****
*****
```

The Meridian MAX new installation procedure has completed.

```
*****
*****
```

You may now remove the tape from the tape drive.

You must REBOOT the system and allow it to autoboot from the hard disk. Please power off the system now.

Please allow 10 seconds between turning the power off and on again to allow sufficient time for the power supply to reset.

```
*****
**** REBOOT THE SYSTEM ****
*****
```

System halted.

- 3 Remove the tape from the tape drive.
- 4 Reboot the system by first turning it off.
- 5 Wait 10 seconds for the power supply to reset before turning the system back on. The system continues to display messages:

```
LILO
Meridian MAX IPEX
boot:
Loading MAX10.....
Linux version 2.2.14-5.0 (root@porky.devel.redhat.com) (gcc
version egcs-2.91.66 19990314/Linux (egcs-1.1.2 release))
#1 Tue Mar 7 21:07:39 EST 2000
Detected 332607551 Hz processor.
Console: mono *MDA 80x25
Calibrating delay loop... 331.78 BogoMIPS
Memory: 257680k/262144k available (1060k kernel code, 416k
reserved, 2924k data, 64k init, 0k bigmem)
Dentry hash table entries: 262144 (order 9, 2048k)
Buffer cache hash table entries: 262144 (order 8, 1024k)
Page cache hash table entries: 65536 (order 6, 256k)
VFS: Diskquotas version dquot_6.4.0 initialized
CPU: Intel Mobile Pentium II stepping 0a
Enabling extended fast FPU save and restore...done.
Checking 386/387 coupling... OK, FPU using exception 16
error reporting.
Checking 'hlt' instruction... OK.
POSIX conformance testing by UNIFIX
mtrr: v1.35a (19990819) Richard Gooch
(rgooch@atnf.csiro.au)
PCI: PCI BIOS revision 2.10 entry at 0xfd9c5
PCI: Using configuration type 1
PCI: Probing PCI hardware
Linux NET4.0 for Linux 2.2
Based upon Swansea University Computer Society NET3.039
NET4: Unix domain sockets 1.0 for Linux NET4.0.
NET4: Linux TCP/IP 1.0 for NET4.0
IP Protocols: ICMP, UDP, TCP, IGMP
TCP: Hash tables configured (ehash 262144 bhash 65536)
Initializing RT netlink socket
Starting kswapd v 1.5
Detected PS/2 Mouse Port.
Serial driver version 4.27 with<4>keyboard: Too many NACKs
-- noisy kbd cable?
keyboard: Too many NACKs -- noisy kbd cable?
MANY_PORTS MULTIPORT SHARE_IRQ enabled
ttyS00 at 0x03f8 (irq = 4) is a 16550A
ttyS01 at 0x02f8 (irq = 3) is a 16550A
pty: 256 Unix98 ptys configured
```

```
apm: BIOS version 1.2 Flags 0x03 (Driver version 1.9)
Real Time Clock Driver v1.09
RAM disk driver initialized: 16 RAM disks of 4096K size
PIIX4: IDE controller on PCI bus 00 dev 39
PIIX4: not 100% native mode: will probe irqs later
    ide0: BM-DMA at 0xfc90-0xfc97, BIOS settings: hda:pio,
        hdb:pio
    ide1: BM-DMA at 0xfc98-0xfc9f, BIOS settings: hdc:DMA,
        hdd:pio
hda: SanDisk SDCFB-32, ATA DISK drive
hdc: ST313021A, ATA DISK drive\
hdd: Seagate STT20000A, ATAPI TAPE drive
ide0 at 0x1f0-0x1f7,0x3f6 on irq 14
ide1 at 0x170-0x177,0x376 on irq 15
hda: SanDisk SDCFB-32, 30MB w/1kB Cache, CHS=490/4/32
hdc: ST313021A, 12419MB w/512kB Cache, CHS=25232/16/63
floppy0: no floppy controllers found
md driver 0.90.0 MAX_MD_DEVS=256, MAX_REAL=12
raid5: measuring checksumming speed
raid5: MMX detected, trying high-speed MMX checksum
routines
    pII_mmx   : 773.430 MB/sec
    p5_mmx   : 821.055 MB/sec
    8regs    : 571.881 MB/sec
    32regs   : 325.755 MB/sec
using fastest function: p5_mmx (821.055 MB/sec)
scsi : 0 hosts.
scsi : detected total.
md.c: sizeof(mdp_super_t) = 4096
Partition check:
    hda: hda1
    hdc: hdcl hdc2 < hdc5 hdc6 hdc7 hdc8 >
autodetecting RAID arrays
autorun ...
... autorun DONE.
VFS: Mounted root (ext2 filesystem) readonly.
Freeing unused kernel memory: 64k freed
INIT: version 2.78 booting
        Welcome to Red Hat Linux
        Press 'I' to enter interactive startup.
Mounting proc filesystem [ OK ]
Configuring kernel parameters [ OK ]
Setting clock (utc): Thu Jul 27 15:29:37 GMT 2000 [ OK ]
Activating swap partitions [ OK ]
Setting hostname MAX00 [ OK ]
Checking root filesystem
/dev/hdc6: clean, 6468/384768 files, 20295/768088 blocks
[/sbin/fsck.ext2 -- /] fsck.ext2 -a /dev/hdc6
[ OK ]
Remounting root filesystem in read-write mode [ OK ]
Finding module dependencies [ OK ]
Checking filesystems
/dev/hdcl: clean, 25/25792 files, 5707/102784 blocks
/dev/hdc5: clean, 7922/897600 files, 64154/1792090 blocks
/dev/hdc8: clean, 108/280512 files, 9635/560440 blocks
```

```
Checking all file systems.  
[/sbin/fsck.ext2 -- /boot] fsck.ext2 -a /dev/hdc1  
[/sbin/fsck.ext2 -- /usr] fsck.ext2 -a /dev/hdc5  
[/sbin/fsck.ext2 -- /var] fsck.ext2 -a /dev/hdc8  
[ OK ]  
Mounting local filesystems [ OK ]  
Enabling swap space [ OK ]
```

Beginning Meridian MAX configuration procedure...

- 6 Go to the “Configuring the Meridian MAX 10 software” section.

## Configuring the Meridian MAX 10 software

After the software installation is completed and the system has been rebooted, you must set up the Meridian MAX application for your environment.

To configure the Meridian MAX, follow these steps.

### Procedure 6-8

#### To configure the Meridian MAX 10 software

- 1 Choose the operating mode.  
For more information, refer to the “Choosing Agent ID or Position ID mode” section.
- 2 Set up the Meridian MAX System database.  
For more information, refer to the “Setting up the System database” section.
- 3 Set up the Meridian MAX Historical database.  
For more information, refer to the “Setting up the Historical database” section.
- 4 Prepare the preproduction system.  
For more information, refer to the “Entering the Precutover mode” section.

## Choosing Agent ID or Position ID mode

To choose Agent ID or Position ID mode, follow these steps.

### Procedure 6-9

#### To choose Agent ID or Position ID mode

- 1 Wait for this prompt to appear:

```

---> Will the MAX system be in Agent-ID mode or
      Position-ID mode? (MAX must be in the same mode as
      the Meridian 1.)

```

```

Please enter either 'a' or 'p'. [a/p,?]:

```

- 2 If your Meridian MAX is in Agent ID mode or has MQA enabled, type **a** and press **{RETURN}**. If the system is in Position ID mode, type **p** and press **{RETURN}**.

**Note:** If your Meridian MAX has MQA enabled, ensure that your Meridian 1 is also in agent ID mode.

The system continues with the following prompt:

```

Please verify that the Meridian 1 is in the same mode as
MAX.

```

```

Is the Meridian 1 in XXXXX-ID mode? [y/n]:

```

**Note:** (The “xxxxx” is either Agent or Position, depending upon your selection.)

- 3 If the Meridian 1 is in the same mode as the Meridian MAX, type **y** and press **{RETURN}**.
- 4 Go to the “Setting up the system database” section.

## Setting up the System database

To set up the System database, follow these steps.

### Procedure 6-10

#### To set up the System database

- 1 Wait for the system to continue with the following messages:
 

```

***> Setting up directories and file permissions...(TIME)

***> Creating the System database...(TIME)

      System database created.

***> Loading static data files into System database...

      Loading data files for Training mode...

      Data files loaded

```
- 2 Wait for the system to display the language options installed on your system. The language options listed in this section are provided as an example only. Your system language options might differ:

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\*\*\*> Your current language options are:

Default: English

Secondary: French

---> Would you like to change your secondary language?  
[y/n]:

- 3** If the language options displayed by the system are correct and you do not want to change them, type **n** and press **{RETURN}**.

Go to Step 7.

If the language options displayed by the system are not correct and you want to change them, type **y** and press **{RETURN}**.

- 4** Wait for the system to display the available system secondary language options. For example:

\*\*\*> Available system secondary language options:

1. French
2. German
3. Spanish
4. Japanese

---> Please select the MAX secondary language by entering its number:

**Note:** Changing the secondary language only affects the Meridian MAX supervisor screens. All installation screens, as well as all maintenance and administration screens, remain in English.

- 5** Type the number associated with the secondary language option you want to install and press **{RETURN}**.

The system then displays the current system language options and the following message:

---> Are the language options correct? [y/n]:

- 6** If the language options displayed are not correct and you want to change them, type **n** and press **{RETURN}**. Go to Step 4.

If the language options displayed are correct, type **y** and press **{RETURN}**.

- 7** Wait for the system to display the following messages:

Creating User Language database... (TIME)

\*\*\*> User Language database created.

- 8** Wait for the system to display this prompt:

```
***>Which customer number would you like this MAX site to use?
```

- 9 Type the number between 0 and 99 (inclusive) that corresponds to the customer number assigned to your Meridian 1 switch and press **{RETURN}**.

The system displays the following message:

```
***> Customer number changed to ##
```

(where ## is the customer number you typed.)

- 10 Wait for the system to display the Meridian MAX Hardware and System Parameters screen.

At this point, you must go to the “Meridian MAX system configuration” chapter and complete the instructions on assigning the ports, specifying the system parameters, assigning the MSI or MEI links, and setting the capacity configurations. Once you have completed all those steps, return to this chapter, and go to the next step.

- 11 Go to the “Setting up the Historical database” section.

## Setting up the Historical database

At this point you should have completed all steps in the “Meridian MAX system configuration” chapter. This includes instructions on how to specify the parameters that control the data acquisition and storage capacity of the MAX system, including the Historical database.

### Procedure 6-11

#### To set up the Historical database

- 1 After completing the system capacity configuration screens as described in the “Meridian MAX system configuration” chapter, wait for the system to continue with the installation:

```
***> Historical database update starts.
```

```
***> Creating the MAX 10 Historical database for  
training mode.
```

```
***> Creating a new database (TIME)
```

```
***> End of Historical database update.
```

```
***> Loading data files for training mode...
```

```
Historical database loaded.
```

```
***> Setting the time to Thu Jul 27 12:00 2000 for  
Training mode.
```

Meridian MAX configuration procedure complete.

```
The boot-up process continues...
INIT: Entering runlevel: 3
Entering non-interactive startup
Initializing random number generator [ OK ]
Mounting other filesystems [ OK ]
Starting system logger: [ OK ]
Starting kernel logger: [ OK ]
Starting at daemon: [ OK ]
Starting INET services: [ OK ]
Starting lpd: [ OK ]
Starting keytable [ OK ]
Starting X Font Server: [ OK ]
Starting pre-max [ OK ]

** Meridian MAX Startup **

Initializing, please wait .....
Loading system language strings ... [ OK ]
Loading help strings ... [ OK ]
Starting logging facility ... [ OK ]
Loading real-time data for Training mode ... [ OK ]
Starting MAPA Controller ... [ OK ]
Meridian MAX release 10.xx
```

```
Meridian MAX Training Mode
Please login as 'precut' for more details.
```

A logon screen appears.

- 2 You must ensure that the installation is successful by viewing the Meridian MAX error log for any fatal messages.  
To do this, log on as **maint**. Then, use the instructions for accessing and viewing the error log in the *Meridian MAX 10 Maintenance and Diagnostics Guide* (NTP 553-4001-811), "Maintenance and administration programs: system running" chapter, "Diagnostics" section, "View MAX Error Log" subsection.
- 3 Ensure that the correct system options are enabled.  
Use the instructions in the *Meridian MAX 10 Maintenance and Diagnostics Guide* (NTP 553-4001-811), "Maintenance and administration programs: system running" chapter, "View/Modify Meridian MAX Options" section, "Current Options Display" subsection.
- 4 If the system is installed correctly, go to the next step.  
If the system is not installed correctly, reinstall it. Ensure that no errors occurred within the steps you want to skip. If you are unsure, restart the

reinstallation from the beginning. If the errors persist, contact your Nortel Networks distributor.

- 5 Insert a new blank tape into the tape drive for daily backups. Ensure that the write-protect tab on the blank cartridge tape is set to write-enabled to allow the system to write information on the tape. Use the tapes provided with your Meridian MAX 10 software package.
- 6 Go to “Entering the Precutover mode” section; or, if you want to set up your modems and workstations first, refer to the “Modems” chapter and the “Workstations” chapter.

## Entering the Precutover mode

The system is now in Training mode. The system date is also set to 2000-07-27.

### Procedure 6-12

#### To enter the Precutover mode

To enter the Precutover mode, follow these steps.

- 1 Make sure you have logged off the Meridian MAX Maintenance and Administration menu.  
A logon prompt appears.
- 2 At the logon prompt, log on as **precut**.
- 3 At the *Password* prompt, type the logon password supplied by your Nortel Networks distributor.

Refer to the “Operating modes” chapter to switch from the Training mode to Precutover mode.

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## Chapter 7: Meridian MAX system configuration

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During a software installation procedure, you are referred to this chapter to assign the Meridian MAX ports, adjust the system parameters, and define the capacity configurations.

All the sections in this chapter should be completed in the following order:

- 1 Assign the ports.  
Refer to the “Assigning the ports” section.
- 2 Specify the system parameters.  
Refer to the “Adjusting the system parameters” section.
- 3 Assign the MSI or MEI links.  
Refer to the “Assigning MSI or MEI links” section.
- 4 Specify the capacity configurations.  
Refer to the “Setting the capacity configurations” section.
- 5 Return to your previous software installation procedure.

## Assigning the ports

You must complete port assignments during a software installation or operating modes procedure.

### Fixed port assignments

Table 7-1 provides a list of predefined ports on the IPEX platform. These ports cannot be changed.

<b>Table 7-1 Meridian MAX ports</b>		
<b>Platform</b>	<b>Maximum number of ports</b>	<b>Predefined ports</b>
IPEX	8	<p>The console port is fixed on Port 1 and the diagnostic modem port is fixed on Port 2. The maintenance console and remote diagnostics modem can also be used as a supervisor display through Supervisor Display Access (SDA).</p> <p>The LAN connection is located at the Ethernet port on the NT1R03JB four-port I/O cable.</p>

## Required port assignments

Not all ports must be assigned. However, certain assignments must be set on the Meridian MAX. Table 7-2 provides a list of the devices that require port assignments.

<b>Table 7-2 Required ports assignments</b>	
<b>Devices</b>	<b>Comments</b>
High-Speed Link	Supported baud rates for the High-Speed Link are 9600 and 19 200 baud. Only one High-Speed Link is allowed per system. This device can be assigned to any port except Port 1 or Port 2.
Load Management Link	The supported baud rate for the Load Management Link is 9600. If the Meridian MAX has Configuration Control, the Load Management Link must be assigned. Only one Load Management Link is allowed per system. This device can be assigned to any port except Port 1 or Port 2.
Network Link	If the Meridian MAX has NAC Connectivity enabled, the Network Link must be assigned. Only one Network Link is allowed per system. The device can be assigned to any port except Port 1 or Port 2. It is connected at 2400, 9600, and 19 200 baud.

## Port assignment procedure

Perform the procedures in this chapter only if you were referred to it by a software installation or operating modes procedure. Once you have completed the procedures, return to the software installation or operating modes procedure you were performing.

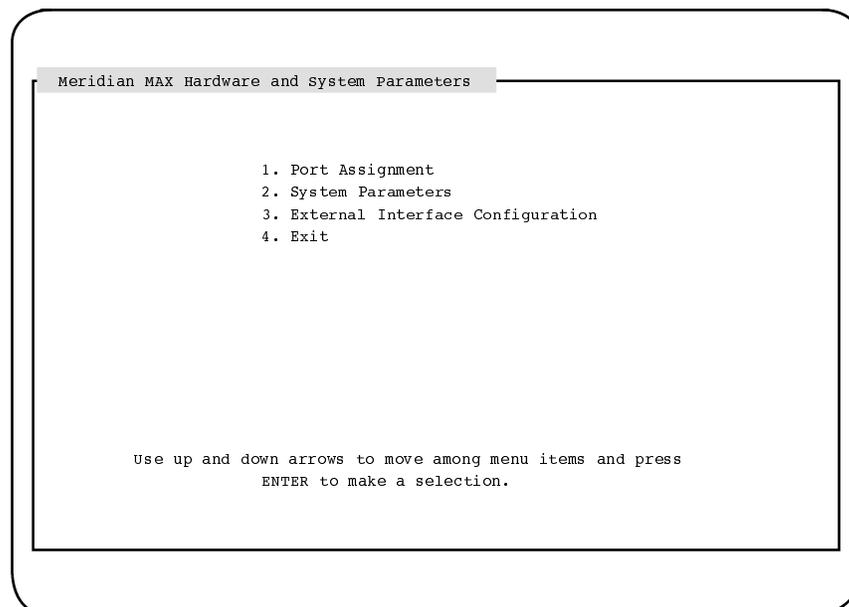
### Procedure 7-1

#### To assign Meridian MAX ports

- 1 Ensure that you have completed the relevant procedure up to the point where the Meridian MAX Hardware and System Parameters menu appears and you are referred to this chapter.

Figure 7-1

#### Meridian MAX Hardware and System Parameters



**Note:** The External Interface Configuration feature only appears on this menu if the MSI option or MEI option, or both, are enabled.

- 2 To enter your port assignments, type 1 followed by **{RETURN}**, or highlight the field using the cursor keys followed by **{RETURN}**.  
The Meridian MAX Communication Port Assignment screen appears.

**Figure 7-2**  
**Meridian MAX Communication Port Assignment**

Unassigned Displays: #

Meridian MAX Communication Port Assignment

Port	Device	Connect	Baud	Name/Comment
1	Console	Direct	9600	
2	Diagnostic Modem	Modem	9600	
3				
4				
5				
6				
7				
8				

PF1 = Commands   PF2 = Options   Remove = Erase field   F6 = Update default printers

The screen is only a sample.

- 3 Complete the Meridian MAX Communication Port Assignment screen using the “Fields” and “Function keys” sections described at the end of this procedure.
- 4 When the screen is finished, press **{PF1}** and select the “Save changes and exit” command.  
 The communication port assignment information is saved. The Meridian MAX Hardware and System Parameters menu appears.
- 5 Go to the “Adjusting the system parameters” section.

## Function keys

### PF1=Commands

The following commands are available in a pop-up window after pressing {PF1}:

#### Exit (without saving changes)

This command returns the system to the Meridian MAX Hardware and System Parameters menu without saving any changes.

**Note:** The above command is not available when you enter this screen for the first time. You must complete all port assignments before the system allows you to exit from the screen.

#### Save changes and exit

This command saves the changes and returns the system to the Meridian MAX Hardware and System Parameters menu.

### PF1=Select no command

This function key removes the Commands pop-up window from the screen.

### PF2=Options

This function key displays a description or list of valid entries for the field. Press this key when the cursor is on the *Device* field to view a pop-up menu of the devices available for your system.

### PF2=Select no option

This function key removes the Options pop-up menu from the screen.

### Remove=Erase field

This function key removes the contents of a field. To delete an existing entry, move the cursor to the line on which the device is located. Press {REMOVE} and the device is removed.

### F6=Update default printers

**Note:** If you are performing a software installation, bypass this field. The system does not allow you to assign default printers until you have defined at least one local printer.

This function key allows you to view or change the default printers. When all of the peripherals are assigned to ports, press {F6}. The system displays the Customer Default Printer Information pop-up window, which contains the Customer Default Tabular Printer name and the Customer Default Graphic Printer name. To modify the *Customer Default Tabular Printer*

field, highlight this field and press **{PF2}** to select the name of the printer you want to use as the default tabular printer. This printer is now the destination for all tabular reports whenever the default output device is selected. To modify the *Customer Default Graphic Printer* field, highlight this field and press **{PF2}** to select the name of the printer you want to use as the default graphic printer. This printer is now the destination for all graphic reports whenever the default output device is selected.

If there are defined printers, you must set up the default printer. Otherwise, you cannot define the system default printers.

## Fields

### Unassigned Displays

This field, which appears at the top of the screen, indicates the number of available displays that may be assigned to available ports. This number is represented by the number sign (#) in the sample screens.

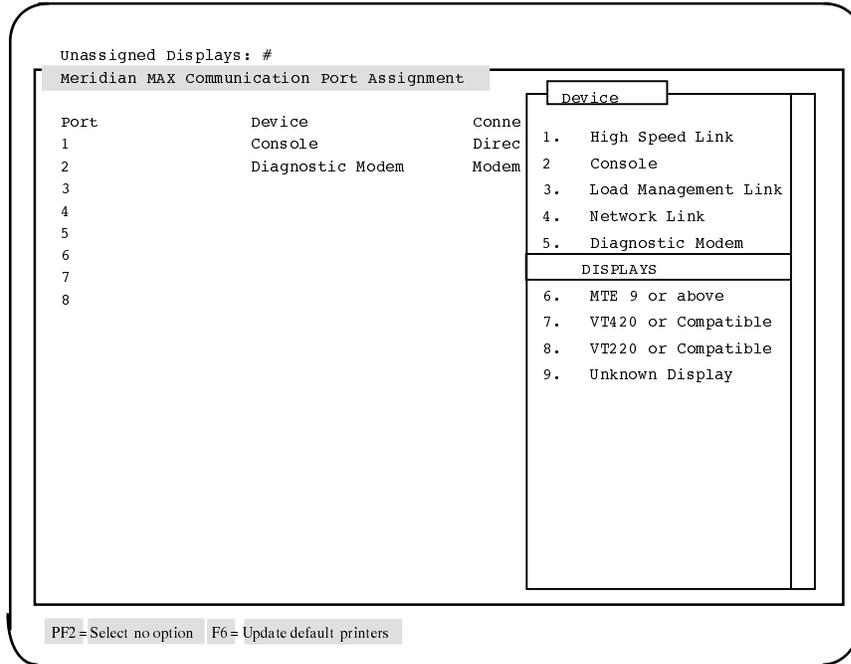
### Port

This field lists the ports. The ports are listed numerically. A maximum of eight ports can be assigned. Not every port has to be assigned.

### Device

This field is used to assign devices to the ports. To assign a device, move the cursor to the next available *Device* field and press **{PF2}** to view a pop-up menu of the devices available for your system. The following screen is an example. Your system's menu may differ.

**Figure 7-3**  
**Device options on the Meridian MAX Communication Port Assignment screen**



The following list contains important notes regarding the *Device* field:

- Refer to Table 7-1 for a list of predefined ports on the Meridian MAX. Refer to Table 7-2 for a list of other devices that must be assigned to the ports.
- The *Device* field can have up to six different entries: High-Speed Link, Console, Load Management Link, Network Link, Diagnostic Modem and the supervisor display (four options).
- The diagnostic modem port speed ranges from 2400 to 115 200 baud. Meridian MAX 10 also supports triggering the lower baud rates of 300/1200. However, these are not presented as baud rates that can be selected. The diagnostic modem port speed can only be modified by continuously hitting the **{BREAK}** key when the modem connects. The default speed is 57 600 baud. The diagnostic modem is used by personnel providing remote support.

The diagnostic modem is connected to the second serial port on the IPEX.

- If you are using a VT520 display, select VT420 when you press **{PF2}** while in the *Device* field.
- When Local Printer definitions are displayed on this screen, the default printer must be assigned before you are allowed to exit the screen.
- An arrow appears on the right-hand side of the pop-up menu if all of the devices cannot fit onto the screen. Use the up and down arrow keys to move through the menu. Select the desired device from the list presented. To enter a selection, either move the cursor to the selection and press **{RETURN}**, or enter the corresponding selection number and press **{RETURN}**. If a device name is dimmed, it cannot be selected.

**Connect**

This field provides the connection type for each device. This entry must be selected from one of the choices that appear in a pop-up window. The choices for this field are “Direct” and “Modem.” Based on the device assigned, this field may be filled in automatically by the system.

**Baud**

This field indicates the baud rate. The choices for the baud rate depend on the device selected.

Your options are:

- High-Speed Link—9600 or 19 200
- Network Link—2400, 9600, or 19 200
- Load Management Link—9600
- Displays (VT220, VT420—9600; Unknown Display—2400 or 9600)

The default baud rate of the High-Speed Link port is 9600. It can be changed only while the system is shut down. The baud rate for the High-Speed Link must match the baud rate of the High-Speed Link on the Meridian 1. For other devices, the baud rate is assigned automatically by the system (except for the Network Link).

**Name/Comment**

This field displays comments made on devices configured on the system. Press {PF3} to edit the *Name/Comment* field for a specific device.

## Adjusting the system parameters

After the ports have been assigned, the system parameters must be defined or modified.

### System parameters procedure

Perform this procedure to assign the system parameters. Do this after you have assigned the ports.

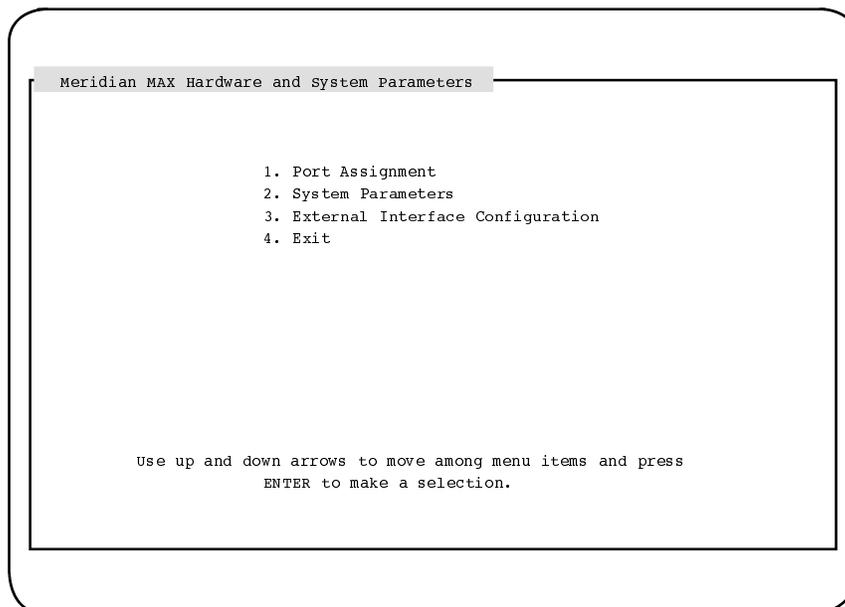
#### Procedure 7-2

##### To assign system parameters

- 1 Display the Meridian MAX Hardware and System Parameters menu.

Figure 7-4

#### Meridian MAX Hardware and System Parameters



**Note:** The External Interface Configuration feature only appears on this menu if the MSI option, or MEI option, or both, are enabled.

- 2 To assign system parameters, type **2** followed by **{RETURN}**, or highlight the field using the cursor keys followed by **{RETURN}**. The Meridian MAX System Parameters screen appears.

**Figure 7-5**  
**Meridian MAX System Parameters**

