Electronic Private Automatic Branch Exchange and Business Communication Systems

Meridian MAX

Upgrade Guide

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About this document

This document details the steps and procedures required to successfully install the hardware and software to upgrade your current system to a Meridian MAX 9.

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 9 document set.

CALLS ANSWD

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

{RETURN}

Words or characters within brackets and capitalized represent a specific key on your keyboard. When two or more such keys appear side by side, you must press all of the keys 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 9 Supervisor's User Guide* (P0881392), "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 **{ENTER}** 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.

"Configuration Control"

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

Example

Refer to the "Profile Maintenance" chapter.

Meridian MAX 9 Supervisor's User Guide

Italicized text represents references to other documents.

Example

Refer to the *Meridian MAX 9 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. Please refer to the *Meridian MAX 9 Supervisor's User Guide* (P0881392), "Understanding the interface" chapter, for more information.

Reference to other Meridian MAX documents

Additional information about Meridian MAX is contained in the following Nortel (Northern Telecom) documents:

- P0881392 *Meridian MAX 9 Supervisor's User Guide*
- 553-4001-111 *Meridian MAX 9 Installation Guide* (P0881386)
- 553-4001-210 *Meridian MAX 9 Upgrade Guide* (P08881397)
- 553-4001-811 *Meridian MAX 9 Maintenance and Diagnostics Guide* (P0881387)
- P0881398 *MTE 9 User Guide*
- P0853407 *Meridian MAX 8 Supervisor's User Guide*
- 553-4001-111 *Meridian MAX 8 Installation Guide* (P0853401)
- 553-4001-811 *Meridian MAX 8 Maintenance and Diagnostics Guide* (P0853402)
- P0853414 *Meridian MAX 8 MSI/MEI Protocol Reference Guide*

- P0853413 *MTE 8 User Guide*
- P0815598 *Meridian MAX 7 Supervisor's User Guide*
- 553-4001-111 *Meridian MAX 7 Installation Guide* (P0815587)
- 553-4001-811 *Meridian MAX 7 Maintenance and Diagnostics Guide* (P0815589)
- 553-4001-911 *Meridian MAX 7 Overview* (P0815591)
- P0821303 *MTE 7 User Guide*
- P0815602 *MTE 6 User Guide*
- P0802089 *Meridian MAX 6 Supervisor's User Guide*
- P0802091 *Meridian MAX 6 Supervisor's Reference Guide*
- 553-4001-111 *Meridian MAX 6 Installation Guide* (P0802079)
- 553-4001-811 *Meridian MAX 6 Maintenance and Diagnostics Guide* (P0802081)
- 553-4001-911 *Meridian MAX 6 Overview* (P0802083)
- 553-4001-212 *Meridian MAX 6 Platform Upgrade Guide for ACD-MAX 3, 4, and ACD-D Systems* (P0802087)
- P0743664 *Meridian MAX 5 Supervisor's User Guide*
- P0743656 *Meridian MAX 5 Supervisor's Reference Guide*
- 553-4001-111 *Meridian MAX 5 Installation Guide* (P0743645)
- 553-4001-811 *Meridian MAX 5 Maintenance and Diagnostics Guide* (P0743647)
- 553-4001-911 *Meridian MAX 5 Overview* (P0743643)
- 553-4001-210 *Meridian MAX 5 Installation Upgrade Guide for Meridian MAX 3, 4, and 4.6 Systems* (P0743683)
- 553-4001-212 *Meridian MAX 5 Platform Upgrade Guide for ACD-MAX 3, 4, and ACD-D Systems* (P0743687)

- P0741145 *Meridian MAX 4.6 Supervisor's User Guide*
- 553-4001-024 *Meridian MAX - IPE 4.6 Master Index*
- 553-4001-121 *Meridian MAX - IPE 4.6 Installation*
- 553-4001-821 *Meridian MAX - IPE 4.6 Maintenance and Diagnostics*
- 553-4001-921 *Meridian MAX - IPE 4.6 Overview*
- 553-4001-004 *Meridian MAX 4 Master Index*
- 553-4001-111 *Meridian MAX 4 Installation*
- 553-4001-811 *Meridian MAX 4 Maintenance and Diagnostics*
- 553-4001-911 *Meridian MAX 4 Overview*

For more information on the hardware and software that operate in conjunction with Meridian MAX - IPE, refer to the following Nortel documents:

- P0735303 *Option 11 — X11 Software Guide, Including Supplementary Features*
- 553-3011-200 *Option 11 General Installation and Planning Guide — Read Me First*
- 553-3011-210 *Option 11 Installation Guide*
- 553-3011-300 *Option 11 Administration Guide*
- 553-3001-200 *System Option 21, 51, 61, 71 — System Installation Procedures*
- 553-3001-500 *System Option 21, 51, 61, 71 General Maintenance*
- 553-3001-305 *X11 Features and Services **
- 553-3001-400 *X11 Input/Output Guide*
- 553-2311-105A2 *Appendix to Features and Services for Generic X11 Supplementary Features **
- 553-2311-311 *X11 Data Administration Input/ Output Guide Including Supplementary Features **