```
Meridian MAX System Parameters

Customer Name                : Nortel Networks
System Administrator Password : sysadmin
Meridian 1 Network Node Address : 888
NAC to MAX Login Password    : ntacdmx

MAX Hostname                 : MAX02
MAX IP Address               : 47.235.5.92
MAX Subnet Mask              : Default
MAX Default Router/Gateway Address : Default

PF1 = Commands  PF2 = Options  PF3 = Edit field  PF4 = Erase field
```

All of the fields shown on this screen appear only if your system has NACD and NAC options enabled. If these are not enabled, only the Customer Name field, System Administrator Password field, and all networking parameter fields appear.

- 3 Make any necessary updates to the Meridian MAX System Parameters using the “Fields” and “Function keys” sections at the end of this procedure.
- 4 When the screen is finished, press **{PF1}** and select the “Save changes and exit” command.  
The system parameters are saved. The Meridian MAX Hardware and System Parameters menu appears.
- 5 If MSI or MEI is enabled on your system, go to the “Assigning MSI or MEI links” section. Otherwise, go to the “Setting the capacity configurations” section.

## Function keys

### PF1=Commands

The following commands are available after pressing {PF1}:

#### Exit (without saving changes)

This command returns the system to the Meridian MAX Hardware and System Parameters menu without saving any changes.

#### Save changes and exit

This command saves the changes and returns the system to the Meridian MAX Hardware and System Parameters menu.

### PF1=Select no command

This function key removes the Commands pop-up window from the screen.

### PF2=Options

This function key displays a description or list of valid entries for the field.

### PF2=Select no options

This function key removes the Options pop-up window from the screen.

### PF3=Edit field

This function key allows you to edit the contents of a field.

### Remove=Erase field

This function key removes the contents of a field.

## Fields

### Customer Name

This field shows the name of your organization.

### System Administrator Password

This field shows the password used by the system administrator to log on to the system.

### Meridian 1 Network Node Address

This field shows the Home Location Code for the Meridian 1. It only appears if your system has Network Automatic Call Distribution (NACD).

It is used in reports showing network call traffic. If it is necessary to query the Meridian 1 for the Meridian 1 network node address, load Overlay 21 on the Meridian 1, and print the Customer Data Block.

The value of the Home Location Code is the value you should enter for the Meridian 1 network node address on the System Parameters screen. If your system has NAC, the Meridian 1 network node address is used by NAC for logging on. On the NAC's Network Definition/Installation screen, the *Node Address* field must match the *Meridian 1 Network Node Address* field in the Meridian MAX system.

The Meridian 1 network node address can only contain numbers and decimals. It must also match the node address assigned to the Meridian 1. If no address was assigned to the Meridian 1, the default value is **338**.

#### **NAC to MAX Login Password**

This field shows the password required for the NAC supervisor to log on to the MAX. The password shown must match the password used on the NAC.

This field only appears if your system has NAC connectivity enabled.

#### **MAX Hostname**

This field shows the name assigned to your Meridian MAX.

#### **MAX IP Address**

This field shows the LAN address assigned by your LAN administrator to your Meridian MAX. Only numeric characters and decimal points can be used in this field.

The IP address is in the format *a.b.c.d*, where *a* falls within the range of 0 to 223 (excluding 127), and *b*, *c*, and *d* fall within the range of 0 to 254.

#### **MAX Subnet Mask**

This field shows the subnet mask of the network. This field is either the system default or a value assigned by your network administrator.

If the system IP address is changed, the default subnet mask changes as well. The subnet mask is in the format *a.b.c.d*, where *a*, *b*, *c*, and *d* fall within the range of 0 to 255.

The subnet mask is a 32-bit number used by the network software on a local machine to determine which bits belong to the network or to the host parts of the Internet address.



**CAUTION**  
**Risk of high collision rates and reduced network efficiency**

An improper subnet mask can result in high collision rates and reduced network efficiency.

If the system default is not used, ensure that the subnet mask entered has been obtained from your network administrator.

The MAX subnet mask is not needed to connect to the network. If the subnet mask needs to be changed, obtain the mask from your LAN administrator.

**MAX Default Router/Gateway Address**

This field shows the address of the default router currently connected to the Meridian MAX. This field is either the system default or an address assigned by your network administrator.

The address is in the format *a.b.c.d*, where *a* falls within the range of 0 to 223 (excluding 127), and *b*, *c*, and *d* fall within the range of 0 to 254.

In a networked environment, routers (or gateways) provide connectivity between two networks.

The MAX Default Router/Gateway Address is not needed to connect to the network. If the router/gateway address needs to be changed, obtain the address from your LAN administrator.

## Assigning MSI or MEI links

For each MEI and MSI link, you must enter the port number that the third-party vendor will use to connect to the Meridian MAX. You must also enable or disable the links. This is done on the Meridian MAX External Interface Configuration screen. For more information on MSI and MEI, refer to the *Meridian MAX 8 MSI/MEI Protocol Reference Guide* (P0853414).

### MSI or MEI link procedure

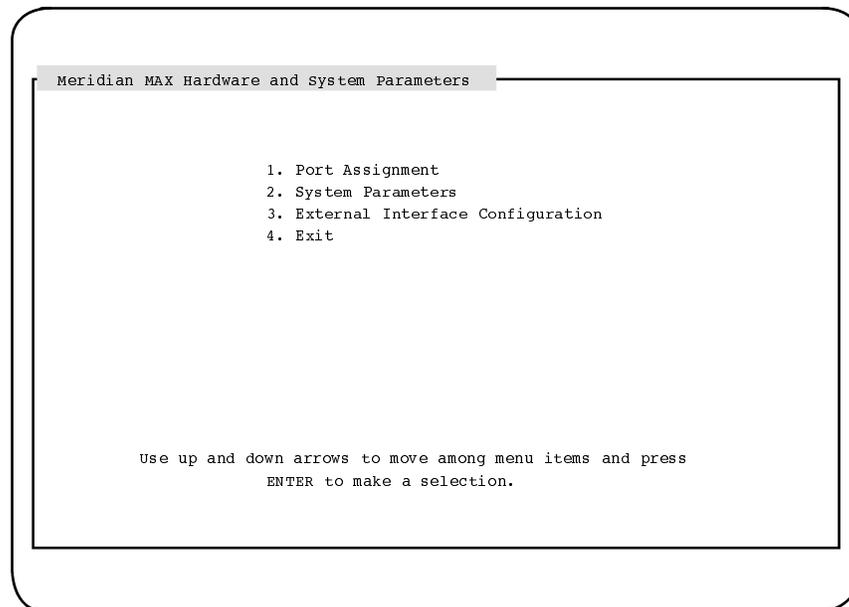
Perform this procedure after assigning the ports and setting the system parameters.

#### Procedure 7-3

##### To assign the MSI or MEI links

- 1 Display the Meridian MAX Hardware and System Parameters menu.

**Figure 7-6**  
**Meridian MAX Hardware and System Parameters**



**Note:** The External Interface Configuration feature only appears on this menu if the MSI option or MEI option, or both, are enabled.

- 2 To assign the MSI or MEI links, type **3** followed by **{RETURN}** or highlight the field using the cursor keys followed by **{RETURN}**.

The Meridian MAX External Interface Configuration screen appears.

**Figure 7-7**  
**Meridian MAX External Interface Configuration**

Link Type	Port Number	Enabled/Disabled	Name/Comment
MSI	44247	Disabled	msi
MEI-Network	45555	Enabled	mein
MEI-Observe	44300	Enabled	mei01
MEI-Observe	44301	Enabled	mei02
MEI-Observe	44302	Enabled	mei03

PF1 = Commands    PF2 = Options    Remove = Erase field

All of the fields appear only if your system has MSI and the maximum number of MEI options installed.

If you are entering this screen for the first time during a new installation, default values are assigned to the Port Number fields of each link.

- 3 Complete the Meridian MAX External Interface Configuration screen using the “Fields” and “Function keys” sections described at the end of this procedure.
- 4 When the screen is finished, press **{PF1}** and select the “Save changes and exit” command.  
The settings are saved. The Meridian MAX Hardware and System Parameters menu appears.
- 5 Go to the “Setting the capacity configurations” section.

## Function keys

### PF1=Commands

The following commands are available after pressing {PF1}:

#### Exit (without saving changes)

This command returns the system to the Meridian MAX Hardware and System Parameters menu without saving any changes.

**Note:** The above command is not available when you enter this screen for the first time. You must complete the configuration before the system allows you to exit from the screen.

#### Save changes and exit

This command saves the changes and returns the system to the Meridian MAX Hardware and System Parameters menu.

### PF1=Select no command

This function key removes the Commands pop-up window from the screen.

### PF2=Options

This function key displays a description or list of valid entries for a field.

### PF2=Select no options

This function key removes the Options pop-up window from the screen.

### Remove=Erase field

This function key removes the contents of a field.

## Fields

### Link Type

This field shows whether MSI or MEI links are installed on your system. These links transmit data from the Meridian MAX to the third-party vendor application.

Up to four MEI connections and one MSI connection are allowed to the Meridian MAX at any time. The MSI and MEI connections are logical LAN connections, however; there is only one physical LAN port. Of the four MEI connections, only one MEI-Network connection is allowed at any time. The remaining three can be MEI-Observe connections.

MEI-Network messages are designed for third-party vendor applications wishing to route calls through the public switched network on a real-time

basis. The MEI-Observe messages are designed for vendors wishing to monitor agent performance.

**Port Number**

This field shows the port number that the third-party vendor will use to connect to the Meridian MAX. The port numbers must be in the range of 44 245 to 50 000. Each link from the same Meridian MAX to a third-party vendor must have different port numbers. The same port numbers, however, can be used on different Meridian MAX systems linked to third-party vendors.

**Enabled/Disabled**

This field enables or disables the link from the Meridian MAX to the third-party vendor application.

**Name/Comment**

This field allows you to enter any comments you wish.

## Setting the capacity configurations

The Capacity Configuration feature is described in five parts:

- Introducing the Capacity Configuration feature
- Estimating time to completing operations and maintenance routines
- Configuring the system database
- Basic Capacity Configuration procedure
- Advanced Capacity Configuration procedure

### Introducing the Capacity Configuration feature

The Capacity Configuration feature allows you to customize your Meridian MAX system parameters, making the most efficient use of your system database storage and system memory. You can control the amount of historical data storage, as well as the amount of ACD data that is being presented on the real-time statistics displays. This information is displayed on the Basic Capacity Configuration screen and the Advanced Capacity Configuration screen.

#### **ATTENTION**

Consult with your vendor's telecommunication engineer before attempting to configure the system database. If the system is configured incorrectly, a subsequent system reconfiguration can take a very long time depending on database size.

Ensure you receive the completed and approved Capacity Configuration worksheets from the telecommunication engineer who has determined your configuration requirements using the MAX Capacity Configuration Calculator. You must do this preparation before starting your software installation. Failure to take this preparation before configuring the system database can result in an improper configuration and an extended installation time. Due to the large number of interdependent field values that affect database storage, you must consult the telecommunication engineer.

### **Functionality**

Capacity Configuration allows you to

- configure the Meridian MAX to the desired and expected ACD data acquisition workload, and the ACD historical data database storage capacity
- define basic desired or predicted Capacity Configuration parameters
- utilize your available hardware resources more efficiently
- monitor the ACD data acquisition and storage capacity usage patterns online to more accurately define the Meridian MAX Capacity Configuration parameters

### **Historical database**

As an increasing amount of data is saved in the Meridian MAX Historical database, the database tables may become full. Meridian MAX has two conditions under which a Historical database table is considered full.

- 1 The first condition occurs when one or more database tables reach the expected disk space limit for the Meridian MAX. In this case, Meridian MAX deletes the oldest data stored in its memory. The deleted data can be a day of daily data or interval data, a week of weekly data, or a month of monthly data. The current data is not lost.

The dates of the data stored in the tables always remain consistent. For example, if the two oldest dates of data are deleted from one table, the data for those dates is removed from all tables.

- 2 The second condition occurs when the following criteria is reached simultaneously:
  - The database table is full.
  - The oldest data is within the minimal data duration, as defined in the Capacity Configuration. The minimal data duration includes two days of interval and agent event log data, and one day, one week, or one month of daily, weekly, or monthly data, respectively.

In this case, Meridian MAX cannot store even the latest data into the Historical database.

## 7-22 Meridian MAX system configuration

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Under these conditions, the Meridian MAX system administrator or system operator should reconfigure the Meridian MAX Capacity Parameters more accurately, and as soon as possible.

### **Factors influencing midnight routines**

The time for the midnight routines (excluding midnight backup) depends on the database size of the interval data collected for one day, the system's processor, and the demand on input/output devices. The call rate is a major factor. This value varies depending on the capacity configuration parameters.

Interval data means historical data records kept for each 30-minute interval. Interval data records typically occupy 50 percent of the Historical database size. The amount of the interval data is the single largest factor contributing to the time for the midnight routines (excluding midnight backup).

The midnight backup time depends largely on the disk space occupied by the Historical database.

## Configuring the Historical database

The Capacity Configuration feature can be used to

- configure a new Historical database
- configure a Historical database using a previously existing Meridian MAX database
- reconfigure the Historical database through the Meridian MAX maintenance and administration programs

Your Meridian MAX database should only need to be configured once. This can be done during the initial software installation, an installation upgrade, or an application upgrade.

A well-planned database configuration (completed before the system software installation) and a provision for system growth are essential to maximize your system's efficiency. Not taking these measures can result in the need for a system database reconfiguration which, depending on its size, can take a very long time.

### Configuring a new Historical database

If you are configuring a new Historical database, you need to receive the completed and approved Capacity Configuration worksheets from your telecommunications engineer. These worksheets instruct you as to the values that should be entered on your Basic Capacity Configuration and Advanced Capacity Configuration screens.

### Modifying system capacities

Once you enter the Capacity Configuration feature, you should further modify your system capacities. The system displays the Basic Capacity Configuration screen. Press the {F6} function key to access the Advanced Capacity Configuration screen. Both screens display the transferred values from the previous Meridian MAX Historical database in their respective fields.

At this point, you can still affect changes to your Meridian MAX capacity configuration. You can alter the value for each field by moving the cursor to the field you want to change and entering the new value. Use your completed and approved Basic Capacity Configuration worksheet, seen in Table 7-3, and Advanced Capacity Configuration worksheet, seen in Table 7-4, to modify the values in any affected field.

**Note:** While changing the field values, closely monitor the amount of available disk space. This value changes with every modification to the screens. Ensure that the amount of “Expected” disk space does not exceed the amount of “Available” disk space.

### **System reconfiguration**

If you must reconfigure your Meridian MAX system, this process can be done through the maintenance and administration programs.

Refer to the *Meridian MAX 10 Maintenance and Diagnostics Guide* (NTP 553-4001-811), “Maintenance and administration programs: system shutdown” chapter, for more information.

### **Capacity Configuration worksheets**

Use the Basic Capacity Configuration worksheet and the Advanced Capacity Configuration worksheet when you create your Meridian MAX system database. Obtain the completed worksheets from your telecommunications engineer.

First, enter the system capacities of your current Meridian MAX system database into the “Actual Value” column. Second, determine field values that allow for future system growth. Enter this number in the “Expansion Value” column and use it as the capacity configuration parameter for your Meridian MAX system.

The amount of period data on a printed report depends on the amount of daily data. The amount of shift data on a printed report depends on the amount of interval data.

<b>Table 7-3 Basic Capacity Configuration worksheet</b>			
<b>Field name</b>	<b>Subfield name</b>	<b>Actual value</b>	<b>Expansion value</b>
<b>M1 Positions</b>	N/A		
<b>M1 Supervisors</b>	N/A		
<b>Agent IDs</b>	N/A		
<b>DNIS</b>	N/A		
<b>Activity Code</b>	N/A		
<b>Avg. Calls per Hour</b>	N/A		
<b>Queues</b>	ACD-DNs		
	CDNs		
	IVR/MAIL		
<b>ACD Trunk Level Reporting</b>	N/A		
<b>Routes</b>	RAN		
	ACD Auto Terminate (AT)		
	ACD Non AT		
<b>ACD Trunks</b>	Auto Terminate (AT)		
	Non AT Trunks		
<b>Operation Hours</b>	Agent Shifts Per Day		
	Hours Per Day		
	Days Per Week		
—continued—			

<b>Table 7-3 (continued) Basic Capacity Configuration worksheet</b>			
<b>Field name</b>	<b>Subfield name</b>	<b>Actual value</b>	<b>Expansion value</b>
<b>Storage Duration</b>	Interval Data (days)		
	Daily Data (days)		
	Weekly Data (weeks)		
	Monthly Data (months)		
	Event Log Data (days)		
—end—			

*Note:* Before any changes can be saved in the Basic Capacity Configuration screen, you must view the Advanced Capacity Configuration screen by pressing {F6}. Once you have viewed the screen and made any additional changes, return to the Basic Capacity Configuration screen to save all of the changes.

<b>Table 7-4 Advanced Capacity Configuration worksheet</b>			
<b>Field name</b>	<b>Subfield name</b>	<b>Actual value</b>	<b>Expansion value</b>
<b>ACD Queue Operations (per int.)</b>	Dest. Qs per CDN		
	Dest. Qs per ACD-DN		
	Rem. Src. Qs per ACD-DN		
	Primary Answering Qs		
—continued—			

<b>Table 7-4 (continued) Advanced Capacity Configuration worksheet</b>			
<b>Field name</b>	<b>Subfield name</b>	<b>Actual value</b>	<b>Expansion value</b>
<b>Trunk Reassignment (per int.)</b>	AT Trunk to Queue		
	Qs Receiving Transfers		
<b>Position Reassignment (per int.)</b>	Pos. to Supervisor		
	Pos. to Queue		
<b>Activity Code Usage (per int.)</b>	Activity Codes per Q		
<b>Number of Agents using Activity Codes (per int.)</b>	Num Agt Using Act Codes		
<b>Qs Logged in per Agent</b>	N/A		
<b>Agent Events (per day)</b>	Logins per Agent		
	Walkaways per Agent		
—end—			

*Note:* Once you have made changes to the Advanced Capacity Configuration screen, you must return to the Basic Capacity Configuration screen where you can then save the changes.

## Basic Capacity Configuration procedure

Perform this procedure after assigning the ports, setting the system parameters, and assigning the MSI and MEI links.

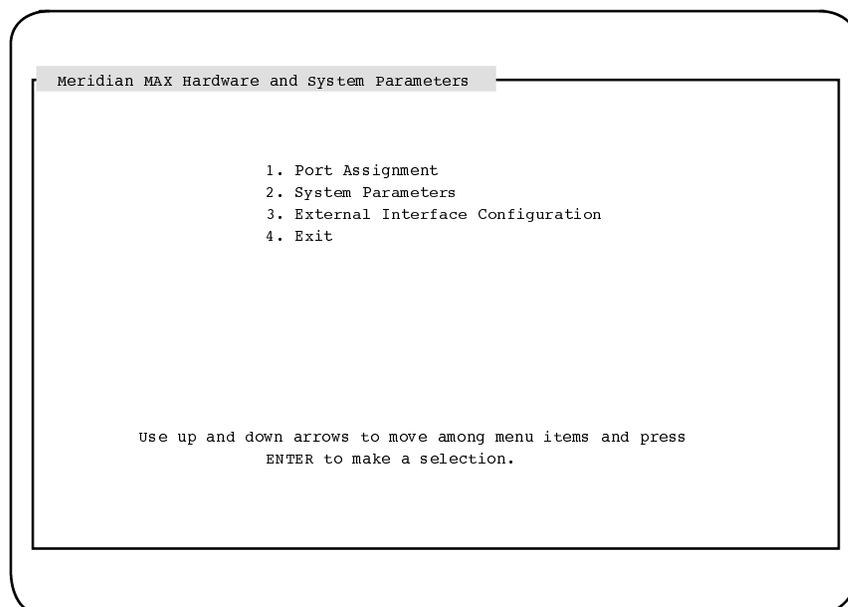
### Procedure 7-4

#### To assign the basic capacity configurations

- 1 Display the Meridian MAX Hardware and System Parameters menu.

**Figure 7-8**

**Meridian MAX Hardware and System Parameters**



**Note:** The External Interface Configuration feature appears on this menu only if the MSI option or MEI option, or both, are enabled.

- 2 Type **4** followed by **{RETURN}** to exit.
- 3 If you are performing an operating mode procedure (such as switching from Training to Precutover, or from Precutover to Product), return to that operating mode.
- 4 Wait for the system to display the Basic Capacity Configuration screen. This is only a sample. Your values may differ.

**Figure 7-9**  
**Basic Capacity Configuration**

Basic Capacity Configuration				Eff. Date 2000/07/06	NEW
	Expected	Maximum			
Ml Positions	800	1200			
Ml Supervisors	50	100			
Agent IDs	1500	2400			
DNIS	200	500			
Activity Codes	100	500			
Avg. Calls per Hour	9000	30000			
Queues ( 110)		240		Expected	Maximum
ACD-DNS	80		Operation Hours		
CDNs	20		Agent Shifts Per Day	2	5
IVR/MAIL	10		Hours Per Day	14	24
Routes ( 251)		256	Days Per Week	5	7
RAN	20				
ACD Auto Term (AT)	120		Storage Duration		
ACD Non AT	111		Interval Data (days)	8	
ACD Trunk Level Rpt	OFF		Daily Data (days)	31	
ACD Trunks (1800)		2000	Weekly Data (weeks)	56	
Auto Termin (AT)	600		Monthly Data (months)	36	
Non AT	1200		Event Log Data (days)	4	

Disk Space	
Available	600 MB
Expected	345 MB

Help = Help PF1 = Commands PF2 = Options Remove = Erase field PF6 = Advanced Capacity

- 5 Complete the Basic Capacity Configuration screen using the “Fields” and “Function keys” sections described at the end of this procedure.  
The Basic Capacity Configuration screen displays limits or maximums for the various capacity configuration parameters. These limits are either configured by the user, or imposed by the hardware or purchased options.
- 6 After the Basic Capacity Configuration screen is completed, press **{F6}** to display the Advanced Capacity Configuration screen.
- 7 Go to the “Advanced Capacity Configuration” procedure.

## Function keys

### PF1 = Commands

The following commands are available after pressing **{PF1}**:

#### Save Configuration and Exit

This command saves the new configuration and exits. This selection is only available if a new configuration is shown on the screen.

**Restart with Initial Values**

This command restores the starting values of a new configuration in the “Expected” column and restarts the editing session. This option is available only if a new configuration appears on the screen.

**PF2 = Options**

This function key shows valid field ranges.

**Remove = Erase field**

This function key resets an entered value in the selected field to the minimum value allowed.

**F6 = Advanced Capacity**

This key changes the display to the Advanced Capacity Configuration screen of the new configuration.

**F7 = Validate Fields**

This key validates the field values. If there are any errors, a window appears in the upper right corner of the screen, describing the error. Once the error is corrected, the error pop-up window disappears or another error message appears. If there are no errors, the following message appears at the bottom of the screen:

```
Validation is complete. There are 0 errors.
```

Whenever you press the [Validate fields] key during an upgrade or capacity reconfiguration, the following message appears:

```
Checking for any potential loss of data...
```

If no potential loss of data occurs, the system continues.

If a potential loss of data does occur, the following message appears in a pop-up window:

```
Warning-Potential Data Loss The new configuration will retain
XX of YY days of existing interval data
XX of YY days of existing daily data
XX of YY weeks of existing weekly data
XX of YY months of existing monthly data
XX of YY days of existing event log data
```

(where XX represents the number of the data units that will be retained, and YY represents the number of data units currently stored in the database)

This message is followed by another message that explains what fields need to be adjusted to avoid data loss. For example, the following message explains the potential trunk data loss:

```
If you do not wish to lose data, please adjust storage duration
fields, avg. calls per hour or trunk level report. If trunk
level report is OFF, you may also adjust the number of routes.
If it is ON, you may adjust the number of trunks, the trunk
reassignment percentage, the number of call transfers received
per queue or the number of primary answering queues.
```

For more information, refer to the Meridian MAX Maintenance and Diagnostics Guide. Press ENTER to continue.

Press {RETURN} to return to the Basic Capacity Configuration screen. Change the fields listed in the message and repeat the validation until no data loss occurs.

## Column headings

### Expected

This column shows the expected or required capacity for your system. This column is filled with default values for a new installation, or from the previous expected values for a Meridian MAX upgrade or a capacity reconfiguration. During a new configuration, these values can be changed. The values become view-only once the new configuration is saved. It is recommended that you enter the maximum capacity you expect each of these fields to reach by the end of one year.

### Measured/Maximum

If you select the “Current” configuration view (if enabled), this column shows the measured values of the current Capacity Configuration parameters, which are the capacity maximums reached in a previous Meridian MAX operation.

*Note:* Detailed field descriptions for the Basic Capacity Configuration screen’s measured values are shown in Table 7-5.

If you are configuring a new system, this column shows the “*Maximum*” values of the capacities set by the system. You cannot change the values in this column.

For fields where no artificial maximum applies, a blank appears. Queues, routes, and trunks only have a maximum for their totals, not for their components.

**Hint**

This column appears next to the Storage Duration fields only when the expected disk space exceeds the amount of available disk space. This column is used to indicate suggested values for each storage duration field that would reduce the expected disk space to a size that would fall within the amount of available disk space, if possible. Once that is done, the “Hint” column disappears.

*Note:* As the field values for the storage duration are changed, the suggested values for the others in the “Hint” column can change as well to indicate that further modification is needed.

**Fields**

**Eff. Date**

This field shows the date on which the configuration occurs. This field can be viewed but not changed.

**New/Current**

This field shows the configuration status of the Basic and Advanced Capacity Configuration screens. If you are configuring a new capacity, the field displays NEW. If you are viewing a current configuration, the field displays CURRENT.

**Disk Space**

These fields show the disk space measured in megabytes (1 048 576 bytes). It is recommended that you keep a careful eye on these fields as you adjust the other fields on the screen to ensure that the system does not become overburdened.

**Available**

This field shows the amount of disk space available to store Historical data. The disk capacity for the IPEX is 600 Mbytes.

**Expected**

This field shows the forecasted disk space required by the

configuration entered on this screen. Each time a field is changed, this expected disk space is automatically changed to show the amount of disk space the change will require.

### **M1 Positions**

This field shows the total number of agent and supervisor positions defined on the Meridian 1 that are reported on by Meridian MAX. The range for this value is from one to the maximum number of positions defined as the system limit. It is recommended that you set this to the maximum number of expected positions.

The number of M1 positions is the sum of the number of M1 agent IDs and the number of M1 supervisor positions.

### **M1 Supervisors**

This field shows the total number of supervisors defined on the Meridian 1 that are reported on by Meridian MAX. It is recommended that you increase the current number of supervisors by 20 percent and enter the total in this field. This is done to anticipate growth.

### **Agent IDs**

This field shows the total number of agents. The range for this value is from one to the maximum number of agents defined as the system limit if Meridian MAX is in agent-ID mode. It is recommended that this be set to the expected maximum. If Meridian MAX is in position mode, the number of agents cannot be edited and is set to be equal to the number of positions.

### **DNIS**

This field shows the total number of Dialed Number Identification Services (DNIS). The range for this value is from one to the maximum number of DNIS defined as the system limit. It is recommended that you enter a figure that anticipates growth in the system.

### **Activity Codes**

This field shows the total number of activity codes expected to be used. The range for this value is from one to the maximum number of activity codes defined as the system limit. It is recommended that you enter a reasonable number that anticipates growth. Remember to allow for wrong numbers. The number of activity codes used at each queue is defined on the Advanced Capacity Configuration screen.

### **Avg. Calls per Hour**

This field shows the average number of simple calls received per hour by the Meridian 1 over a 24-hour period. The range for this value is from two to the maximum number of calls per hour defined as the system limit. The average number of calls per hour must be an even number. It is recommended that this field be set high enough to take into consideration the busiest hour expected on the busiest day, along with future increases in call rates.

### **Queues**

This field shows the total number of ACD-DN, CDN, and IVR queues with RPRT set to “Yes” on the Meridian 1. The value in the round brackets, next to the “Queue” heading, is the total number of queues specified in the three fields. If one of the queue values is changed, the total number is updated.

The total number of queues must be greater than zero and cannot exceed the maximum number of queues allowed.

It is recommended that each of the queue fields show a 20 percent increase over the number of queues being currently used. Do not overestimate these figures because they use a large amount of disk storage space.

#### **ACD-DNs**

This is the number of ACD queues. The range for this value is from one to the maximum number of ACD queues minus the total number of CDN and IVR queues.

#### **CDNs**

This is the number of CDN queues. The range for this value is from zero to the maximum number of ACD queues minus the number of ACD-DN and IVR queues. If zero is entered, no CDN report is generated by the Meridian MAX.

#### **IVR/MAIL**

This is the number of IVR queues. The range for this value is from zero to the maximum number of ACD queues minus the number of ACD-DN and CDN queues.

### **Routes**

This field shows the total number of routes excluding the internal route. This total includes RAN, ACD AT, and ACD Non AT routes. The value in the round brackets, which appears next to the “Route” heading, is the total

number of ACD routes specified in the three fields. If one of the route values is changed, the total number is updated.

It is recommended that each of these fields be increased to anticipate for growth. The total number of routes must be greater than zero.

**RAN**

This field shows the number of RAN routes. The range for this value is from zero to the maximum number of routes minus the number of ACD Auto Terminate (AT) and ACD Non AT routes.

**ACD Auto Term (AT)**

This field shows the number of ACD AT routes. The range for this value is from zero to the maximum number of routes minus the number of RAN and ACD Non AT routes.

The number of AT routes must be less than or equal to the number of AT trunks. Also, the number of AT routes and the number of AT trunks must both be equal to zero or both be greater than zero.

**ACD Non AT**

This field shows the number of ACD Non AT routes. The range for this value is from zero to the maximum number of routes minus the number of RAN and ACD AT routes. The number of ACD Non AT routes must be less than or equal to the number of Non AT trunks. The number of ACD Non AT routes and the number of Non AT trunks must both be equal to zero or both be greater than zero.

**ACD Trunk Level Rpt**

This field indicates whether the ACD trunk level detailed reporting is turned on or off.

It is recommended that the ACD Trunk Level Reporting field be turned off. This saves disk space and also improves the performance of the Meridian MAX system. If an error message appears in the system error log indicating that the process table is full, the system load is too high. Trunk Level Reporting should then be turned off if it is not already turned off.

*Note:* Data will be lost if the Trunk Level Reporting is turned off at this point.

### **ACD Trunks**

This field shows the total number of trunks. This total includes ACD AT and ACD Non AT trunks. The value in the round brackets, which appears next to the “ACD Trunks” heading, is the total number of ACD trunks specified. If one of the trunk values is changed, the total number is updated.

The total number of ACD trunks must be greater than zero.

### **Auto Termin (AT)**

This field shows the number of ACD AT trunks. The range for this value is from zero to the maximum number of trunks minus the number of ACD Non AT trunks.

The number of ACD AT trunks must be greater than or equal to the number of ACD AT routes. Also, the number of ACD AT routes and the number of AT trunks must both be equal to zero or both be greater than zero.

### **Non AT**

This field shows the number of ACD Non AT trunks. The range for this value is from zero to the maximum number of ACD trunks minus the number of ACD AT trunks.

The number of Non AT trunks and the number of ACD Non AT routes must both be equal to zero or both be greater than zero.

### **Operation Hours**

These fields show the operation time parameter group. Keep in mind that these settings use a large amount of disk storage space.

#### **Agent Shifts Per Day**

This field shows the number of agent shifts (agent rotations) per day. The range for this value is from 1 to 5.

#### **Hours Per Day**

This field shows the number of operation hours per day. This value is used to determine the number of intervals per day. The range for this value is from 1 to 24.

#### **Days Per Week**

This field shows the number of workdays per week. The range for this value is from 1 to 7.

**Note:** To ensure that Meridian MAX collects all the calls that are abandoned, set the *Hours Per Day* field to 24 and the *Days Per Week* field to 7.

### **Storage Duration**

These fields show the length of time to be used by the system to collect data for reports. If 7 is entered in the “*Daily Data*” field, it indicates that data should be collected for the previous seven days.

If 7 is entered in the “*Weekly Data*” field, it indicates data should be collected for the previous seven weeks. These values are used when reports are created (for example, in the Report Definition feature of the Meridian MAX).

**Note:** If you enter values that cause the expected disk space to exceed the available disk space, the system displays a “Hint” column. For details, see the “Column headings” section earlier in this procedure.

#### **Interval Data**

This field shows the number of days for interval data storage. This value is greater than or equal to 2.

#### **Daily Data**

This field shows the number of days for daily data storage. This value is greater than or equal to 1.

Period reports are based on daily data. Set this value to, at least, the number of days in your longest period. If this value is not set correctly, your period reports may not reflect the correct values.

#### **Weekly Data**

This field shows the number of weeks for weekly data storage. This value is greater than or equal to 1.

#### **Monthly Data**

This field shows the number of months for monthly data storage. This value is greater than or equal to 1.

#### **Event Log Data**

This field shows the number of days for agent event log data storage. This value is greater than or equal to 2.

## Advanced Capacity Configuration procedure

Perform this procedure after completing the Basic Capacity Configuration procedure.

### Procedure 7-5

#### To assign the advanced capacity configurations

- 1 Follow the procedure described in this chapter to assign the basic capacity configurations.

After the Basic Capacity Configuration procedure is finished, the Advanced Capacity Configuration screen appears. This is only a sample. Your values may differ.

**Figure 7-10**  
**Advanced Capacity Configuration**

The screenshot shows the 'Advanced Capacity Configuration' screen with the following data:

Queue Operations (per int.)		Expected	Default	Eff. Date	NEW
Dest. Qs per CDN	4		4	2000/07/06	
Dest. Qs per ACD-DN	5		5		
Rem. src. Qs per ACD-DN	2		2		
Primary Answering Qs	50		50		

Trunk Reassignment (per int.)		Expected	Default
AT Trunk to Queue	20%	20%	
Qs Receiving Transfers	2	2	

Position Reassignment (per int.)		Expected	Default
Pos. to supervisor	10%	10%	
Pos. to queue	10%	10%	

Activity Code Usage (per int.)		Expected	Default
Activity Codes per Q	10	10	
Num Agt Using Act Codes	100		

Agent Events (per day)		Expected	Default
Logins per Agent	4	4	
walkaways per Agent	10	10	

Qs logged in per Agent		Expected	Default
Qs logged in per Agent	3	5	

At the bottom of the screen, there is a 'Disk Space' box with the following information:

Disk Space	
Available	600 MB
Expected	88 MB

Navigation keys at the bottom: Help = Help, PF1 = Commands, PF2 = Options, Remove = Erase field F20 = >>

- 2 Complete the Advanced Capacity Configuration screen using the "Fields" and "Function keys" sections described at the end of this procedure.
- 3 After the Advanced Capacity Configuration screen is completed, press {PF1} and select the "Return to Basic Capacity Configuration Screen" option.

- 4 Press **{PF1}** and select the "Save configuration and exit" option.

If you are performing a new installation, go to Step 6.

If you are performing an installation upgrade, the following message appears:

```
Checking for any potential loss of data...
```

If no potential loss of data occurs, the system continues. Go to Step 6.

If a potential loss of data does occur, the following message appears in a pop-up window:

```
Warning-Potential Data Loss The new configuration will retain
```

```
  XX of YY days of existing interval data
  XX of YY days of existing daily data
  XX of YY weeks of existing weekly data
  XX of YY months of existing monthly data
  XX of YY days of existing event log data
```

(where XX represents the number of the data units that will be retained, and YY represents the number of data units currently stored in the database)

This message is followed by another message that explains which fields need to be adjusted to avoid data loss. For example, the following message explains the potential trunk data loss:

```
If you do not wish to lose data, please adjust storage duration fields, avg. calls per hour or trunk level report. If trunk level report is OFF, you may also adjust the number of routes. If it is ON, you may adjust the number of trunks, the trunk reassignment percentage, the number of call transfers received per queue or the number of primary answering queues.
```

```
Do you wish to proceed with the new configuration? (y/n)
```

- 5 If you do not wish to continue with the new configuration, type **n** and then press **{RETURN}**.

The Basic Capacity Configuration screen returns with the Commands pop-up menu. Change the fields listed in the message until you are allowed to save and exit without potential data loss.

If you do want to proceed with the new configuration, type **y** and then press **{RETURN}**.

The following message appears:

```
Press ENTER to continue.
```

Press **{RETURN}**. The following pop-up message appears:

```
You are saving a new capacity configuration that requires a
database reconfiguration right after. This can take up to
15 minutes. If you do not wish to reconfigure the database
now, please choose 'Exit without Saving' to lose your
changes and re-enter them later.
```

For more information, refer to the Meridian MAX Maintenance and Diagnostics Guide.

```
Do you wish to proceed with the database reconfiguration?
(y/n)
```

If you do not want to proceed with the database reconfiguration, type **n** and then press **{RETURN}**. The Basic Capacity Configuration screen returns with the Commands pop-up menu. Change the fields listed in the message until you are allowed to save and exit without potential data loss.

If you do want to proceed with the database configuration, type **y** and then press **{RETURN}**. The system reconfigures the database and continues once the reconfiguration is complete.

- 6 Return to your software installation procedure.

## Function keys

### PF1 = Commands

The following commands are available after pressing **{PF1}**:

#### Return to the Basic Capacity Screen

If enabled, this command returns you to the Basic Capacity Configuration screen.

#### Restart with Initial Values

This command restores the starting values of a new configuration in the "Expected" column and restarts the editing session from the Basic Capacity Configuration screen. This option is available only if your system is not yet configured or if your system is configured but the system is down.

### PF2 = Options

This function key shows valid field ranges.

**Remove = Erase field**

This function key resets an entered value of the selected field to the minimum allowed value.

**F6 = Basic Capacity**

If enabled, this function key changes the display to the Basic Capacity Configuration screen.

**F7 = Validate Fields**

This function key validates the field value. If there are any errors, a window appears in the upper right corner of the screen describing the error. Once the error is corrected, the error pop-up window disappears or another error message appears. If there are no errors, the following message appears at the bottom of the screen:

```
Validation is complete. There are 0 errors.
```

Whenever you press the [Validate fields] key during an installation upgrade or capacity reconfiguration, the following message appears:

```
Checking for any potential loss of data...
```

If no potential loss of data occurs, the system continues.

If a potential loss of data does occur, the following message appears in a pop-up window:

```
Warning-Potential Data Loss The new configuration will retain
XX of YY days of existing interval data
XX of YY days of existing daily data
XX of YY weeks of existing weekly data
XX of YY months of existing monthly data
XX of YY days of existing event log data
```

(where XX represents the number of the data units that will be retained, and YY represents the number of data units currently stored in the database).

This message is followed by another message that explains what fields need to be adjusted to avoid data loss. For example, the following message explains the potential trunk data loss:

If you do not wish to lose data, please adjust storage duration fields, avg. calls per hour or trunk level report. If trunk level report is OFF, you may also adjust the number of routes. If it is ON, you may adjust the number of trunks, the trunk reassignment percentage, the number of call transfers received per queue or the number of primary answering queues.

For more information, refer to the Meridian MAX Maintenance and Diagnostics Guide.

Press ENTER to continue.

Press {RETURN} to return to the Advanced Capacity Configuration screen. Change the fields listed in the message and repeat the validation until no data loss occurs.

## Column headings

### Expected

This column shows the expected or required capacity for the configuration shown. The initial values in this column are calculated from the parameters entered in the Basic Capacity Configuration screen, for a new installation, or from the previous expected capacity values for a Meridian MAX upgrade or capacity reconfiguration.

### Measured/Default

If you select the “Current” configuration view (if enabled), this column shows the measured values of the current Capacity Configuration parameters.

*Note:* Detailed field descriptions for the Advanced Capacity Configuration screen’s measured values are shown in Table 7-6.

If you are configuring a new system, the “Default” column shows the default values for the expected limits. The values are preset or derived from the values entered on the Basic Capacity Configuration screen. The system limits, though not seen in the previous screen, do exist for some of the “Expected” values. Press [Options] to see the valid ranges.

## Fields

### Eff. Date

This field shows the date on which the configuration occurs. This field can be viewed but not changed.

### **Disk Space**

These fields show the disk space measured in megabytes (1 048 576 bytes). It is recommended that you keep a careful eye on these fields as you adjust the other fields on the screen to ensure that the system does not become overburdened.

#### **Available**

This field shows the amount of disk space available to store Historical data. The disk capacity for the IPEX is 600 Mbytes.

#### **Expected**

This field shows the forecasted disk space required by the configuration entered on this screen. Each time a field is changed, this expected disk space is automatically changed to show the amount of disk space the change will require.

### **Queue Operations (per int.)**

These fields show the characteristics of ACD queue operations.

#### **Dest. Qs per CDN**

This field shows the average number of destination queues per CDN in an interval. The range for this value is from zero to the number of ACD-DNs and IVR queues. This field is available only if the CCR option is enabled.

The number of destination queues per CDN must be equal to zero when there is no CDN. The number of CDNs is expected to be greater than zero when CCR is enabled. Before entering a value in this field, check the number of queues that have tried to send a call to a script. The number you enter in this field should be higher than the number of queues to allow for growth.

#### **Dest. Qs per ACD-DN**

This field shows the average number of local and remote destination ACD-DN and IVR queues per interval to which an ACD call may overflow as the result of a queue overflow, or basic, enhanced, or network time overflow or interflow. The range for this value is from 0 to 20.

#### **Rem. Src. Qs per ACD-DN**

This field shows the average number of remote source ACD-DN and IVR queues per interval from which an ACD call may network time

overflow to a local ACD-DN queue. The range for this value is from 0 to 50.

Before entering a value, check the number of remote sites and queues that have tried to target queues at your site. The number you enter in this field should be higher than this total to allow for growth.

**Primary Answering Qs**

This field shows the average number of primary entering queues (ACD queues to which all ACD calls are first directed in the Meridian 1 switch) in an interval. The range for this value is from zero to the total number of queues.

The number of primary answering queues must not exceed the total number of queues.

**Trunk Reassignment (per int.)**

These fields show the frequency with which trunks are reassigned. If you do not have the capability of moving trunks from queue to queue, ignore this section.

**AT Trunk to Queue**

This field shows the average percentage of auto terminate trunks reassigned to another queue in an interval. The range for this value is from 0 to 100 percent.

Before entering a value, look at the number and frequency that trunks are moved in a 30-minute period. The number you enter in this field should be higher than this figure to allow for growth.

**Qs Receiving Transfers**

This field shows the average number of manual call transfers received by an ACD-DN queue from another ACD-DN queue in an interval. The number of queues receiving transfers must not exceed the total number of queues.

Before entering a value, find the number of calls that are normally transferred from a queue to a queue and anticipate for growth.

**Position Reassignment (per int.)**

These fields show the frequency with which positions are reassigned. It is not necessary to frequently change these fields. Examine your busiest time period and note the frequency with which positions are reassigned. Use this period to calculate your averages.

**Pos. To Supervisor**

This field shows the average percentage of positions reassigned to another supervisor in an interval. The range for this value is from 0 to 100 percent.

**Pos. To Queue**

This field shows the average percentage of positions reassigned to another queue in an interval. The range for this value is from 0 to 100 percent.

**Activity Code Usage (per int.)**

This field shows the frequency with which activity codes are used on the Meridian MAX.

**Activity Codes per Q**

This field shows the average number of activity codes you expect to be used per ACD-DN (excluding CDN queues) in an interval. The range for this value is from zero to the number of activity codes.

The number of activity codes per queue must not exceed the total number of activity codes defined on the Basic Capacity Configuration screen.

**Num Agt Using Act Codes**

This field shows the maximum number of agents who can use activity codes in an interval. This can range from 0 to the number specified in the *Agent IDs* (Expected) field on the Basic Capacity Configuration display.

If this field is set to 0, the activity codes are sorted only by queue and not by agent. If the field is greater than 0, the activity codes are sorted by queue and by agent.

The activity code database can consume considerable disk space, especially if the *Num Agt Using Act Codes* field is much greater than 0.

If the expected size of the activity table database becomes too big, a warning message appears when you try to save or validate the values. The message indicates which field should be modified to reduce the size of the database.

**Qs logged in per Agent**

This field shows an estimate of the average number of ACD-DNs serviced simultaneously per agent. This value does not limit the number of simultaneous logons per agent. The range for this value is from 1 to 5. The default value for a new installation is 3 if the MQA feature is enabled. If MQA is disabled, the default value is 1.

This field only appears if your system has MQA.

**Agent Events (per day)**

These fields show the agent event frequency.

**Logins per Agent**

This field shows the average number of logon events per agent in a day. A logon and a logoff are together counted as one event. The range for this value is from 1 to 999.

**Walkaways per Agent**

This field shows the average number of walkaway events per agent in a day. A walkaway and a return are together counted as one event. The range for this value is from 0 to 999.

### Basic Capacity Configuration measured values

Table 7-5 provides detailed information regarding measured value fields for the Basic Capacity Configuration screen.

<b>Table 7-5 Basic Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Time</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
<b>M1 Positions</b>	Real-time data	End of interval	Exact number	<p>The measured value is an exact number and not an average.</p> <p>The measured value can exceed the expected value only if the switch has more positions defined than the Meridian MAX system.</p> <p>Meridian MAX only collects data for the expected number of positions. However, the measured value indicates to the user how many positions are actually defined on the switch. Measured values are not determined by using historical data. They are determined by using real-time data.</p>
<b>M1 Supervisors</b>	Real-time data	End of interval	Exact number	<p>The measured value is an exact number and not an average.</p> <p>The measured value can exceed the expected value only if the switch has more supervisors defined than the Meridian MAX system.</p>
—continued—				

<b>Table 7-5 (continued)</b>				
<b>Basic Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Time</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
				<p>Meridian MAX only collects data for the expected number of supervisors.</p> <p>However, the measured value indicates to the user how many supervisors are actually defined on the switch.</p> <p>If a supervisor is added on the switch, this is not reflected by Meridian MAX automatically.</p> <p>For the added or deleted supervisors to be detected by Meridian MAX, a configuration update or Meridian 1 initialization is required.</p> <p>Measured values are not determined by using historical data. They are determined by using real-time data.</p>
<b>Agent IDs</b>	System lifetime data	End of interval	Exact number	<p>The measured value is an exact number and not an average.</p> <p>The measured value can exceed the expected value only if the number of Agent IDs used exceeds the expected number of Agent IDs.</p> <p>Meridian MAX only collects data for the expected number of Agent IDs.</p> <p>However, the measured value indicates to the user how many Agent IDs are actually used.</p>
—continued—				

<b>Table 7-5 (continued)</b>				
<b>Basic Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Time</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
				<p>This number is updated at the end of every interval. It denotes the total number of agents used over the system lifetime.</p> <p>Agents are never deleted. If an agent logs off, the agent is not considered deleted. The agent still exists but is not operational. Therefore, the Agent ID number can only increase.</p>
<b>DNIS</b>	Current day data	End of interval	Exact number	<p>The measured value is an exact number and not an average.</p> <p>The measured value can exceed the expected value only if the total number of DNIS numbers used exceeds the expected number.</p> <p>Meridian MAX only collects data for the expected number of DNIS numbers.</p> <p>However, the measured value indicates to the user how many DNIS numbers are actually used.</p> <p>This number is updated at the end of every interval. It denotes the number of DNIS numbers used throughout the current day.</p> <p>The DNIS measured number is reset at midnight and the count restarts.</p>
—continued—				

<b>Table 7-5 (continued)</b>				
<b>Basic Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Time</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
<b>Activity Codes</b>	Real-time data	End of interval	Exact number	<p>The measured value is an exact number and not an average.</p> <p>The measured value can exceed the expected value only if the number of activity codes used exceeds the expected number.</p> <p>Meridian MAX only collects data for the expected number of activity codes.</p> <p>However, the measured value indicates to the user how many activity codes are actually used.</p> <p>This number is updated at the end of every interval. It denotes the total number of activity codes used over the system lifetime.</p>
<b>Avg. Calls per Hour</b>	Current day data	End of interval	Average	<p>This value is updated at the end of each interval. It is the average number of simple calls that are received since midnight.</p> <p>At midnight, this value is reset.</p>
<b>Queues</b>	Real-time data	End of interval	Exact number	<p>The measured value is an exact number and not an average.</p> <p>The measured value can exceed the expected value only if the switch has more queues defined than the Meridian MAX system.</p>
—continued—				

<b>Table 7-5 (continued)</b>				
<b>Basic Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Time</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
ACD-DNs				<p>Meridian MAX only collects data for the expected number of queues.</p> <p>However, the measured value indicates to the user how many queues are actually defined on the switch.</p> <p>This value is the total number of ACD-DNs + CDNs + IVR/Mail queues. It is updated at the end of each interval.</p> <p>Measured values are not determined by using historical data. They are determined by using real-time data.</p>
	N/A	N/A	N/A	<p>This number indicates the maximum number of ACD--DNs for which Meridian MAX collects data.</p> <p>This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.</p>
CDNs	N/A	N/A	N/A	<p>This number indicates the maximum number of CDNs for which Meridian MAX collects data.</p> <p>This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.</p>
—continued—				

<b>Table 7-5 (continued)</b>				
<b>Basic Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Time</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
IVR/MAIL	N/A	N/A	N/A	<p>This number indicates the maximum number of IVR/Mail queues for which Meridian MAX collects data.</p> <p>This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.</p>
<b>Routes</b>	Real-time data	End of interval	Exact number	<p>The measured value is an exact number and not an average.</p> <p>The measured value can exceed the expected value only if the switch has more routes defined than the Meridian MAX system.</p>
				<p>Meridian MAX only collects data for the expected number of routes.</p> <p>However, the measured value indicates to the user how many routes are actually defined on the switch.</p> <p>This value is the total sum of RAN routes, ACD Auto Terminate (AT) routes, and ACD Non AT routes.</p>
—continued—				

<b>Table 7-5 (continued)</b>				
<b>Basic Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Time</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
RAN	N/A	N/A	N/A	This number indicates the maximum number of RAN routes for which Meridian MAX collects data.  This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
ACD Auto Terminate (AT)	N/A	N/A	N/A	This number indicates the maximum number of ACD AT and ACD Non AT routes for which Meridian MAX collects data.  This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
ACD Non AT	N/A	N/A	N/A	This number indicates the maximum number of ACD AT and ACD Non AT routes for which Meridian MAX collects data.  This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
—continued—				

<b>Table 7-5 (continued)</b>				
<b>Basic Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Time</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
<b>ACD Trunk Level Reporting</b>	N/A	N/A	N/A	The valid values for this field are ON or OFF.  Measured values are not determined by using historical data. They are determined by using real-time data.
<b>ACD Trunks</b>	Real-time data	End of interval	Exact number	The measured value is an exact number and not an average.  This number is the total number of Auto Terminate (AT) trunks and Non AT Trunks.  If trunk level reporting is turned off, the measured route number is used.
Auto Terminate (AT)	N/A	N/A	N/A	This number indicates the maximum number of AT and Non AT trunks for which Meridian MAX collects data.  This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
Non AT	N/A	N/A	N/A	This number indicates the maximum number of AT and Non AT trunks for which Meridian MAX collects data.  This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
—continued—				

<b>Table 7-5 (continued)</b>				
<b>Basic Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Time</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
<b>Operation Hours</b>	N/A	N/A	N/A	
Agent Shifts Per Day	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
Hours Per Day	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
Days Per Week	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
<b>Storage Duration</b>	N/A	N/A	N/A	These fields are updated every day at approximately 2:00 a.m. after the daily midnight backup.
Interval Data (days)	All stored intervals	Daily	Exact number	This number indicates the amount of interval data, measured in days, currently stored on the system.
Daily Data (days)	All stored days	Daily	Exact number	This number indicates the amount of daily data, measured in days, currently stored on the system.
—continued—				

<b>Table 7-5 (continued)</b> <b>Basic Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Time</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
Weekly Data (weeks)	All stored weeks	Daily	Exact number	This number indicates the amount of weekly data, measured in weeks, currently stored on the system.
Monthly Data (months)	All stored months	Daily	Exact number	This number indicates the amount of monthly data, measured in months, currently stored on the system.
Event Log Data (days)	All stored days	Daily	Exact number	This number indicates the amount of agent event logged data, measured in days, currently stored on the system.
—end—				

### Advanced Capacity Configuration measured values

Table 7-6 provides detailed information regarding measured value fields for the Advanced Capacity Configuration screen.

<b>Table 7-6 Advanced Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Storage duration</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
<b>Queue Operations (per int.)</b>	N/A	N/A	N/A	
Dest. Qs per CDN	All stored months	Once per week	Average	The measured value provides the average number of target ACD-DNs per CDN to which calls are directed through CCR. The period of time for which this measurement is taken is defined in the Storage Duration -- Monthly Data field. The measured value can exceed the expected value.
Dest. Qs per ACD-DN	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
Rem. Src. Qs per ACD-DN	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
Primary Answering Qs	All stored months	Once per week	Exact number	The measured value provides the number of unique queues (ACD-DN, CDN, and IVR/Mail) to which all external calls are directed.
—continued—				

<b>Table 7-6 (continued)</b> <b>Advanced Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Storage duration</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
				<p>The period of time for which this measurement is taken is defined in the Storage Duration -- Monthly Data field.</p> <p>The expected value denotes the number of unique queues (ACD-DN, CDN, and IVR/Mail) per interval that would receive external calls. Therefore, the measured value can exceed the expected value.</p>
<b>Trunk Reassignment (per int.)</b>	N/A	N/A	N/A	
AT Trunk to Queue	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
Qs Receiving Transfers	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
<b>Position Reassignment (per int.)</b>	N/A	N/A	N/A	
Pos. to Supervisor	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
—continued—				

<b>Table 7-6 (continued)</b> <b>Advanced Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Storage duration</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
Pos. to Queue	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
<b>Activity Code Usage (per int.)</b>	N/A	N/A	N/A	
Activity Codes per Q	All stored intervals	Once per week	Average	The measured value provides the average number of activity codes per ACD-DN per interval.  The period of time for which this measurement is taken is defined in the Storage Duration -- Interval Data field.  The measured value can exceed the expected value.
Num Agt using Act Codes	All stored intervals	Once per week	Average	The measured value provides the average number of agents who use activity codes per interval.  The period of time for which this measurement is taken is defined in the Storage Duration -- Interval Data field.  The measured value can exceed the expected value.
<b>Qs Logged in per Agent</b>	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
—continued—				

<b>Table 7-6 (continued)</b> <b>Advanced Capacity Configuration measured value field descriptions</b>				
<b>Field name</b>	<b>Storage duration</b>	<b>Update rate</b>	<b>Measured value</b>	<b>Comment</b>
<b>Agent Events (per day)</b>	N/A	N/A	N/A	
Logins per Agent	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
Walkaways per Agent	N/A	N/A	N/A	This field has no measured value. Meridian MAX uses the expected number entered by the user to determine the expected database size.
—end—				

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## Chapter 8: Modems

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You can use a modem when one of the following items is located more than 15 meters (50 feet) from the Meridian MAX:

- a peripheral device, such as a remote diagnostic terminal or a supervisor display
- a Network Administration Center (NAC) system

Use a limited-distance modem when a peripheral device or a NAC is connected to the Meridian MAX through a direct connection, and the distance is between 15 meters (50 feet) and 8 kilometers (5 miles). If a direct connection cannot be supported, use a dial-up modem to connect the peripheral device or NAC to the Meridian MAX through the public service telephone network (PSTN).

You can use any modem with Meridian MAX 10 that is supported by the Red Hat Linux 6.2 operating system and that supports the minimum required Hayes AT command set.

For a list of the supported modems, refer to the Red Hat web site, in the hardware compatibility section for Linux 6.2.

### Skills required for modem configuration

Because there is such a variety of supported modems from different manufacturers, this guide cannot provide detailed procedures for configuring each type. Therefore, the person configuring the MAX modems should be a data communications technical specialist, or a person who understands modem technology and has experience with low-level modem configuration.

## Modem requirements

Modems supported by Red Hat Linux may be suitable for remote diagnostics, dial-up supervisor display, remote supervisor login, or a network link, if they support the correct subset of standard Hayes modem commands. They must also support a set of modem responses.

Table 8-1 shows the list of commands that must be supported. Table 8-2 shows the list of responses that must be supported.

<b>Table 8-1 Supported Hayes modem commands</b>	
<b>Command</b>	<b>Usage</b>
+++	Escape sequence
AT&C1	Carrier detect (CD) normal
AT&D0	Override DTR (NAC Netlink)
AT&D2	Normal DTR operation (for dial-up supervisor display)
AT&F	Recall factory settings
AT&W	Write parameters
ATDS1	Dial stored number
ATDS=1	Dial stored number (This command is used only with the NetComm SmartModem M&F.)
ATDS%0	Dial stored number (This command is used with the UDS 2440 modem)
ATDT...	Dial
ATE0	Echo off
ATH0	On hook
ATL0	Low speaker volume
ATQ0	Result codes on
—continued—	

<b>Table 8-1 (continued) Supported Hayes modem commands</b>	
<b>Command</b>	<b>Usage</b>
ATS0=1	Auto answer enabled with 1 ring
ATS2=128	Disable modem escape code character
ATS64=1	Dial/answer sequence abort
ATX4	Extended feature set
ATB1	ITU - T answer sequence set to US answer tone. (This command is used only with the US Robotics 28.8 Sportster or the US Robotics 33.6 Sportster.)
<b>-end-</b>	

<b>Table 8-2 Supported modem responses</b>	
<b>Command</b>	<b>Response</b>
0	OK
1	RING
2	CONNECT 1200
3	CONNECT 2400
4	CONNECT 4800
5	CONNECT 9600
6	CONNECT
7	NO CARRIER
8	MODEM ERROR
9	NO DIAL TONE
10	BUSY
11	NO ANSWER

## Modem cables

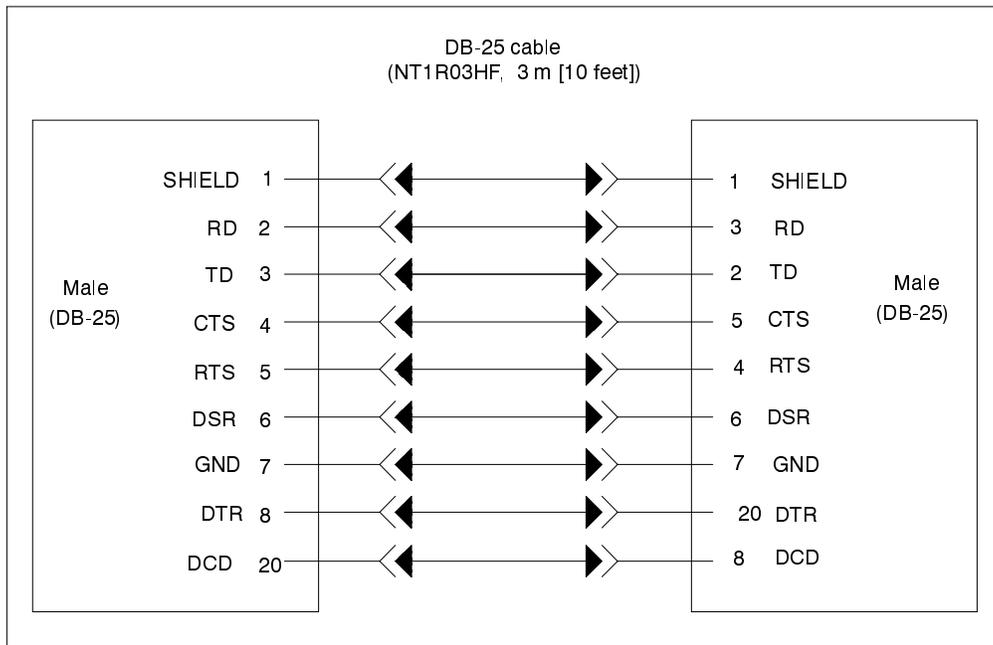
Connect modems to the Meridian MAX using the following modem cables: the NT1R03HF cable, the NT1R03Dx/Ex cable, and the NT7D99AA null modem cable.

Figure 8-1 shows the cabling arrangement for the NT1R03HF cable for use on the MAX end for remote diagnostic modems, dial-up supervisor modems, and the NAC 2 network link.

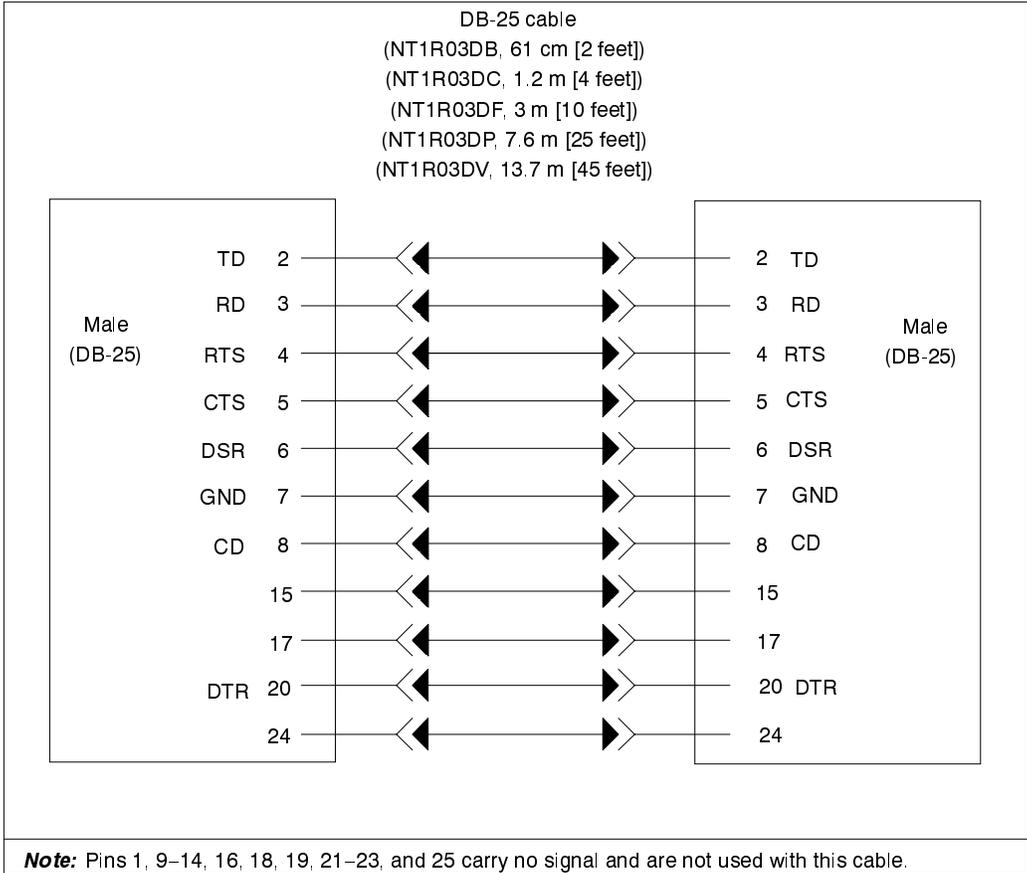
Figure 8-2 and Figure 8-3 show the cabling arrangement for the NT1R03Dx/Ex cable for use on the remote end for remote diagnostic modems and dial-up supervisor modems.

Figure 8-4 shows the cabling arrangement for the NT7D99AA cable for use with remote supervisor login and the NAC 2 network link.

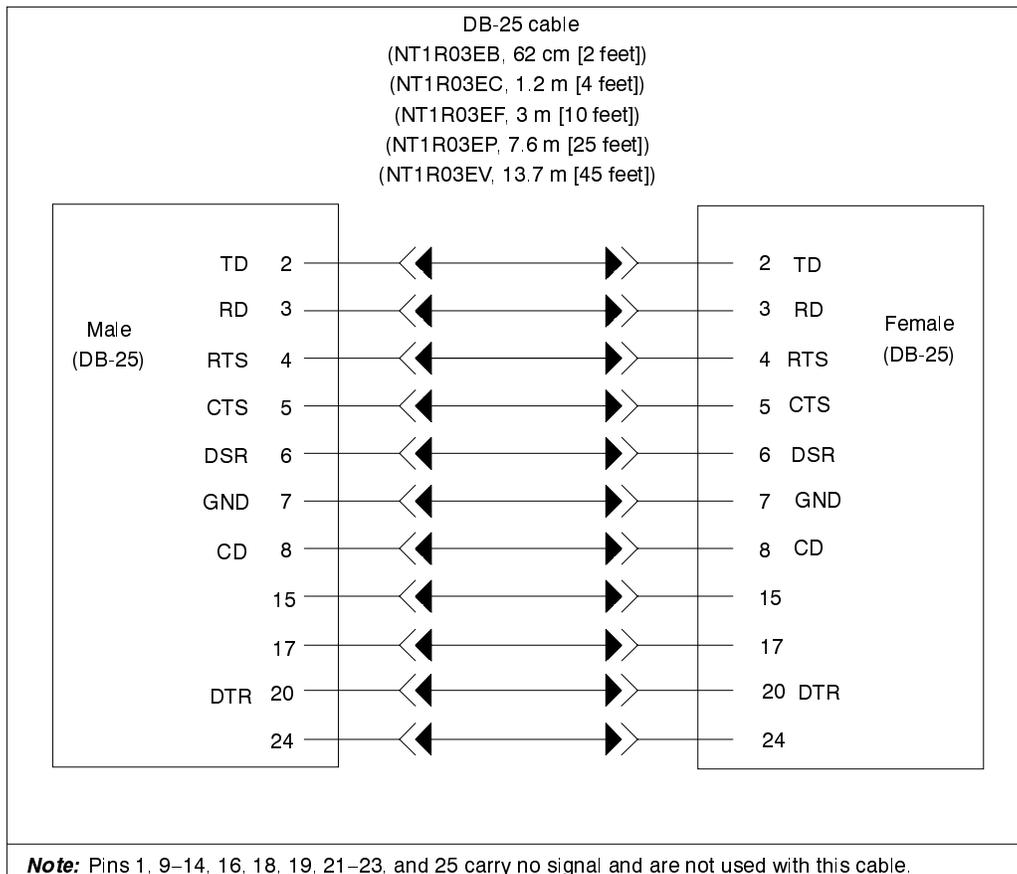
**Figure 8-1**  
**Cabling arrangement—modem connection cable NT1R03HF**



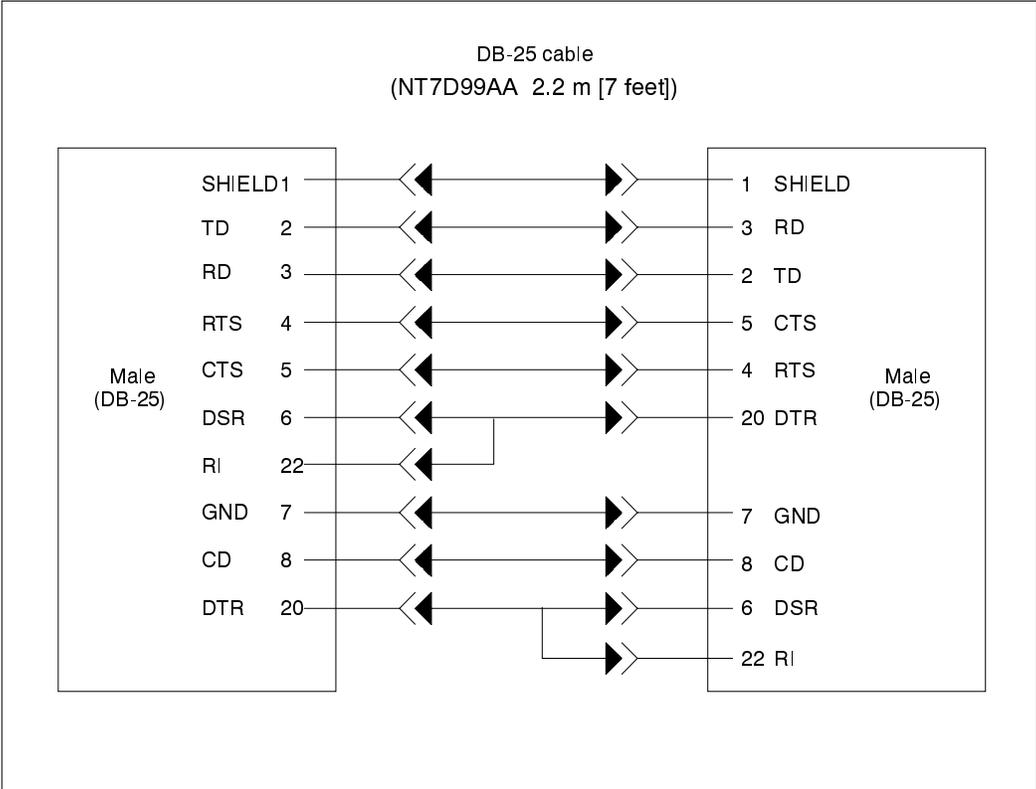
**Figure 8-2**  
**Cabling arrangement—modem connection cable NT1R03Dx**



**Figure 8-3**  
**Cabling arrangement—modem connection cable NT1R03Ex**



**Figure 8-4**  
**Cabling arrangement—modem connection cable NT7D99AA**



## Limited-distance modems

If you need more than 15 meters (50 feet) between the Meridian MAX and any peripheral device, you need to use a limited-distance modem. The limited-distance modem must be self-powered. The range depends on the modem you obtain. Limited-distance modems are recommended for use inside buildings only.

Use the following settings for a limited-distance modem:

- 9600 baud rate
- 8 bits, No-parity, 1 stop bit

## Dial-up modems

Use dial-up modems for the following functions:

- Remote diagnostics
- Dial-up supervisor
- NAC connectivity via network link and remote supervisor login

**Note:** The remote supervisor login feature is specific to the NAC option. For more information, refer to the *Meridian MAX 10 Supervisor's User Guide* (NTP 553-4001-905).

It is recommended that you use the same model of dial-up modem at each end of a dial-up connection. Ensure that each modem connected to the network is properly set up for its purpose.

## Remote diagnostic modems

The remote diagnostic service allows Nortel Networks to diagnose your Meridian MAX whenever you experience difficulties. Often the solutions can be sent back through this link directly to your system. Consult your service contract for more details about the remote diagnostic service.

For the remote diagnostic modems, the following standards must be met:

- a minimum connect speed in the range of 2400 to 115 200 baud rate
- auto-answer capability
- accessibility from the public switch telephone network

Figure 8-5 illustrates how to connect the two remote diagnostic modems to a remote workstation and a Meridian MAX running on an IPEX.

The cable between the remote workstation and the remote diagnostic modem is a straight-through DB-25 serial cable, either NT1R03Dx (male to male) or NT1R03Ex (male to female). The type of cable you use depends on the configuration you define.

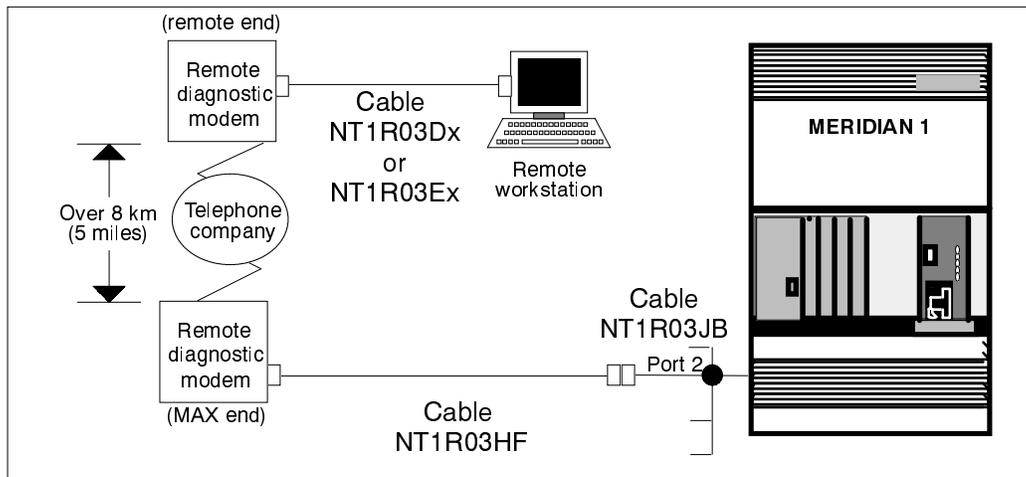
The cable between the Meridian MAX multiport cable, NT1R03JB, and the remote diagnostic modem is a DB-25 (male) to DB-25 (male) modem cable, NT1R03HF. This cable is connected to the NT1R03JB cable at Port 2.

The Meridian MAX remote diagnostic serial port is configured to communicate at serial communication rates of 115 200, 57 600, 38 400, 19 200, 9600, and 2400. The default rate is 57 600, but the rates can be cycled by sending a break signal from the remote workstation to the MAX end.

### Impact of large data transfer

It is important to remember that interrupts to the software can occur if the modem is used to transfer a large amount of data over a sustained period of time. For example, about 360 interrupts per second occur at 57 600 baud. These interrupts can reduce the Meridian MAX's performance. They can also affect the throughput of the HSL messages by employing a lower call rate.

**Figure 8-5**  
**Connecting a remote workstation with Meridian MAX remote diagnostic modems**



### Configuring the remote diagnostic modems

Before you connect the modems at either the MAX end or the remote end, you must ensure that key configuration attributes are set correctly to run with the Meridian MAX. In most cases, the default configuration settings that the manufacturer suggests are appropriate, but you might need to make changes. For a list of the key attributes and their settings, see Table 8-3.

These attributes are typically configurable by DIP switch settings, configuration menus, or by programming the modem by entering Hayes AT commands from an attached terminal. The programming terminal must be either an ASCII terminal or a PC running a terminal emulation software application. Where possible, you can use the remote workstation to configure the modems for both ends.

Before you begin configuring the modems, you must set the serial communication rate for the programming terminal to the rate at which you want the Meridian MAX to communicate with the remote diagnostic modems. Ideally, these rates should be the same at both the MAX end and the remote end.

**Note:** The default communication rate at the MAX end is 57 600 baud.

The following procedure provides guidelines for setting these configuration attributes and connecting the modems to the MAX end and the remote end.

**Procedure 8-1**

**To configure the remote diagnostic modems**

- 1 Locate the modem manufacturer's user guide that contains instructions for configuring the modem you have chosen.
- 2 Follow the instructions to reset the modem to the factory default configuration.
- 3 Use Table 8-3 to review each of the configuration attributes that Meridian MAX requires and determine if the factory default setting is the same. If the factory default is different, change it to the correct setting. Follow the manufacturer's instructions for doing this.  
**Note:** For the MAX--end modem, be sure to disable the Result codes once you have completed the other configuration attributes.
- 4 When you have completed the settings, save the modem configuration in non-volatile RAM (NVRAM), and configure the modem so that it resets to this configuration each time it is turned on.
- 5 Disconnect the modem from the programming terminal.
- 6 Attach the modem to either the MAX end or the remote end, as per the diagram in Figure 8-5.

<b>Table 8-3 Configuration attributes for the remote diagnostic modem</b>	
<b>Attribute</b>	<b>Setting</b>
Local character echo	Enabled for Command mode.
Result codes	Enabled.
Result code format	Verbal (rather than Numeric).
Serial port rate	Fixed. Set the MAX--end modem and the remote--end modem to the same baud rate. <b>Note:</b> Typically, the fixed rate is based on the serial communication rate of the programming terminal at the time the configuration is saved to NVRAM.
—continued—	

<b>Table 8-3 (continued)</b> <b>Configuration attributes for the remote diagnostic modem</b>	
Data Terminal Ready (DTR)	Override the normal functioning so that the signal is ignored.
Carrier Detect (CD)	Enabled. This means that the modem sends the CD signal when it connects with another modem and drops the CD signal on disconnect.
Data Set Ready (DSR)	Override normal functioning so that this signal is always on.
Transmit Data (TD) flow control	Hardware flow control. This means that the modem uses the clear-to-send (CTS) signal.
Receive Data (RD) hardware flow control	Enabled. This means that the modem sends data to the attached serial port (MAX end or remote end) when the request-to-send (RTS) signal is present.
Receive Data (RD) software flow control	Enabled. This means that the Meridian MAX and the remote workstation send XON and XOFF signals to the modems. Also, ensure that the modem is configured to propagate these signals to the other connected modem.
Auto-Answer	Enabled. Set it to answer on the first ring. This is required only for the MAX end.
Break handling	Configure each modem so that if it receives a break signal, it sends it to the other modem.

## Dial-up supervisor modems

With Meridian MAX, you can have a supervisor display connected using a pair of dial-up supervisor modems. This extends the allowable distances of both direct-connect and limited-distance modems. The supervisor display can be either a serial display or a serially connected PC running Meridian Terminal Emulator (MTE) software.

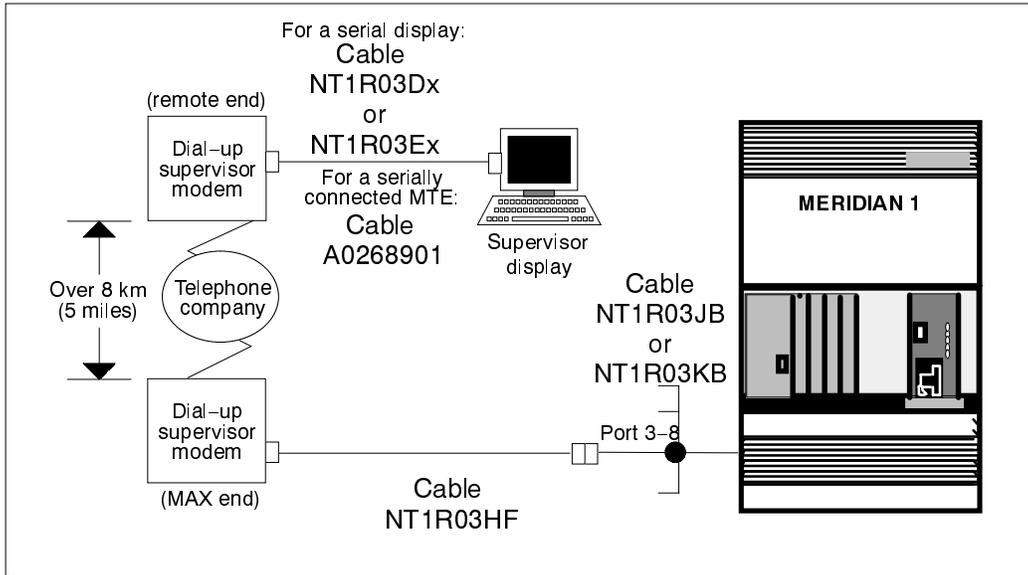
Figure 8-6 illustrates how to connect the two dial-up supervisor modems to a supervisor display and a Meridian MAX running on an IPEX.

The required cables at the remote end depend on the type of supervisor display:

- For a serial display, the cable between the supervisor display and the modem is a straight-through DB-25 serial cable, either NT1R03Dx (male to male) or NT1R03Ex (male to female). The type of cable you use depends on the configuration you define.
- For a serially connected MTE, the cable between the PC running MTE and the modem is a DB-25 to DB-9 serial cable, A0268901 (male to female).

The cable between the Meridian MAX IPEX and the dial-up supervisor modem is modem cable NT1R03HF.

**Figure 8-6**  
**Connecting a supervisor display with Meridian MAX dial-up supervisor modems**



## Configuring the dial-up supervisor modems

Before you connect the modems at either the MAX end or the remote end, you must ensure that key configuration attributes are set correctly to run with the Meridian MAX. In most cases, the default configuration settings that the manufacturer suggests are appropriate, but you might need to make changes. For a list of the key attributes and their settings, see Table 8-4.

These attributes are typically configurable by DIP switch settings, configuration menus, or by programming the modem by entering Hayes AT commands from an attached terminal. The programming terminal must be either an ASCII terminal or a PC running a terminal emulation software application.

Before you begin configuring the modems, you must set the serial communication rate for the programming terminal to 9600 baud, which is the rate at which the Meridian MAX communicates with the dial-up supervisor modem once it is physically connected.

### Procedure 8-2

#### To configure the dial-up supervisor modem

- 1 Locate the modem manufacturer's user guide that contains instructions for configuring the modem you have chosen.
- 2 Follow the instructions to reset the modem to the factory default configuration.
- 3 Use Table 8-4 to review each of the configuration attributes that Meridian MAX requires and determine if the factory default setting is the same. If the factory default is different, change it to the correct setting. Follow the manufacturer's instructions for doing this.
- 4 When you have completed the settings, save the modem configuration in non-volatile RAM (NVRAM), and configure the modem so that it resets to this configuration each time it is turned on.
- 5 Disconnect the modem from the programming terminal.
- 6 Attach the modem to either the MAX end or the remote end, as per the diagram in Figure 8-6.

<b>Table 8-4 Configuration attributes for the dial-up supervisor modem</b>	
<b>Attribute</b>	<b>Setting</b>
Local character echo	Enabled for Command mode.
Result codes	Enabled.
Result code format	Verbal (rather than Numeric).
Serial port rate	Fixed. Set the MAX-end modem and the remote-end modem to the same baud rate (2400 or 9600). <b>Note:</b> Typically, the fixed rate is based on the serial communication rate of the programming terminal at the time the configuration is saved to NVRAM.
Data Terminal Ready (DTR)	Normal.
Carrier Detect (CD)	Enabled. This means that the modem sends the CD signal when it connects with another modem and drops the CD signal on disconnect.
Data Set Ready (DSR)	Override normal functioning so that this signal is always on.
Transmit Data (TD) flow control	Hardware flow control. This means that the modem uses the clear-to-send (CTS) signal.
Receive Data (RD) hardware flow control	Enabled. This means that the modem sends data to the attached serial port (MAX end or remote end) when the request-to-send (RTS) signal is present.
Receive Data (RD) software flow control	Enabled. This means that the Meridian MAX and the remote workstation send XON and XOFF signals to the modems. Also, ensure that the modem is configured to propagate these signals to the other connected modem.
—continued—	

<b>Table 8-4 (continued)</b> <b>Configuration attributes for the dial-up supervisor modem</b>	
Auto-Answer	Enabled. Set it to answer on the first ring. This is required only for the MAX end.
Break handling	Configure each modem so that if it receives a break signal, it sends it to the other modem.

## NAC connectivity

Network Administration Center (NAC) is a computerized system that allows organizations with multiple sites (known as “nodes”) to monitor and supervise all sites from one central location. By using NAC connectivity, each Meridian MAX system can become a node on the NAC system.

NAC functions on the NAC 2 hardware platform, which is an SNN Application Module (AM). NAC 2 supports full Meridian MAX 10 functionality. Figure 8-7 shows a simplified overview of the network connectivity between a NAC 2 system and its various MAX nodes using modems.

NAC connectivity supports the following functions:

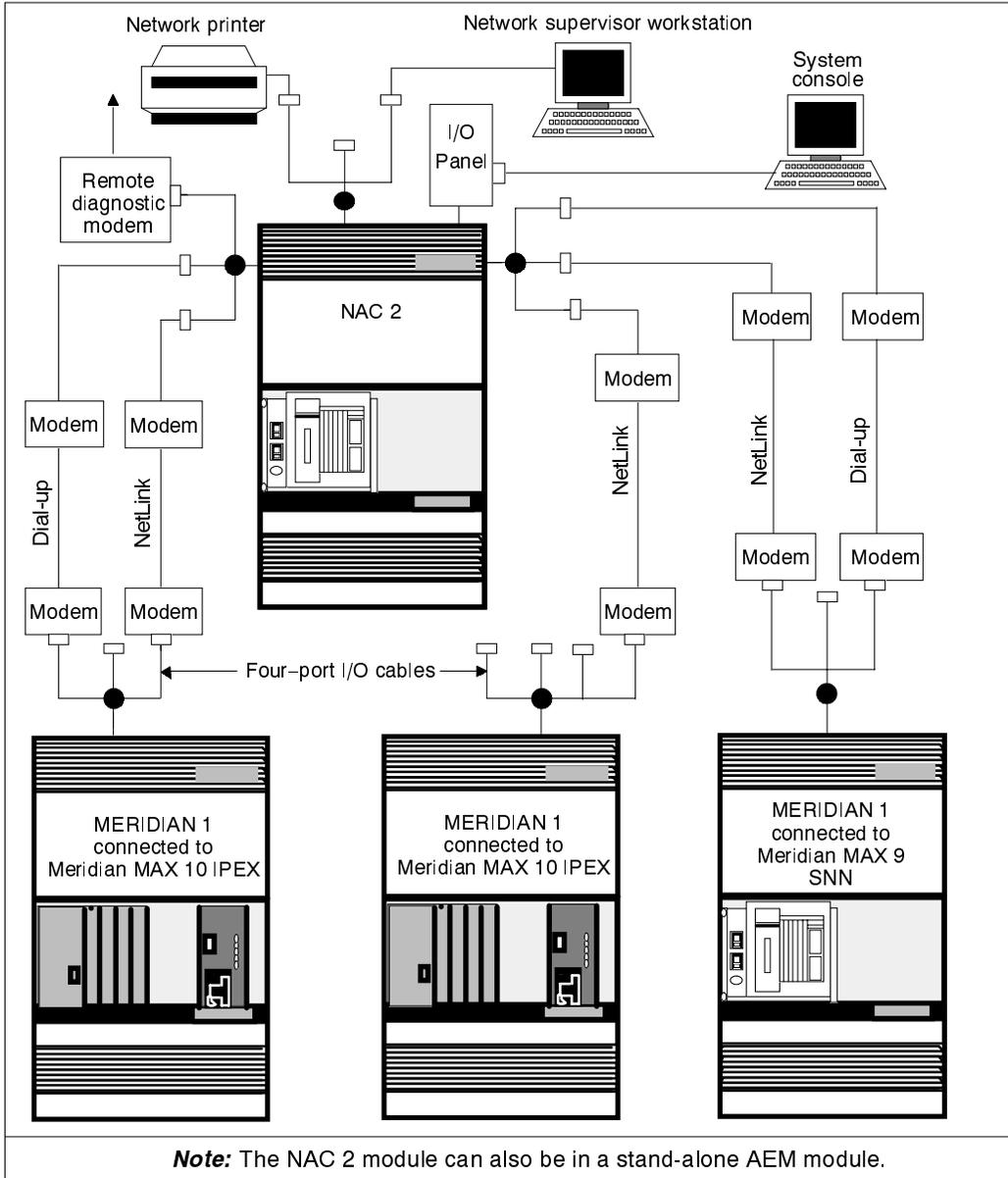
- Remote supervisor login
- Network link

Both remote supervisor login and network link require a separate modem connection. Your site’s layout may be different.

Your NAC system can connect to Meridian MAX in four ways:

- Limited distance
- Dial-up
- T1 connection
- Direct connection

**Figure 8-7**  
**NAC 2 network connectivity overview**



### **Limited distance modems for NAC connectivity**

Limited distance modems extend workstation and printer connections when used for a remote supervisor login or a network link.

#### **Remote supervisor login and network link**

For NAC 2, each remote supervisor login and network link requiring a limited distance modem needs a straight-through NT1R03Dx cable and the modem cable NT1R03HF (IPEX) at the Meridian MAX end.

#### **ATTENTION**

RS-232 cables that directly connect peripherals to the Meridian MAX must not exceed 15 meters (50 feet).

This length is based on an EIA RS-232C standard. Peripherals can be farther away if self-powered, limited-distance modems (own power supply) or dial-up modems are used.

#### **NAC 2 end**

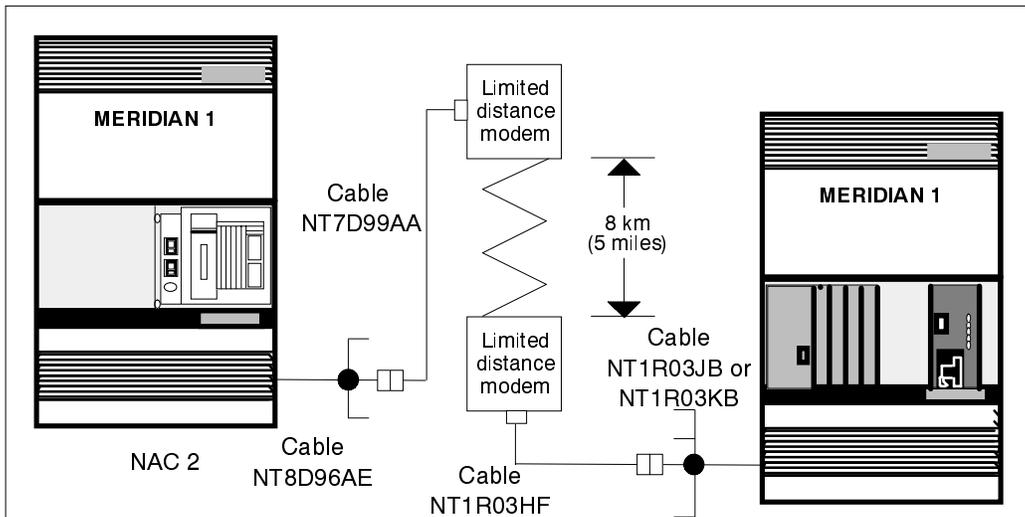
The cable between the NAC, running with a Meridian MAX IPEX, and the limited distance modem is modem cable NT7D99AA. Figure 8-8 illustrates this connection.

Refer to the “Modems” section of the “Hardware installation” chapter of the *Network Administration Center (NAC) 2.0 Installation Guide* (NTP 553-4011-110) for further information.

#### **Meridian MAX end**

The cable between the Meridian MAX, running on an IPEX module, and the limited distance modem is modem cable NT1R03HF. Figure 8-8 illustrates this connection.

**Figure 8-8**  
**Connecting the NAC 2 with a Meridian MAX node—limited distance connection**



### Dial-up modems for NAC connectivity

If the NAC system is beyond eight km (five miles) from the Meridian MAX IPEX's four-port I/O cable, then you can use the dial-up connection method. You can use dial-up modems with both the remote supervisor login and network link.

All modems for NAC connectivity to Meridian MAX are cabled in the same fashion. This is outlined as follows.

#### NAC 2 end

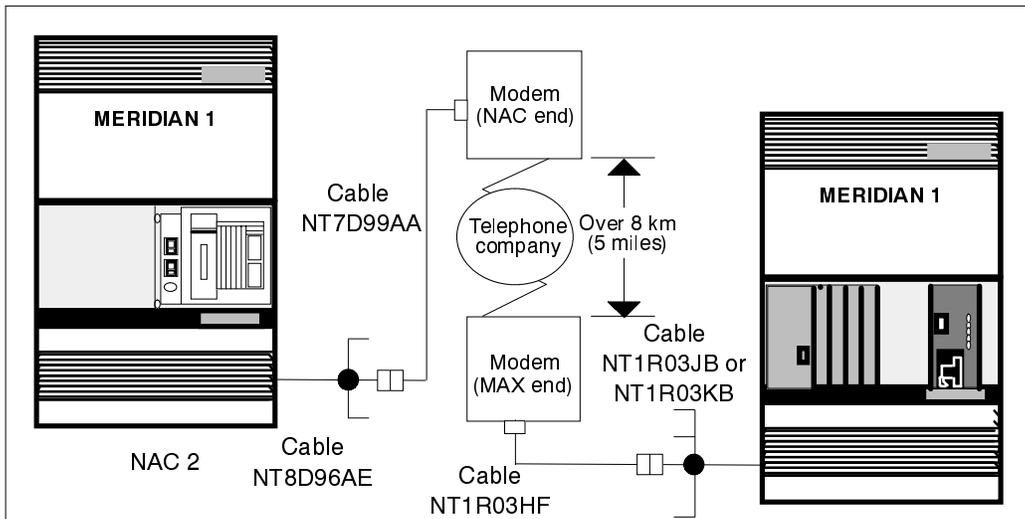
The cable between the NAC, running a Meridian MAX IPEX system, and the dial-up modem is modem cable NT7D99AA. Figure 8-9 illustrates this connection.

Refer to the "Modems" section of the "Hardware installation" chapter of *Network Administration Center (NAC) 2.0 Installation* (NTP 553-4011-110) for further information.

#### Meridian MAX end

The cable between the Meridian MAX IPEX and the dial-up modem is modem cable NT1R03HF. Figure 8-9 illustrates this connection.

**Figure 8-9**  
**Connecting the NAC 2 with a Meridian MAX node—dial-up connection (IPEX)**



**Remote supervisor login and network link**

Both the NAC and Meridian MAX ends of the remote supervisor login connection send Hayes AT modem initialization strings. Both ends of the NAC and the Meridian MAX network link send Hayes AT modem initialization strings.

## Configuring the NAC connectivity modems

You must configure the modems at both the Meridian MAX end and the NAC 2 end before connecting the two modems. The software for both modems is automatically configured by the Meridian MAX and the NAC; however, some modems have configuration or DIP switch settings that must be set correctly to run with the Meridian MAX and the NAC. In most cases, the default configuration settings that the manufacturer suggests are appropriate, but you might need to make changes. For a list of the key attributes and their settings, see Table 8-5.

These attributes are typically configurable by DIP switch settings, configuration menus, or by programming the modem by entering Hayes AT commands from an attached terminal. The terminal must be either an ASCII terminal or PC running a terminal emulation software application.

The following procedure provides guidelines for setting these configuration attributes for both remote supervisor and netlink modems, and connecting the modems at both ends.

### Procedure 8-3

#### To configure the NAC connectivity modem

- 1 Locate the modem manufacturer's user guide that contains instructions for configuring the modem you have chosen.
- 2 Follow the instructions to reset the modem to the factory default configuration.
- 3 Use Table 8-5 to review each of the configuration attributes that Meridian MAX requires and determine if the factory default setting is the same. If the factory default is different, change it to the correct setting. Follow the manufacturer's instructions for doing this.
- 4 When you have completed the settings, save the modem configuration in non-volatile RAM (NVRAM), and configure the modem so that it resets to this configuration each time it is turned on.
- 5 Disconnect the modem from the programming terminal.
- 6 Attach the modem to either the MAX end or the NAC end, as per the diagram in Figure 8-9.

<b>Table 8-5 Configuration attributes for the NAC connectivity modems</b>	
<b>Attribute</b>	<b>Setting</b>
Local character echo	Enabled for Command mode.
Result codes	Enabled.
Result code format	Verbal (rather than Numeric).
Serial port rate	Fixed. Set the MAX--end modem and the NAC--end modem to the same baud rate. For the netlink, the rate can be 2400, 9600 or 19 200 baud. For remote supervisor login, the rate can be 2400 or 9600 baud. <b>Note:</b> Typically, the fixed rate is based on the serial communication rate of the programming terminal at the time the configuration is saved to NVRAM.
Data Terminal Ready (DTR)	Override normal functioning. <b>Note:</b> The remote supervisor login on the MAX end connects to the dial--up supervisor modem, which is configured as DTR Normal.
Carrier Detect (CD)	Enabled. This means that the modem sends the CD signal when it connects with another modem and drops the CD signal on disconnect.
Data Set Ready (DSR)	Override normal functioning so that this signal is always on.
Transmit Data (TD) flow control	Hardware flow control. This means that the modem uses the clear--to--send (CTS) signal.
Receive Data (RD) hardware flow control	Enabled. This means that the modem sends data to the attached serial port (MAX end or NAC end) when the request--to--send (RTS) signal is present.
—continued—	

<b>Table 8-5 (continued)</b> <b>Configuration attributes for the NAC connectivity modems</b>	
Receive Data (RD) software flow control	Enabled. This means that the Meridian MAX and the remote workstation send XON and XOFF signals to the modems. Also, ensure that the modem is configured to propagate these signals to the other connected modem.
Auto--Answer	Enabled. Set it to answer on the first ring. This is required only for the MAX end.
Break handling	Configure each modem so that if it receives a break signal, it sends it to the other modem.
Store phone number to dial	Configure the NAC--end modem to store the phone number of the MAX--end modem. The stored phone number will be recalled and dialed with the ATDS1 (default), ATDS=1 (first alternate) or ATDS%0 (second alternate) command.

### **T1 connection for NAC connectivity**

You can connect the NAC system to a Meridian MAX node through digital lines such as a T1 digital line. During the system's installation, you must configure the network link port on the NAC and the Meridian MAX as direct connection ports. On the NAC system, you should set the network link baud rate to 9600 through the Network Definition screen.

You should set up the T1 ports (Data Module or DSU) for the network link as follows:

- asynchronous
- full duplex
- 9600 baud
- 8 data bits, no parity, 1 stop bit
- T1 network delay must be less than 0.5 second
- RS-232/C
- DCE or DTE (DCE is recommended)

If the T1 port for the network link provides a DB-25 interface, then connect the network link as follows:

- If the T1 port is configured as DCE, then use the modem cable NT1R03HF (IPEX) to connect the T1 port to the IPEX four-port I/O cable's network link port on the Meridian MAX.
- If the T1 port is configured as DTE, then use the terminal cable NT1R03Dx to connect the T1 port to the IPEX four-port I/O cable's network link port on the Meridian MAX.

Note that it is desirable to have both ports of the T1 link configured as DCE. You should not set up both ports as DTE.

If the T1 data bank does not provide a DB-25 interface, then you should install a patch panel or similar equipment to provide the required RS-232/C interface. In this case, the T1 connection is from the patch panel to the NAC or the four-port cable in the Meridian MAX systems.

Due to the wide variety of T1 equipment available, it is important that you consult with the T1 administrator before installing the network link.

### **Direct connection for NAC connectivity**

If the NAC system is within 15 meters (50 feet) of the four-port I/O cable used by a Meridian MAX nodal system, then you can use the direct connection method.

#### **NAC 2 end**

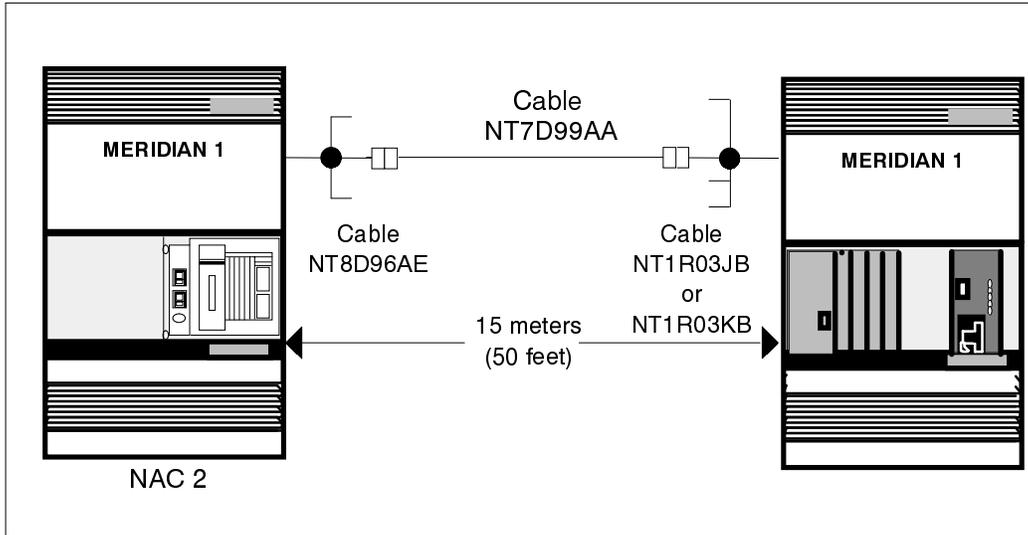
The cable between the NAC, running with a Meridian MAX IPEX system, and the four-port I/O cable port is modem cable NT7D99AA. Figure 8-10 illustrates this connection.

Refer to the "Modems" section of the "Hardware installation" chapter of the *Network Administration Center (NAC) 2 Installation Guide* (NTP 553-4011-110) for further information.

#### **Meridian MAX end**

If the Meridian MAX is connected to a NAC 2 system, one DB-25 end of the NT7D99AA cable is connected to the NT1R03JB/KB cable (IPEX) at the Meridian MAX end. Figure 8-10 illustrates this connection.

**Figure 8-10**  
**Connecting the NAC 2 to a Meridian MAX node—direct connection (IPEX)**





## Chapter 9: Workstations

### Overview

Meridian MAX supervisors use workstations to monitor and modify the call center activities. These workstations can be PCs or Video Display Terminals (VDTs).

### What's new in Meridian MAX 10

Table 9-1 lists the workstation-related features that have been modified in Meridian MAX 10.

<b>Table 9-1 Modified Meridian MAX features</b>	
<b>Modified feature</b>	<b>Description</b>
Supported workstations	Meridian MAX 10 supports the following workstations: <ul style="list-style-type: none"> <li>• MTE running on a PC connected to Meridian MAX 10 through a LAN</li> <li>• MTE running on a PC connected to Meridian MAX 10 through a serial port</li> <li>• DEC VT520, VT420, VT220, or 100% compatibles</li> </ul>
Terminal emulators	Meridian MAX 10 <i>no longer supports</i> : <ul style="list-style-type: none"> <li>• a PC directly connected to Meridian MAX running Reflection 4+ DOS Terminal Emulator</li> <li>• any third-party terminal emulators</li> </ul>
—continued—	

<b>Table 9-1 (continued) Modified Meridian MAX features</b>	
<b>Modified feature</b>	<b>Description</b>
Maximum number of displays	Meridian MAX 10 supports a maximum of 60 displays. Of these 60 displays, up to two displays can be serially connected while the remainder must be LAN-based through MTE.
Meridian NAC remote supervisor login	The Meridian NAC remote supervisor login feature is no longer supported. To view a Meridian MAX display from a remote location, supervisors must use MTE through the LAN.

## Serial port genders

Table 9-2 lists each type of workstation and the gender of its serial port.

*Note:* The maintenance console controls the installation and upgrade procedures, as well as the maintenance and administration programs. This console supports DEC VT520, VT420, VT220, or 100% compatible display terminals. If your workstation is being used as a system console, you require a female-to-female gender changer, A0351509.

<b>Table 9-2 Workstations—serial port genders</b>	
<b>Workstation type</b>	<b>Gender</b>
PC (running Meridian Terminal Emulator)	male DB-25 or DB-9
DEC VT520, VT420, VT220, or 100% compatibles	male DB-25

## PC workstations

You can install and run MTE on a PC connected by a LAN or a serial port. For information on the requirements for PC workstations, refer to the *MTE User Guide* (NTP 553 4001 906).

### Setting up the PC workstation

For information on setting up the PC workstation and installing MTE, refer to the *MTE User Guide* (NTP 553 4001 906). Once you have done this, you must configure the workstation so that it can communicate with the Meridian MAX IPEX. For detailed instructions, refer to the section “Configuring the PC or VDT workstation” in this chapter.

**Note:** Continue to this section only if you have already installed the Meridian MAX 10 software as described in the “New software installation” chapter. If not, complete the software installation and then return to this chapter.

## Video display terminal workstations

Four types of video display terminal (VDT) workstations are supported for Meridian MAX:

- DEC VT520
- DEC VT420 (North American model)
- DEC VT420 (Worldwide model)
- DEC VT220

*Note:* To differentiate between the North American and Worldwide models of the VT420, view your workstation's set-up directory. If there is a keyboard option, you are using the Worldwide model. If there is no keyboard option, you are using the North American model.

You can use other models but they must be 100% compatible with one of the models listed. Setups can differ slightly depending on the version of the workstation.

### Setting up the DEC VT520 or 100% compatible

To set up the DEC VT520 workstation, follow these steps.

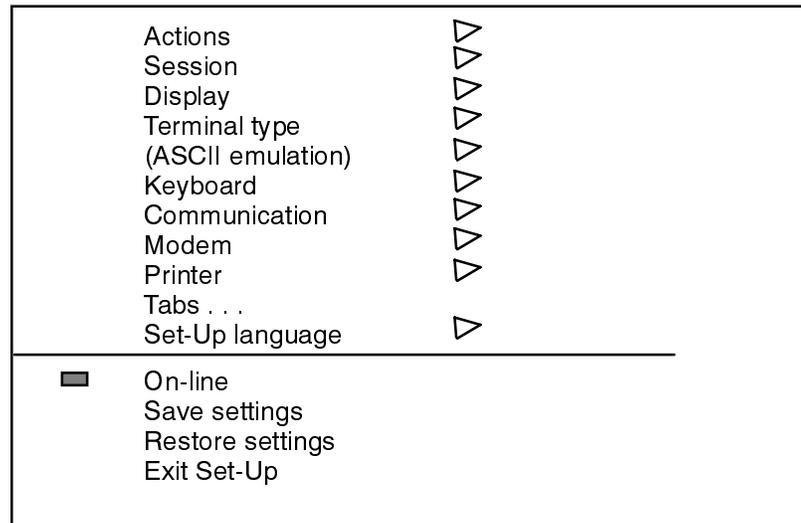
#### Procedure 9-1

#### Setting up a VT520 or 100%-compatible terminal

- 1 Refer to the vendor's manual for installation instructions.
- 2 Connect the VDT to the IPEX's four-port I/O cable using an NT1R03Ex (male to female) cable. To determine the correct port, refer to the communication port assignment sheet that you filled out in the "Hardware installation: IPEX module" chapter.
- 3 Power on the terminal.
- 4 Enter set-up mode by pressing the **{SET-UP}** key located on the top row of function keys. If no key is marked **{SET-UP}**, press the third key from the left on the top row.

The main set-up window appears (see Figure 9-1).

**Figure 9-1**  
**VT520 terminal main set-up window**



- 5** Configure the terminal to match mandatory settings in Table 9-3. If no setting is specified, select the parameter that best suits your environment.

Use the up and down arrow keys to highlight the set-up feature you want to view and, if necessary, change (for example, Actions). Use Table 9-4 to understand how to make changes to the type of feature you have highlighted.

- 6** When you have finished configuring your terminal, press {**SET-UP**} again to exit set-up mode.
- 7** To configure the terminal so that it can communicate with the Meridian MAX IPEX, continue to the section "Configuring the PC or VDT workstation."

**Note:** Continue to this section only if you have already installed the Meridian MAX 10 software as described in the "New software installation" chapter. If not, complete the software installation and then return to this section.

<b>Table 9-3 VT520 set-up values</b>		
<b>Set-up feature</b>	<b>First level</b>	<b>Mandatory setting or description</b>
Actions	Clear display	Press {RETURN} to clear the display.
	Clear communications	Press {RETURN} to clear communications.
	Reset this session	Press {RETURN} to reset this session.
	Restore factory defaults	Press {RETURN} to restore the factory default.
	Clock	Press {RETURN} to set the VT520 clock.
	Calculator	Press {RETURN} to use the VT520 calculator.
	Show character sets	Press {RETURN} to display character sets.
	Banner message . . .	Press {RETURN} to set the banner message.
Session	Select session	Session 1
	Session name . . .	Optional user text
	Pages per session . . .	04 pages maximum
	Soft char sets/session	Two each S1 and S2
	Save settings for all	
	Restore settings for all	
	Copy settings from	
	Update session	When available
Display	Lines per screen	24, 25, or 26
	Lines per page	24 lines X 04 pages
	Review previous lines	OFF
	Columns per page	80 columns, Clear on change
	Status display	Local status
—continued—		

<b>Table 9-3 (continued) VT520 set-up values</b>		
<b>Set-up feature</b>	<b>First level</b>	<b>Mandatory setting or description</b>
Display (continued)	Scrolling mode	Jump
	Screen background	Dark
	Cursor display	Block, Blink
	Cursor coupling	Set to "Vertical" and "Page"
	Cursor direction	Left to right
	Copy direction	Left to right
	Zero	Select style of zero you want to display.
	Auto Wrap	
	New line mode	
	Lock user preferences	
	Show control characters	
	CRT saver	15 minutes
	Energy saver	15 minutes
	Overscan	
	Framed windows	
Screen alignment		
Terminal type	Emulation mode	VT520 VT420 VT320 VT220
	Terminal ID to host	VT520
	VT default char set	ISO Latin-1
	PC Term character set	PC International (437)
	(7-bit NCRS characters)	
	Transmit 7-bit control	
(ASCII emulation)		
Keyboard	VT Keyboard language	Select appropriate language—North American
—continued—		

<b>Table 9-3 (continued) VT520 set-up values</b>		
<b>Set-up feature</b>	<b>First level</b>	<b>Mandatory setting or description</b>
Keyboard (continued)	(PC Keyboard language)	
	Define key . . .	Use Define Key Editor screen to set the following: F1=Hold Ignore Alt F2=Print           , < and .> Keys F3=Setup           <> Key F4=Session        `~ Key F5=Break
	Save key definitions	
	Recall key definitions	
	Lock key definitions	
	Caps lock function	Caps lock
	Keyclick volume	High
	Warning bell volume	High
	Margin bell volume	OFF
	Keyboard encoding	Character (ASCII)
	Auto Repeat	Fast (30/sec)
	Data processing keys	
	Application cursor keys	
	Application keypad mode	
	(Map PC keyboard to VT)	
	Ignore missing keyboard	
Communication	Port select . . .	See Figure 9-2.
	Word size	8 bits
	Parity	None
	Stop bits	1 bit
	Transmit speed	9600 baud
	Receive speed	Transmit speed
—continued—		

<b>Table 9-3 (continued) VT520 set-up values</b>		
<b>Set-up feature</b>	<b>First level</b>	<b>Mandatory setting or description</b>
Communication (continued)	Transmit flow control	XON/XOFF
	Receive flow control	XON/XOFF or XPC
	Flow control threshold	Low (64)
	Transmit rate limit	150 cps
	Fkey rate limit	150 cps
	Ignore Null character	ON
	Local echo	
	Half duplex	
	Auto answerback	OFF
	Answerback message . . .	Enter the answerback message.
	Answerback concealed	
Modem	Enable modem control	
	(Disconnect delay)	
	(Modem high speed)	
	(Modem low speed)	
Printer	Port select . . .	See Figure 9-2.
	Print mode	Normal
	Printer type	DEC ANSI
	DEC/ISO char sets	National only
	(PC character sets)	
	Print extent	Full page
	Print terminator	None
	Serial print speed	4800 baud
2-way communication	OFF	
—continued—		

<b>Table 9-3 (continued) VT520 set-up values</b>		
<b>Set-up feature</b>	<b>First level</b>	<b>Mandatory setting or description</b>
Printer (continued)	Transmit flow control	XON/XOFF
	Receive flow control	XON/XOFF
	Word size	8 bits
	Parity	None
	Stop bits	1 bit
Tabs	Tabs Set-Up Screen	
Set-Up language		User dependent
On-line		ON
Save settings		When settings are complete, push <Enter> to save.
Restore settings		
Exit Set-Up		

**Figure 9-2  
Port selection for VT520**

<b>S1</b>	<b>S2</b>	<b>S3</b>	<b>S4</b>
<b>Comm</b>	<b>Comm</b>	<b>Comm</b>	<b>Comm</b>
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/> Off	<input checked="" type="radio"/> Off
<input checked="" type="radio"/> com1	<input type="radio"/>		
<input type="radio"/>	<input checked="" type="radio"/> com2		
<input type="radio"/>	<input type="radio"/>		
<b>Print</b>	<b>Print</b>	<b>Print</b>	<b>Print</b>
<input checked="" type="radio"/> none			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Table 9-4**  
**Navigating the set-up windows**

if	then
a solid triangle appears beside the set-up feature	use the right arrow key to automatically display the pop-up window of associated settings. See Figure 9-3 for an example.
a box appears beside the set-up feature	press {RETURN} to toggle the setting for the selected feature on or off. A diagonal line appears in the box when the setting is on.
three dots (. . .) appear beside the set-up feature	press {RETURN} to display the associated pop-up window. When all fields have been completed, move the cursor to [OK] or [Cancel], and press {RETURN} again to activate your choice.

**Figure 9-3**  
**VT520 terminal - sample feature pop-up window (Actions feature)**

<ul style="list-style-type: none"> <li>Actions</li> <li>Session</li> <li>Display</li> <li>Terminal type (ASCII emulation)</li> <li>Keyboard</li> <li>Communication</li> <li>Modem</li> <li>Printer</li> <li>Tabs . . .</li> <li>Set-Up language</li> </ul>	<ul style="list-style-type: none"> <li>▼</li> </ul>	<ul style="list-style-type: none"> <li>Clear display</li> <li>Clear communications</li> <li>Reset this session</li> <li>Restore factory defaults</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Clock</li> <li>Calculator</li> <li>Show character sets</li> <li>Banner message . . .</li> </ul>
<ul style="list-style-type: none"> <li>■ On-line</li> <li>Save settings</li> <li>Restore settings</li> <li>Exit Set-Up</li> </ul>		

**Note:** Options shown in parentheses are dimmed on the screen.

## Setting up the DEC VT420 or 100% compatible (North American model)

Follow Procedure 9-2 to set up the DEC VT420 (North American model) workstation.

### Procedure 9-2

#### To set up a VT420 or 100%-compatible terminal (North American model)

- 1 Refer to the vendor's manual for installation instructions.
- 2 Connect the VDT to the IPEX's four-port I/O cable using an NT1R03Ex (male to female) cable. To determine the correct port, refer to the communication port assignment sheet you filled out in the "Hardware installation: IPEX module" chapter.
- 3 Power on the terminal and press the **{SET-UP}** key.  
The VDT manual contains instructions on setting up the workstation's options.
- 4 Follow the settings in Figure 9-4 to configure a DEC VT420 North American model.  
Each directory shown in these figures has its own screen and displays the correct setting for each field. If any of the fields shown differ from those on your screen, cursor to the field and press **{RETURN}** until the correct information appears.
- 5 To move to the next set-up screen, cursor to *To Next Set-up* and press **{RETURN}**.
- 6 Move the cursor to *To Directory* and press **{RETURN}**.
- 7 Move the cursor to *Save* and press **{RETURN}**.
- 8 To exit after saving the settings, press the **{SET-UP}** key.
- 9 To configure the terminal so that it can communicate with the Meridian MAX IPEX, continue to the section "Configuring the PC or VDT workstation."

**Note:** Continue to this section only if you have already installed the Meridian MAX 10 software as described in the "New software installation" chapter. If not, complete the software installation and then return to this section.

**Figure 9-4**  
**DEC VT420 workstation (North American model) Version 1.3 or greater set-up**

<b>Set-Up Directory</b>										
Global	Display	General	Comm	Printer	Keyboard	Tab				
Clear Display	Clear Comm	Reset Session	Recall	Save						
Default	Screen Align									
Enable Sessions	Disable Sessions	Exit								
<b>Global Directory</b>										
To Next Set-Up	To Directory									
On Line	S1 = Comm1	CRT Saver	Printer Shared							
70 Hz										
<b>Display Set-Up</b>										
To Next Set-Up	To Directory	80 Columns	Interpret Controls							
No Auto Wrap	Jump Scroll	Dark Screen								
No Cursor	Block Cursor Style	No Status Display								
Cursor Blink	6X24 pages	24 Lines/Screen								
Vertical Coupling	Page Coupling	No Auto Resize Screen								
<b>General Set-Up</b>										
To Next Set-Up	To Directory	VT400 Mode, 8 Bit Controls	VT420 ID							
User Defined Keys Unlocked	User Features Unlocked									
Numeric Keypad	Normal Cursor Keys	No New Line								
UPSS ISO Latin-1	When Available Update									
<b>Communications Set-Up</b>										
To Next Set-Up	To Directory	Transmit = 9600	Receive = Transmit							
XOFF at 128	8 Bits, No Parity	1 Stop Bit	No Local Echo							
Data Leads Only	Limited Transmit									
No Auto Answerback	Answerback=	Not Concealed								
<b>Keyboard Set-Up</b>										
To Next Set-Up	To Directory	Caps Lock								
No Auto Repeat	Keyclick High	Margin Bell Off	Warning Bell High							
Character Mode	<X> Delete	Local Compose	Ignore Alt							
F1 = Hold	F2 = Print	F3 = Set-Up	F4 = Session	F5 = Break						
, < and . > Keys	<> Key	! ~ Key								

## Setting up the DEC VT420 or 100% compatible (Worldwide model)

Follow Procedure 9-3 to set up the DEC VT420 (Worldwide model) workstation.

### Procedure 9-3

#### To set up a VT420 or 100%-compatible terminal (Worldwide model)

- 1 Refer to the vendor's manual for installation instructions.
- 2 Connect the VDT to the IPEX's four-port I/O cable using an NT1R03Ex (male to female) cable. To determine the correct port, refer to the communication port assignment sheet that you filled out in the "Hardware installation: IPEX module" chapter.
- 3 Power on the terminal and press the **{SET-UP}** key.  
The VDT manual contains instructions on setting up the workstation's options.
- 4 Follow the settings in Figure 9-5 to configure a DEC VT420 Worldwide model.  
Each directory shown in these figures has its own screen and displays the correct setting for each field. If any of the fields shown differ from those on your screen, cursor to the field and press **{RETURN}** until the correct information appears.
- 5 To move to the next set-up screen, cursor to *To Next Set-up* and press **{RETURN}**.
- 6 Move the cursor to *To Directory* and press **{RETURN}**.
- 7 Move the cursor to *Save* and press **{RETURN}**.
- 8 To exit after saving the settings, press the **{SET-UP}** key.
- 9 To configure the terminal so that it can communicate with the Meridian MAX IPEX, continue to the section "Configuring the PC or VDT workstation."

**Note:** Continue to this section only if you have already installed the Meridian MAX 10 software as described in the "New software installation" chapter. If not, complete the software installation and then return to this section.

**Figure 9-5**  
**DEC VT420 workstation (Worldwide model) set-up**

<b>Set-Up Directory</b>										
Global	Display	General	Comm	Printer	Keyboard	Tab				
Clear Display	Clear Comm	Reset Session	Recall	Save						
Set-Up = English*	North American Keyboard**	Default								
Enable Sessions	Disable Sessions	Exit	Screen Align							
<b>Global Set-Up</b>										
To Next Set-Up	To Directory									
On Line	S1 = Comm1	CRT Saver								
Comm1 = RS-232***	70 Hz	Printer Shared								
<b>Display Set-Up</b>										
To Next Set-Up	To Directory	80 Columns	Interpret Controls							
No Auto Wrap	Jump Scroll	Dark Screen								
No Cursor	Block Cursor Style	No Status Display								
Cursor Blink	6X24 pages	24 Lines/Screen								
Vertical Coupling	Page Coupling	No Auto Resize Screen								
<b>General Set-Up</b>										
To Next Set-Up	To Directory	VT400 Mode, 8 Bit Controls								
User Defined Keys Unlocked	User Features Unlocked	8-bit Characters								
Numeric Keypad	Normal Cursor Keys	No New Line								
UPSS ISO Latin-1	VT420 ID									
When Available Update										
<b>Communications Set-Up</b>										
To Next Set-Up	To Directory	Transmit = 9600	Receive = Transmit							
XOFF at 128	8 Bits, No Parity	1 Stop Bit	No Local Echo							
Data Leads Only	Disconnect, 2 s Delay	Limited Transmit								
No Auto Answerback	Answerback=	Not Concealed								
Modem High Speed = Ignore	Modem Low Speed = ignore									
<b>Keyboard Set-Up</b>										
To Next Set-Up	To Directory	Typewriter Keys	Caps Lock							
No Auto Repeat	Keyclick Off	Margin Bell Off	Warning Bell High							
Character Mode	<X> Delete	Local Compose	Ignore Alt							
F1 = Hold	F2 = Print	F3 = Set-Up	F4 = Session	F5 = Break						
, < and . > Keys	<> Key	' ~ Key								

**Note:** \* This setting specifies the DEC set-up language and does not affect the Meridian MAX screens.  
 \*\* Change this setting to match the keyboard language you are using.  
 \*\*\* This setting depends on the port you are using on the back of the terminal. Refer to your terminal guide for more information.

## Setting up the DEC VT220 or 100% compatible

Follow Procedure 9-4 to set up the DEC VT220 workstation.

### Procedure 9-4

#### To set up a VT220 or 100%-compatible terminal

- 1 Refer to the vendor's manual for installation instructions.
- 2 Connect the VDT to the IPEX's four-port I/O cable using an NT1R03Ex (male to female) cable. To determine the correct port, refer to the communication port assignment sheet that you filled out in the "Hardware installation: IPEX module" chapter.
- 3 Power on the terminal and press the **{SET-UP}** key.  
The VDT manual contains instructions on setting up the workstation's options.
- 4 Follow the settings in Figure 9-6 to configure a DEC VT220 VDT.  
Each directory shown in Figure 9-6 has its own screen and displays the correct setting for each field. If any of the fields shown differ from those on your screen, cursor to the field and press **{RETURN}** until the correct information appears.
- 5 To move to the next set-up screen, cursor to *To Next Set-up* and press **{RETURN}**.
- 6 Move the cursor to *To Directory* and press **{RETURN}**.
- 7 Move the cursor to *Save* and press **{RETURN}**.
- 8 To exit after saving the settings, press the **{SET-UP}** key.
- 9 To configure the terminal so that it can communicate with the Meridian MAX IPEX, continue to the section "Configuring the PC or VDT workstation."

**Note:** Continue to this section only if you have already installed the Meridian MAX 10 software as described in the "New software installation" chapter. If not, complete the software installation and then return to this section.

**Figure 9-6**  
**DEC VT220 workstation set-up**

<b>Set-up Directory</b>									
Display	General	Comm	Printer	Keyboard	Tab				
On Line	Clear Display	Clear Comm	Reset Terminal	Recall	Save				
Set-Up English	North American Keyboard	Default	Exit						
<b>Display Setup</b>									
To Next Set-Up	To Directory	80 Columns	Interpret Controls						
No Auto Wrap	Jump Scroll	Light Text, Dark Screen							
No Cursor	Block Cursor Style								
<b>General Setup</b>									
To Next Set-Up	To Directory	VT200 Mode, 8 Bit Controls							
User Defined Keys Unlocked	User Features Unlocked	Multinational							
Numeric Keypad	Normal Cursor Keys	No New Line							
<b>Communications Setup</b>									
To Next Set-Up	To Directory	Transmit=9600	Receive=Transmit						
XOFF at 128	8 Bits, No Parity	1 Stop Bit	Local Echo						
EIA Port, Data Leads Only	Disconnect, 2 s Delay	Limited Transmit							
<b>Keyboard Setup</b>									
To Next Set-Up	To Directory	Typewriter Keys	Caps Lock						
No Auto Repeat	No Keyclick	No Margin Bell	Warning Bell	Break					
No Auto Answerback	Answerback=	Not Concealed							

## Configuring the PC or VDT workstation

You must configure your PC or VDT workstation so that it can communicate with the Meridian MAX IPEX module. Procedure 9-5 provides detailed steps.

Before you begin, you must have the Meridian MAX 10 software installed, as described in the “New software installation” chapter. If not, complete the software installation and then return to this section.

Additionally, you must have your PC or VDT powered on and set up correctly as a supervisor workstation, as described in one of the following procedures in this chapter:

- Setting up the PC workstation
- Setting up the DEC VT520 or 100% compatible
- Setting up the DEC VT420 or 100% compatible (Worldwide model)
- Setting up the DEC VT420 or 100% compatible (North American model)
- Setting up the DEC VT220 or 100% compatible

### Procedure 9-5

#### To configure the PC or VDT workstation

- 1 From either your PC or VDT workstation, press **{CONTROL}{T}**.

If you are not using a supervisor dial-up, go to Step 3.

If you are using a supervisor dial-up, the following prompt appears:

```
REMINDER: If you have invoked this feature to change
your terminal configuration during an active
supervisor dial-up session, your new selection will
NOT take effect. To change the terminal configuration
during an active dial-up session, you must log off
and dial-up again to select the new configuration.
```

If you are dialing in for the first time, however, you may freely select your terminal configuration now and it will be properly activated for this dial-up session.

Please press <ENTER> to continue...

- 2 Press **{RETURN}**.

**3** The system displays the following information:

```
The terminal type for this port is unknown.
Please choose a terminal type from the following list:
1.  DEC vt220 monochrome and compatibles
2.  DEC vt420 monochrome and compatibles
3.  PC running MTE 9 or above
```

```
Selection -->
```

**4** Specify the type of terminal you are using. If you are using a VT220 workstation, type **1**. If you are using a VT520 or VT420 workstation, type **2**. If you are using a PC running MTE 9 or above, type **3**.

The system displays a menu listing the keyboard types:

Select your keyboard type from the following list:

```
>>> 1.  North American Keyboard
      2.  United Kingdom Keyboard
      3.  Flemish Keyboard
      4.  Canadian French Keyboard
      5.  Danish Keyboard
      6.  Finnish Keyboard
      7.  German Keyboard
      8.  Dutch Keyboard
      9.  Italian Keyboard
     10.  Swiss French Keyboard
     11.  Swiss German Keyboard
     12.  Swedish Keyboard
     13.  Norwegian Keyboard
     14.  French/Belgian Keyboard
     15.  Spanish Keyboard
     16.  Portuguese Keyboard
```

```
Selection -->
```

**5** Type the number that corresponds to your keyboard type, followed by **{RETURN}**.

The Supervisor Login screen appears. The supervisor workstation is now ready for use.

**Note 1:** If you want to reconfigure your workstation at any time while Meridian MAX is running, press **{CONTROL}{T}** to display the configuration prompt. If you do not make changes, the system returns you to the Meridian MAX feature you were using before you pressed **{CONTROL}{T}**. If you do change your workstation

configuration, the system logs you out and displays the Supervisor Login screen.

**Note 2:** If you want to further define the configuration of a PC running MTE 10 using Windows, refer to the *MTE User Guide* (NTP 553--4001--906) to access the session option screen. You can also use the MTE 10 online Help for instructions on setting your session options.

## Changing the default language

The default language of a Meridian MAX supervisor session is English. To change the default language from English to the other installed language on your system, follow the steps described in Procedure 9-6. This procedure can also be used to change your default language back to English.

### Procedure 9-6 To change the default language

- 1 Log on to the Meridian MAX as Supervisor 0 (zero) in Precutover mode, Supervisor 11 or 22 in Training mode, or any supervisor with access to the Parameter Administration feature in Product mode.
- 2 Select the Parameter Administration feature from the main menu.
- 3 Select the Miscellaneous Options feature from the Parameter Administration menu.
- 4 Select the *Default Language* field on the Miscellaneous Options screen.
- 5 Press **{PF2}** to display the choices for the *Default Language* field. Use the up and down cursor keys to select the language you want as your default language, and press **{RETURN}**. This language appears in the *Default Language* field.
- 6 Press **{PF1}** to display the commands. Select the Save changes and exit command and press **{RETURN}**. The system saves your changes and returns you to the main menu.
- 7 Return to the main menu and log off of the Meridian MAX. The next time you log on to the system, the system uses the new default language you chose.

---

## Chapter 10: Printers

---

### What's new in Meridian MAX 10

Several changes have been made to the way that Meridian MAX handles printers. These changes include the following:

- Meridian MAX 10 supports only local printing. Local printing allows the Meridian MAX to route print jobs to an MTE session. The print job is then sent to a specific printer defined on the PC. These printers can be attached to any port on the PC, such as serial (COM), parallel, USB, IEEE-1394, or a network printer accessible from the PC. For more information on local printing, refer to the *Meridian MAX 10 Supervisor's User Guide* (NTP 553-4001-905), "Handling local printing" chapter, and to the *MTE 10 User Guide* (NTP 553-4001-906).
- Unlike previous versions, Meridian MAX 10 does not support printers that are connected through a serial port.
- The "MTE Generic Printer," "Workforce Mgmt Tool," and "Data Stream Reporting" are the only three options that you can select as output devices in Meridian MAX. It is no longer possible to select a specific printer model.

10-2 Printers

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553-4001-111 Standard 2.0 January 2001

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## Chapter 11: Operating modes

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Meridian MAX has three modes of operation: Training, Precutover, and Product. (Upgraded systems do not come with the Training mode.)

Training mode is the first mode entered when a new system is installed. This operating mode allows users to train on the system.

Precutover mode is the second mode you can use to set up your system. It is used to configure the system in preparation for production.

Product mode is the actual running Meridian MAX system.

## Training mode

The Training mode allows users to be trained in a simulated Meridian MAX call-processing environment.

Predefined Meridian MAX supervisor displays are accessible in the Training mode as soon as the system starts up. Supervisor displays remain active until the system is shut down or the process to switch to Precutover mode is initiated.

Once training is completed, Meridian MAX can be converted into the Precutover mode. For more information, refer to the “Switching from Training mode to Precutover mode” section.

### Switching from Training mode to Precutover mode

When the training is completed, you can switch to Precutover mode to finish setting up the Meridian MAX.

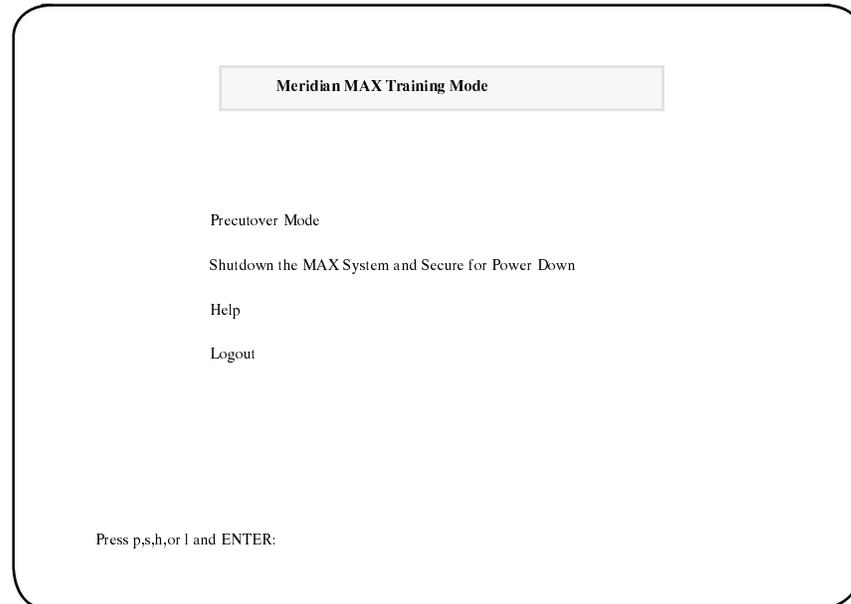
Follow Procedure 11-1 to switch from Training mode to Precutover mode.

#### Procedure 11-1

##### To switch from Training mode to Precutover mode

- 1 At the *Login* prompt on the maintenance terminal, type **precut** and press **{RETURN}**.
- 2 At the *Password* prompt, type the logon password supplied by your Nortel Networks distributor.
- 3 Wait for the Meridian MAX Training Mode menu to appear.

**Figure 11-1**  
**Meridian MAX Training Mode menu**



- 4** Type **p** to select “*Precutover Mode*” from the menu.

The system displays the following message:

```
The MAX system is currently running in XXXXX-ID mode. MAX
must be in the same mode as the Meridian 1.
```

**Note:** (The “xxxxx” is the current mode of your Meridian MAX, either Agent or Position.)

```
Please verify that the Meridian 1 is in the same mode as
MAX.
```

```
Is the Meridian 1 in XXXXX-ID mode? [y/n]:
```

**Note:** (The “xxxxx” is the current mode of your Meridian MAX.)

- 5** If your Meridian MAX and the Meridian 1 are not in the same mode, type **n** to quit and press **{RETURN}**.

The main menu appears.

If you have verified that your Meridian MAX and the Meridian 1 are running in the same mode, type **y** and press **{RETURN}**.

## 11-4 Operating modes

---

The system continues:

**WARNING:** Going to Precutover mode is an irreversible process. You can only return to Training mode by reloading the Meridian MAX software from the original tape. (All supervisor activity should be halted before doing this transition.)

Press 'y' and ENTER to confirm transition into Precutover mode.

Just press ENTER to remain in Training mode.

**6** Type **y** and press **{RETURN}**.

The system continues:

Meridian MAX terminating...

\*\*\*> Creating the system database...(TIME)

System database created.

\*\*\*> Loading static data files into System database...

Loading data files for Precutover mode...

Data files loaded

\*\*\*> Historical database update starts.

\*\*\*> Creating the MAX 10 Historical database for Precutover mode.

Creating a new database (TIME)

\*\*\*> End of Historical database update.

**7** Wait for the system to display the Meridian MAX Hardware and System Parameters screen. Make any necessary changes to your port configurations.

Refer to the "Meridian MAX system configuration" chapter for instructions on how to configure the system's ports.

**8** When you have completed the port configuration, the system continues:

\*\*\*> Creating User Language database (TIME)

User Language database created.

The system will be rebooted now...

**9** Wait as the system reboots and displays a list of messages. Your system messages may differ.

Broadcast message from root (ttyS0) Thu Jul 27 12:05:51  
2000...

The system is going down for reboot NOW !!  
INIT: Switching to runlevel: 6  
Stopping keytable [ OK ]  
Shutting down X Font Server: [ OK ]  
Stopping INET services: [ OK ]  
Stopping at daemon: [ OK ]  
Shutting down lpd: [ OK ]  
Saving random seed [ OK ]  
Shutting down interface eth0 [ OK ]  
Shutting down kernel logger: [ OK ]  
Shutting down system logger: [ OK ]  
Starting killall [ OK ]  
Sending all processes the TERM signal...  
Sending all procmd: recovery thread got woken up ...  
esses the KILL smd: recovery thread finished ...  
ignal.. mdrecoveryd(6) flushing signals.

Turning off swap  
Unmounting file systems  
Unmounting proc file system  
Please stand by while rebooting the system...  
stopping all md devices.  
Restarting system.

LILO  
Meridian MAX IPEX  
boot:  
Loading MAX.....  
Linux version 2.2.14-5.0 (root@porky.devel.redhat.com) (gcc  
version egcs-2.91.60  
Detected 332603533 Hz processor.  
Console: mono \*MDA 80x25  
Calibrating delay loop... 331.78 BogoMIPS  
Memory: 257680k/262144k available (1060k kernel code, 416k  
reserved, 2924k data)  
Dentry hash table entries: 262144 (order 9, 2048k)  
Buffer cache hash table entries: 262144 (order 8, 1024k)  
Page cache hash table entries: 65536 (order 6, 256k)  
VFS: Diskquotas version dquot\_6.4.0 initialized  
CPU: Intel Mobile Pentium II stepping 0a  
Enabling extended fast FPU save and restore...done.

## 11-6 Operating modes

---

```
Checking 386/387 coupling... OK, FPU using exception 16 error
reporting.
Checking 'hlt' instruction... OK.
POSIX conformance testing by UNIFIX
mtrr: v1.35a (19990819) Richard Gooch (rgooch@atnf.csiro.au)
PCI: PCI BIOS revision 2.10 entry at 0xfd9c5
PCI: Using configuration type 1
PCI: Probing PCI hardware
Linux NET4.0 for Linux 2.2
Based upon Swansea University Computer Society NET3.039
NET4: Unix domain sockets 1.0 for Linux NET4.0.
NET4: Linux TCP/IP 1.0 for NET4.0
IP Protocols: ICMP, UDP, TCP, IGMP
TCP: Hash tables configured (ehash 262144 bhash 65536)
Initializing RT netlink socket
Starting kswapd v 1.5
Detected PS/2 Mouse Port.
Serial driver version 4.27 with<4>keyboard: Too many NACKs --
noisy kbd cable?
keyboard: Too many NACKs -- noisy kbd cable?
MANY_PORTS MULTIPORT SHARE_IRQ enabled
ttyS00 at 0x03f8 (irq = 4) is a 16550A
ttyS01 at 0x02f8 (irq = 3) is a 16550A
pty: 256 Unix98 ptys configured
apm: BIOS version 1.2 Flags 0x03 (Driver version 1.9)
Real Time Clock Driver v1.09
RAM disk driver initialized: 16 RAM disks of 4096K size
PIIX4: IDE controller on PCI bus 00 dev 39
PIIX4: not 100% native mode: will probe irqs later
    ide0: BM-DMA at 0xfc90-0xfc97, BIOS settings: hda:pio,
hdb:pio
    ide1: BM-DMA at 0xfc98-0xfc9f, BIOS settings: hdc:DMA,
hdd:pio
hda: SanDisk SDCFB-32, ATA DISK drive
hdc: ST313021A, ATA DISK drive
hdd: Seagate STT20000A, ATAPI TAPE drive
ide0 at 0x1f0-0x1f7,0x3f6 on irq 14
ide1 at 0x170-0x177,0x376 on irq 15
hda: SanDisk SDCFB-32, 30MB w/1kB Cache, CHS=490/4/32
hdc: ST313021A, 12419MB w/512kB Cache, CHS=25232/16/63
floppy0: no floppy controllers found
md driver 0.90.0 MAX_MD_DEVS=256, MAX_REAL=12
raid5: measuring checksumming speed
raid5: MMX detected, trying high-speed MMX checksum routines
    pII_mmx    :    773.430 MB/sec
```

```
p5_mmx      :   822.198 MB/sec
8regs       :   572.262 MB/sec
32regs      :   325.755 MB/sec
using fastest function: p5_mmx (822.198 MB/sec)
scsi : 0 hosts.
scsi : detected total.
md.c: sizeof(mdp_super_t) = 4096
Partition check:
  hda: hda1
  hdc: hdc1 hdc2 < hdc5 hdc6 hdc7 hdc8 >
autodetecting RAID arrays
autorun ...
... autorun DONE.
VFS: Mounted root (ext2 filesystem) readonly.
Freeing unused kernel memory: 64k freed
INIT: version 2.78 booting
                Welcome to Red Hat Linux
                Press 'I' to enter interactive startup.
Mounting proc filesystem [ OK ]
Configuring kernel parameters [ OK ]
Setting clock (utc): Thu Jul 27 12:07:45 GMT 2000 [ OK ]
Activating swap partitions [ OK ]
Setting hostname MAX00 [ OK ]
Checking root filesystem
/dev/hdc6: clean, 6451/384768 files, 20080/768088 blocks
[/sbin/fsck.ext2 -- /] fsck.ext2 -a /dev/hdc6
[ OK ]
Remounting root filesystem in read-write mode [ OK ]
Finding module dependencies [ OK ]
Checking filesystems
/dev/hdc1: clean, 25/25792 files, 5707/102784 blocks
/dev/hdc5: clean, 7795/897600 files, 60960/1792090 blocks
/dev/hdc8: clean, 104/280512 files, 9597/560440 blocks
Checking all file systems.
[/sbin/fsck.ext2 -- /boot] fsck.ext2 -a /dev/hdc1
[/sbin/fsck.ext2 -- /usr] fsck.ext2 -a /dev/hdc5
[/sbin/fsck.ext2 -- /var] fsck.ext2 -a /dev/hdc8
[ OK ]
Mounting local filesystems [ OK ]
Enabling swap space [ OK ]
INIT: Entering runlevel: 3
Entering non-interactive startup
Setting network parameters [ OK ]
Bringing up interface lo [ OK ]
Bringing up interface eth0 [ OK ]
```

## 11-8 Operating modes

---

```
Initializing random number generator [ OK ]
Mounting other filesystems [ OK ]
Starting system logger: [ OK ]
Starting kernel logger: [ OK ]
Starting at daemon: [ OK ]
Starting INET services: [ OK ]
Starting lpd: [ OK ]
Starting keytable [ OK ]
Starting X Font Server: [ OK ]
```

**\*\* Meridian MAX Startup \*\***

```
Initializing, please wait .....
Loading system language strings ... [ OK ]
Loading help strings ... [ OK ]
Starting logging facility ... [ OK ]
Loading real-time data for Precutover mode ... [ OK ]
Starting MAPA Controller ... [ OK ]
Meridian MAX release 10.31
```

Meridian MAX Precut Mode

Please login as 'precut' for more details.

**Note:** The release number for Meridian MAX (shown above as 10.31) should reflect the version you are running.

- 10** Go to the "Precutover mode" section.

## Precutover mode

Use Precutover mode to finalize the configuration of the Meridian MAX before you switch to Product mode and make it a “live” system.

Before switching from Precutover mode to Product mode, ensure that the following are ready:

- 1 The High-Speed Link is connected between the Meridian MAX and the Meridian 1.
- 2 The Meridian 1 is configured for the High-Speed Link. Refer to the “Meridian 1 circuit card configuration” chapter.
- 3 Supervisors and agents are trained and ready to use the Meridian MAX.
- 4 All workstations are logged off.

To switch from Precutover mode to Product mode, go to the “Switching from Precutover mode to Product mode.”

## Switching from Precutover mode to Product mode

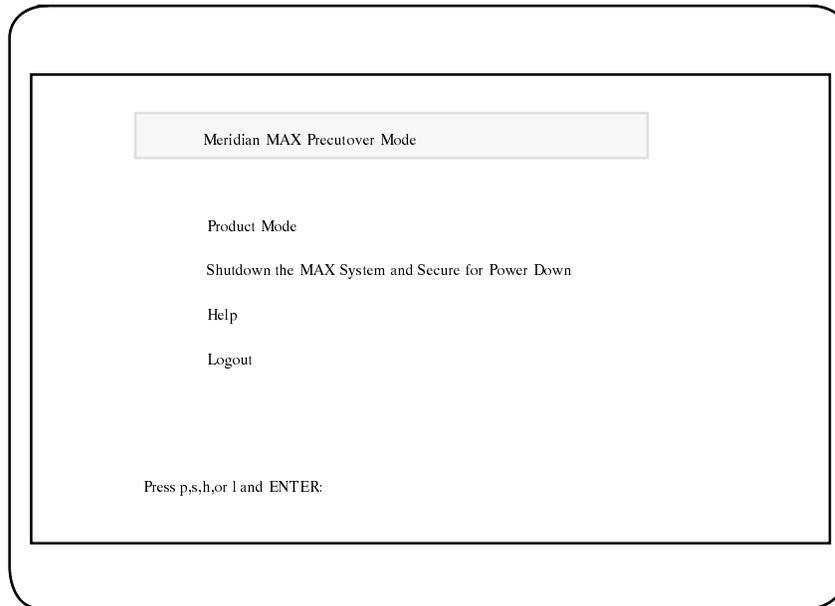
Follow Procedure 11-2 to switch from Precutover mode to Product mode.

### Procedure 11-2

#### To switch from Precutover mode to Product mode

- 1 At the *Login* prompt on the maintenance terminal, type **precut** and press **{RETURN}**.
- 2 At the *Password* prompt, type the logon password supplied by your Nortel Networks distributor.
- 3 Wait for the Meridian MAX Precutover Mode menu to appear.

**Figure 11-2**  
**Meridian MAX Precutover Mode menu**



- 4 Type **p** to select “*Product Mode*” from the menu and press **{RETURN}**. The system displays the following message:

```
The MAX system is currently running in XXXXX-ID mode. MAX
must be in the same mode as the Meridian 1.
```

**Note:** (The “xxxxxx” is the current mode of your Meridian MAX, either Agent or Position).

```
Please verify that the Meridian 1 is in the same mode as
MAX.
```

```
Is the Meridian 1 in XXXXX-ID mode (y/n)?
```

**Note:** (The “xxxxxx” is the current mode of your Meridian MAX.)

- 5 If your Meridian MAX and Meridian 1 are not in the same mode, type **n** to quit and press **{RETURN}**. The main menu appears.  
If you have verified that your Meridian MAX and the Meridian 1 are running in the same mode, type **y** and press **{RETURN}**.
- 6 Wait for the Alter / View Meridian MAX -- IPEX Module Information screen to appear.

**Figure 11-3**  
**Alter/View Meridian MAX — IPEX Module Information screen**

Alter / View Meridian MAX IPEX Module Information

All the information below is optional and is not required to enter "Product" mode.

Meridian 1 Option Type : #\*

The starting location of the Meridian MAX — IPEX Module on the Meridian 1 Switch (TN format) : UNKNOWN

Press y and Enter to change any/all of the information above.

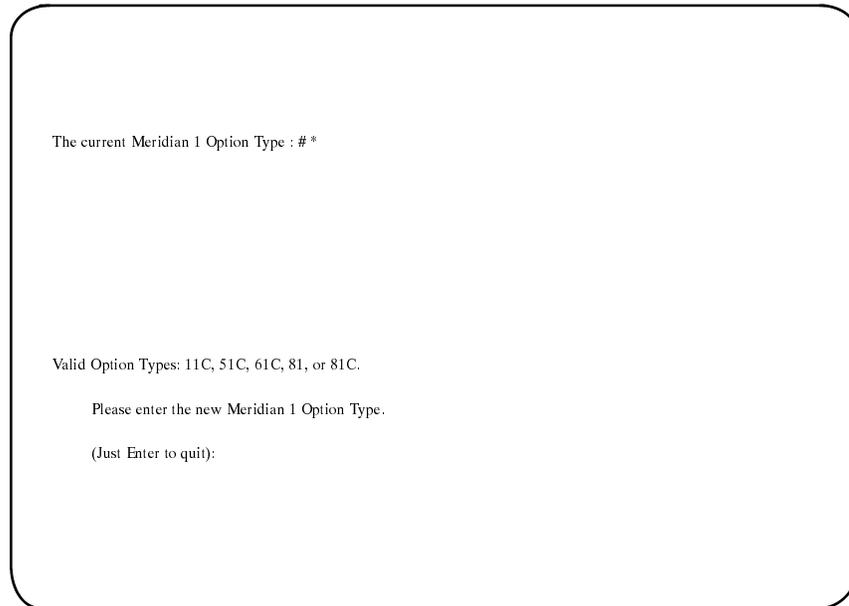
(Just Enter to quit):

\* # is the Option Type number.

The information in this screen is already in the system and appears for confirmation.

- 7 If the information is correct, press **{RETURN}**. Go to Step 12.  
If the information is incorrect, type **y** and press **{RETURN}**. The following screen appears:

**Figure 11-4**  
**Identifying the Meridian 1 option type**



The current Meridian 1 Option Type : # \*

Valid Option Types: 11C, 51C, 61C, 81, or 81C.

Please enter the new Meridian 1 Option Type.

(Just Enter to quit):

**8** Type the new Meridian 1 option type.

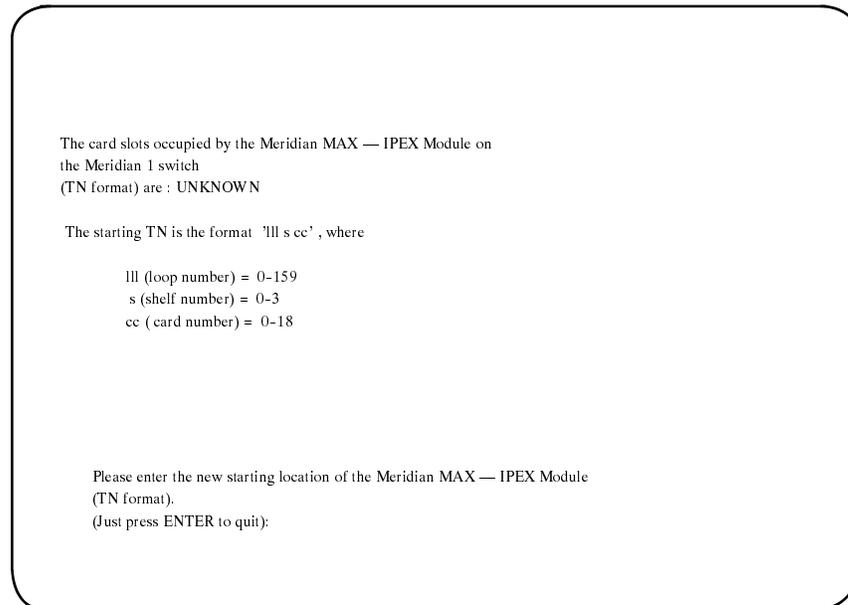
Once you have typed the new Meridian 1 Option Type, the following message appears at the bottom of the screen:

The Meridian 1 Option Type is changed to: xx

**Note:** (The "xx" is the new Meridian 1 option type.)

- 9 Wait for the following screen to appear:

**Figure 11-5**  
**Identifying the starting slot location**

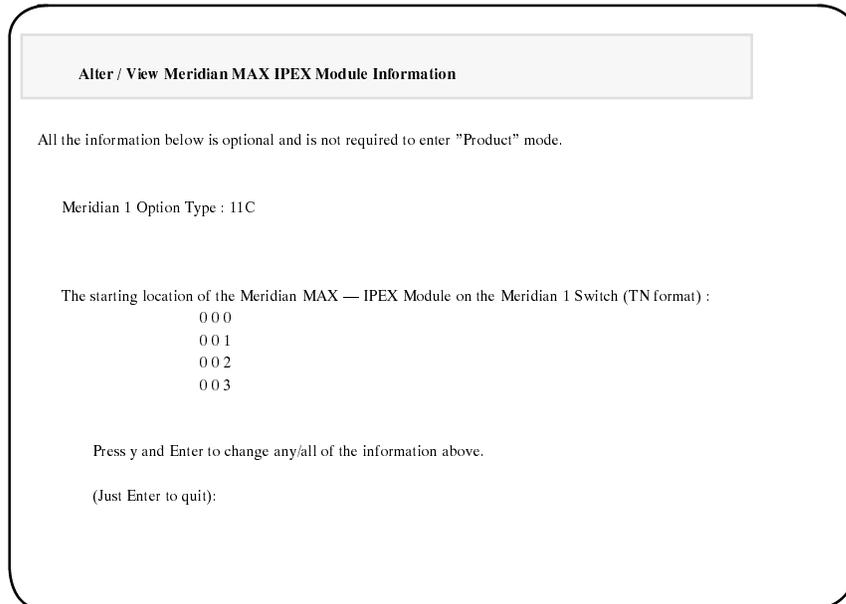


- 10 Type the starting slot location for the Meridian MAX IPEX and press **{RETURN}**.  
Be certain to insert a space between each digit of the slot number (for example, 0 0 4).  
**Note:** If you have an Option 11C, you need three consecutive slots. If you have an Option 51C--81C, you need four consecutive slots.  
Once you have typed the starting slot location, the following message appears at the bottom of the screen:  

```
The starting location of the Meridian MAX IPEX Module on  
the Meridian 1 switch is changed to xxx x xx
```

  
The system returns to the Alter / View Meridian MAX - IPEX Module Information screen shown in Step 6.
- 11 Wait for the system to display the Alter / View Meridian MAX IPEX Module Information screen.

**Figure 11-6**  
**Alter/View Meridian MAX — IPEX Module Information screen**



The information on your screen may differ.

**12** The following message appears:

```
WARNING: Cutting over to Product mode is an
irreversible process. You can only return to
Training/Precutover mode by reloading the Meridian MAX
software from the original tape. All supervisor activity
should be halted before doing this transition.
```

```
Press 'y' and ENTER to confirm cutting over to Product
mode.
```

```
Just press ENTER to remain in Precutover mode.
```

**13** Type **y** and press **{RETURN}** to convert to Product mode.

The system displays the following message:

```
Meridian MAX terminating...
```

```
Rebooting the system now...
```

```
Broadcast message from root (ttyS0) Thu Jul 27 12:15:16
2000...
```

```
The system is going down for reboot NOW !!
INIT: Switching to runlevel: 6
Stopping keytable [ OK ]
Shutting down X Font Server: [ OK ]
Stopping INET services: [ OK ]
Stopping at daemon: [ OK ]
Shutting down lpd: [ OK ]
Saving random seed [ OK ]
Shutting down interface eth0 [ OK ]
Shutting down kernel logger: [ OK ]
Shutting down system logger: [ OK ]
Starting killall [ OK ]
Sending all processes the TERM signal...
Sending all procmd: recovery thread got woken up ...
esses the KILL smd: recovery thread finished ...
ignal.. mdrecoveryd(6) flushing signals.
```

```
Turning off swap
Unmounting file systems
Unmounting proc file system
Please stand by while rebooting the system...
stopping all md devices.
Restarting system.
```

The system is now in Product mode. A series of startup messages appear. When the logon prompt appears, you can log on to the system.

- 14 To verify that all purchasable options and customer-controlled options are correct, log on as **maint**, and refer to the *Meridian MAX 10 Maintenance and Diagnostics Guide* (NTP 553-4001-811), “Maintenance and administration programs: system running” chapter, “View/Modify Meridian MAX Options” section, “Current Option Display” subsection, for more information.

**11-16** Operating modes

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## Chapter 12: Meridian MAX power-down procedure

---

The Meridian MAX is designed to work most effectively when the application is left running at all times. If there is no overruling, site-specific reason for turning off the Meridian MAX system, Nortel Networks recommends that the system be left on.

**CAUTION****Risk of data corruption**

Do not power off a module without first performing the system power-down procedure.

You must not power off the Meridian MAX module without first shutting down the system. The shutdown process synchronizes the information currently in system memory with the information on the hard drive. Only in extenuating circumstances should the module be powered off without first shutting down.

If you must turn the system off, follow these steps.

**Procedure 12-1****Powering down the system**

- 1 Log on as **maint** and type the maintenance password as required.
- 2 Type **s** and press **{RETURN}** to shut down the Meridian MAX software. The system displays the following message:

```
Press y and ENTER to confirm system shutdown. (Just ENTER
to quit)
```

## 12-2 Meridian MAX power-down procedure

---

- 3 Type **y** and press **{RETURN}** to confirm system shutdown. The system displays the following message:  
`Meridian MAX terminating...`
- 4 Type **r** and press **{RETURN}** to select the Restart & Power Down System Utilities option from the Meridian MAX Maintenance and Administration menu.
- 5 At the Restart and Power Down Utilities submenu, type **s** and press **{RETURN}** to select the Secure the system for Power Down option. The system displays the following message:  
`Press y and ENTER to confirm securing the system for power-down. (Just ENTER to quit)`
- 6 Type **y** and press **{RETURN}** to shut the system down.
- 7 Once the system displays `Power down`, turn off the power to the Meridian MAX module.

---

## Chapter 13: Field replaceable parts

---

Table 13-1 lists field replaceable parts for Meridian MAX running on an IPEX.

<b>Table 13-1 Recommended spare parts for Meridian MAX IPEX module</b>	
<b>Name used in document</b>	<b>Part number</b>
Meridian MAX IPEX Option 11C Field Replaceable Unit	NTJH96AA
Meridian MAX IPEX Option 51C-81C Field Replaceable Unit	NTJH96BA
Tape drive repair kit	NTJH99AA
Hard disk repair kit	NTJH99BA

Table 13-2 lists shelf conversion kits for Meridian MAX running on an IPEX.

<b>Table 13-2 Recommended shelf conversion kits for Meridian MAX IPEX module</b>	
<b>Name used in document</b>	<b>Part number</b>
IPEX Shelf Conversion Kit, Option 11C to Large Meridian 1 System	NTJH99CA
IPEX Shelf Conversion Kit, Large Meridian 1 System to Option 11C	NTJH99DA

## Replacing the IPEX battery

When you shut down the IPEX at any point, it uses a 3-volt, long-life lithium battery to retain the date, time, and any user-specified BIOS settings.

If you need to replace the battery, use one of the following types:

- Eveready CR2032
- Panasonic CR2032
- Renata CR2032

**Note:** Since the IPEX is shipped with the required BIOS settings already set, a battery failure during a shut-down should not affect how the system operates, unless you made changes to the factory default BIOS settings. If you need to reset any user-specified BIOS settings, refer to the “Troubleshooting the BIOS settings” chapter for instructions.

---

## Chapter 14: Troubleshooting the BIOS settings

---

If you have encountered problems booting up the IPEX, you might need to make changes to the BIOS settings. The correct BIOS settings and parameters for the IPEX module are presented in this chapter in a series of tables, organized as they appear in the menu of the BIOS Setup Utility. Use these tables to verify and adjust the BIOS settings for your system.

### Verifying the BIOS settings

To verify the BIOS settings, follow these steps.

#### Procedure 14-1

##### To verify the BIOS settings

- 1 Power down the IPEX, wait 10 seconds, and power it on again.  
As the system begins to boot up, the following prompt appears at the bottom of the screen:  
  
Press <PF2> to enter Setup.
- 2 Press <PF2>.  
The BIOS Setup Utility appears.
- 3 Ensure that the BIOS settings match the values in the following tables. Start with Table 14-5, "Boot menu options," and then continue to the remaining tables.
- 4 When finished, return to the "Customer--installed software procedure" section in the "New software installations" chapter.

14-2 Troubleshooting the BIOS settings

<b>Table 14-1 Main menu options</b>		
<b>Option / submenu</b>	<b>Submenu item</b>	<b>Default setting</b>
System Time	N/A	Current Time in Hours, Minutes, and Seconds
System Date	N/A	Current Date in Month, Day, and Year
Legacy Diskette A	N/A	Disabled
Legacy Diskette B	N/A	Disabled
Primary Master	SanDisk SDCFB-32	
	Type	Auto
	Multi-Sector Transfers	Disabled
	LBA Mode Control	Disabled
	32 Bit I/O	Disabled
	Transfer Mode	Fast PIO1
	Ultra DMA Mode	Disabled
Primary Slave	None	
Secondary Master	STxxxxxxx (where xxxxxxx is the model number)	
	Type	Auto
	CHS Format	
	Cylinders	
	Sectors	
	Maximum Capacity	
	LBA Format	
	Total Sectors	
—continued—		

<b>Table 14-1 (continued) Main menu options</b>		
<b>Option / submenu</b>	<b>Submenu item</b>	<b>Default setting</b>
	Maximum Capacity	
	Multi-Sector Transfers	16 Sectors
	LBA Mode Control	Enabled
	32-Bit I/O	Disabled
	Transfer Mode	Fast PIO 4
	Ultra DMA Mode	Mode 2
Secondary Slave	None	
Cache Memory	(Main level displays nothing)	
	Memory Cache	Enabled
	Cache System BIOS area	Write Protect
	Cache Video Bios area	Write Protect
	Cache Base 0--512K	Write-Back
	Cache Base 512--640K	Write-Back
	Cache Extended Memory Area	Write-Back
	Cache A000-EFFF (all entries)	Disabled
Boot Options	(Main level displays nothing)	
	Summary Screen	Disabled
	Floppy Check	Disabled
	Quiet Boot (Graphics)	Disabled
	POST Errors	Disabled
	Hard Disk Pre--Delay	Disabled
—continued—		

#### 14-4 Troubleshooting the BIOS settings

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<b>Table 14-1 (continued)</b> <b>Main menu options</b>		
<b>Option / submenu</b>	<b>Submenu item</b>	<b>Default setting</b>
Keyboard Features	(Main level displays nothing)	
	Numlock	Auto
	Key Click	Disabled
	Keyboard Auto--Repeat Rate	30/sec
	Keyboard Auto--Repeat Delay	1/2 sec
Extended Memory	N/A	255MB
Memory Bank 0	N/A	256MB SDRAM
Memory Bank 1	N/A	Not Installed

<b>Table 14-2 Advanced menu options</b>		
<b>Option / submenu</b>	<b>Submenu item</b>	<b>Default setting</b>
I/O Device Configuration		
	Serial Port A	Enabled
	Base I/O address/IRQ	3F8/IRQ4
	Serial Port B	Enabled
	Base I/O address/IRQ	2F8/IRQ3
	Parallel Port	Disabled
	Mode	Bi-directional
	Floppy Disk Controller	Disabled
	Local Bus IDE Adapter	Both
Advanced Chipset Control		
	ECC Configuration	EC
	Watchdog Timer Status	Disabled
	Watchdog Time Delay	1.2 sec
	Thermal Duty Cycle	37.5%
—continued—		

14-6 Troubleshooting the BIOS settings

<b>Table 14-2 (continued) Advanced menu options</b>		
<b>Option / submenu</b>	<b>Submenu item</b>	<b>Default setting</b>
PCI Configuration		
	PCI IRQ Lines 1 -- 4	Auto Select
	Platform IRQs	
	USB IRQ Enable	No
	Latency Timer	Auto
	Cache Line Size	Auto
	PCI/PNP ISA UMB Region Exclusion	
	PCI/PNP ISA IRQ Resource Exclusion	
	Embedded PCI Devices	
PS-2 Mouse	N/A	Disabled
CPU BIOS Update	N/A	Enabled
Plug & Play O/S	N/A	No
Secured Setup Configuration	N/A	Yes
Reset Configuration Data	N/A	No
Large Disk Access Mode	N/A	DOS

<b>Table 14-3 Security menu options</b>		
<b>Option / submenu</b>	<b>Submenu item</b>	<b>Default setting</b>
Supervisor Password Is	N/A	Clear
User Password Is	N/A	Clear
Set Supervisor Password	N/A	Enter
Set User Password	N/A	Enter
Password on Boot	N/A	Disabled
Fixed Disk Boot Sector	N/A	Normal
Diskette Access	N/A	Supervisor
Virus Check Reminder	N/A	Disabled
System Backup Reminder	N/A	Disabled

<b>Table 14-4 Power menu options</b>		
<b>Option / submenu</b>	<b>Submenu item</b>	<b>Default setting</b>
Power Savings	N/A	Disabled
Standby Timeout	N/A	Off
Auto Suspend Timeout	N/A	Off
Hard Disk Timeout	N/A	Disabled
Video Timeout	N/A	Disabled
Resume on Modem Ring	N/A	Off
Resume on Time	N/A	Off
Resume Time	N/A	00:00:00

14-8 Troubleshooting the BIOS settings

<b>Table 14-5 Boot menu options</b>		
<b>Option / submenu</b>	<b>Submenu item</b>	<b>Default setting</b>
Hard Drive		
Removable Devices		
Diskette Drive		
ATAPI CD-ROM Drive		
Hard Disk		
	1. STxxxxxx (where xxxxxx is the model number)	
	2. Bootable Add-in Card	
Removable Devices		
	SanDisk SDCFB-32	
Removable Format		
	SanDisk SDCFB-32	Removable

<b>Table 14-6 Server menu options</b>		
<b>Option / submenu</b>	<b>Submenu item</b>	<b>Default setting</b>
Dynamic Console	N/A	Disabled
Console Redirect Port	N/A	3F8 IRQ 4
Console Redirect Baud Rate	N/A	9600
Console Redirect At Boot	N/A	Enabled

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## Chapter 15: List of terms

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**ACD**

Automatic call distribution. Provides a means of automatically distributing a company's or organization's incoming calls among a number of answering positions (ACD agents). Automatic call distribution is useful in operations where callers want a service rather than a specific person. Calls are serviced in the order in which they arrive and are distributed so that the workload at each answering position is approximately equal.

**ACD configuration**

Includes the assignments in the Meridian MAX system of agents to queues, queues to a supervisor, trunks to routes, and routes to queues. It also includes the parameters that control recorded announcements, call overflow and interflow, and night service.

**ACD-DN**

Automatic call distribution directory number. The queue where incoming calls wait until they are answered. Calls are answered in the order in which they entered the queue.

**Application layer**

A layer within a network communication model. Application programs generate messages to be sent to other applications within the network.

**Application upgrade**

An application upgrade is the software upgrade procedure you perform when you are installing new features or functionality onto your existing Meridian MAX system without changing the operating system.

**Data link layer**

A layer within a network communication model. It takes application layer messages and sends them over the network.

**Default router/gateway address**

In the network environment, routers (also called gateways) are used to provide connectivity between two networks.

**DID**

Direct Inward Dialed

**DN key**

Directory number key. The agent's link to the Meridian 1. The agent can make and answer non-ACD calls using the DN key.

**DNIS number**

Dialed number information service. In situations where customers can dial one of several telephone numbers, DNIS allows the Meridian MAX system to keep track of the last three or four digits of the telephone number dialed. In this way, one ACD queue can receive calls from several different phone numbers, and agents know which number was dialed and answer each call appropriately.

**HDC**

Historical Data Collection task. This is a task within MAX that collects data from the Meridian 1 and writes the data to the Historical Database.

**HSL**

High-Speed Link. This is the 9600 or 19 200 baud link that connects the Meridian 1 with the Meridian MAX. The Meridian 1 sends call traffic messages to the Meridian MAX through this link.

**Installation upgrade**

A Meridian MAX system upgrade that changes the Meridian MAX operating system and application software.

**IPEX**

Intelligent Peripheral Equipment eXtended platform. The only hardware platform supported in Meridian MAX 10.

**LAN**

Local area network

**Load Management Link**

The link through which the Meridian 1 and the Meridian MAX communicate. This link allows the supervisor to send Load Management commands to the switch.

**Load new software release**

When the Meridian MAX software release you are running is updated, you can perform a “load new software release” procedure. For example, if you are currently running Meridian MAX 10 Release 10.32, and you need to upgrade to Meridian MAX 10 Release 10.35, you can perform this procedure.

**MAX**

Micro-auxiliary processor

**MEI**

MAX Event Interface. Allows Meridian MAX to send real-time, event-related data to a third-party vendor application. Two types of protocol data can be sent: MEI-Network for applications wanting to route calls through the public switched network, and MEI-Observe for applications wanting to ensure that agents are adhering to specified standards.

**Meridian 1**

The private branch exchange (PBX) that handles the calls to and from the organization’s ACD system. It routes calls to the various queues and provides the framework for all the ACD features available through Meridian MAX.

**MQA**

Multiple Queue Assignment. Allows agents to service up to five queues simultaneously. At logon, agents can define priorities within the queues and assign themselves to a specific supervisor. They are also able to log on to any phoneset, allowing workstations to be shared and changed between agents.

**MSI**

MAX Status Interface. Allows Meridian MAX to send queue-based statistical data across the LAN to a central real-time load management system. The central system uses the data received from the Meridian MAX and other vendors’ ACD systems to manage network traffic.

**MTE**

Meridian Terminal Emulator software. A terminal emulator package designed to run on IBM, or 100%-compatible AT or higher, PCs. It also provides additional features such as local printing to a PC-based supervisor workstation, LAN connectivity for supervisor workstations, and color customization of supervisor workstation screen elements.

**NAC**

Network Administration Center. A computerized system that allows organizations with multiple MAX sites, called nodes, to monitor and supervise all sites from one central location.

**NACD**

Network Automatic Call Distribution. An option that allows calls to be overflowed to an ACD-DN in another node in the ACD network.

**Node**

A Meridian MAX or ACD-MAX system that functions as part of a Network Administration Center (NAC) system.

**Platform upgrade**

An upgrade that involves changes to both Meridian MAX system hardware and software. For example, an upgrade from a Meridian MAX SNN system to a Meridian MAX IPEX system is a platform upgrade.

**Primary queue**

The first queue the agent logs on to while working with MQA enabled.

**SDA**

Supervisor Display Access. Allows you to access another supervisor display through the system console port or remote diagnostic modem port.

**Subnet mask**

A 32-bit number used by the network software on a local machine to determine which bits belong to the network or to the host parts of an Internet address. An improper subnet mask can result in high collision rates and reduced network efficiency.

**Supervisor**

The person who manages agent and queue performance.

**System administrator**

The person responsible for overseeing the functions of the Meridian MAX system, including its staff and facilities. In addition to the functions available to supervisors, the system administrator is usually responsible for the definition of management reports and the printing schedule for these reports. Based on the information that these reports provide, the system administrator can reconfigure the system to best use the system's equipment and personnel.

**Trunk routes**

Trunks are the physical links, or circuits, that enable telephone communication. A trunk route carries calls from outside the ACD system to an agent or ACD queue.

**UEM**

Universal Equipment Module. The basic modular building block of the Meridian 1 system.

**15-6** List of terms

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*Installation Guide*  
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Electronic Private Automatic Branch Exchange and  
Business Communication Systems

## **Meridian MAX**

### Installation Guide

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