- 553-2301-511 *X11 Maintenance Input/Output Guide Including Supplementary Features **

(* document also used for Generic X11 International software)

Reference to NAC documents

Additional information about NAC is contained in the following Nortel documents:

- P0724352 *NAC 2 Supervisor's User Guide*
- 553-4011-110 *NAC 2 Installation Guide* (P0724340)
- 553-4011-510 *NAC 2 System Administration and Maintenance Guide* (P0724342)
- 553-4011-100 *NAC 1 Installation*
- 553-4011-500 *NAC 1 Operations*
- 553-4011-800 *NAC 1 System Messages*
- P0743022 *NAC 1 Supervisor's User Guide*

Reference to other ACD documents

Other Nortel ACD documents associated with Meridian MAX are listed below:

- 553-2671-100 *ACD Basic Features Description (Package A)*
- 553-2671-101 *ACD Advanced Features Description (Package B)*
- 553-2671-102 *Management Reports Description (Package C1)*
- 553-2671-103 *ACD Load Management Description (Package C2)*
- 553-2671-104 *ACD-D General Description (Section 3 only)*

The following Nortel documents refer to Customer Controlled Routing (CCR):

- 553-3201-110 *Application Module Overview Guide*
- 553-3201-210 *Application Module Installation and Upgrade Guide*
- P0729367 *Customer Controlled Routing (CCR) User Guide*

Chapter 1: Introduction

Hardware platforms

The type of Meridian MAX 9 hardware platform you are using determines your features and level of functionality. Features are common to all hardware platforms unless otherwise specified.

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

Note: Meridian MAX 7 (and higher) does not support the SEE hardware platform.

Table 1-1 lists the available hardware platforms and their hardware composition.

Table 1-1
Meridian MAX 9 hardware platforms

Platform	Hardware composition
SNN	Single-module system New MVME167-34 CPU card New Mass Storage Unit (MSU) containing a 1 Gbyte hard disk and a 600 Mbyte cassette drive
SNN-Enhanced (SNN-E)	Single-module system New MVME177-005 CPU card New Mass Storage Unit (MSU) containing a 2 Gbyte hard disk and a 600 Mbyte cassette drive
IPE	Intelligent Peripheral Equipment (IPE) module containing an SMM167 CPU card Due to maintenance considerations (replacement components) your IPE will contain one of the following: • a 180 Mbyte hard disk and a 155 Mbyte cassette drive • a 240 Mbyte hard disk* and a 600 Mbyte cassette drive * The 240 Mbyte hard disk is configured and recognized by the software as a 180 Mbyte hard disk.
IPE-Enhanced (IPE-E)	Intelligent Peripheral Equipment (IPE) module containing an SMM167 CPU card A 1 Gbyte hard disk and a 600 Mbyte cassette drive

Hardware and software upgrades

Table 1-2 lists the paths to follow to upgrade to a Meridian MAX 9.

Note 1: Upgrading from an ACD-MAX system requires a platform upgrade to Meridian MAX 6 SNN or IPE before upgrading to Meridian MAX 9. Contact your Nortel service representative for more information.

Note 2: To perform an installation upgrade or application upgrade, refer to the "Software upgrades and reinstallations" chapter. To perform a software upgrade, refer to the "Load new software" chapter.

Note 3: Upgrading your Meridian MAX 9 software to a more recent Meridian MAX 9 software version may not always be possible. Contact your Nortel distributor for details.

Table 1-2
Meridian MAX upgrade paths

Current system	New Meridian MAX 9 system	Upgrade path(s)	Change hardware or software
Meridian MAX 3 Single Module	SNN, SNN-E IPE, IPE-E	Installation Upgrade	Hardware and software
Meridian MAX 3 Dual Module	SNN, SNN-E	Installation Upgrade	Hardware and software
Meridian MAX 4 Single Module	SNN, SNN-E IPE, IPE-E	Installation Upgrade	Hardware and software
Meridian MAX 4 Dual Module	SNN, SNN-E	Installation Upgrade	Hardware and software
Meridian MAX 4.6 IPE	SNN, SNN-E	Installation Upgrade	Hardware and software
Meridian MAX 4.6 IPE	IPE, IPE-E	Installation Upgrade	Hardware (for IPE-E) and software
Meridian MAX 5 SNN	SNN, SNN-E	Installation Upgrade	Hardware (for SNN-E) and software
Meridian MAX 5 SEE	SNN, SNN-E IPE, IPE-E	Installation Upgrade	Hardware and software

—continued—

Table 1-2 (continued)
Meridian MAX upgrade paths

Current system	New Meridian MAX 9 system	Upgrade path(s)	Change hardware or software
Meridian MAX 5 IPE	SNN, SNN-E IPE, IPE-E	Installation Upgrade	Hardware (not for IPE) and software
Meridian MAX 6 SNN	SNN, SNN-E	Installation Upgrade	Hardware (for SNN-E) and software
Meridian MAX 6 SEE	SNN, SNN-E IPE, IPE-E	Installation Upgrade	Hardware and software
Meridian MAX 6 IPE	SNN, SNN-E IPE, IPE-E	Installation Upgrade	Hardware (not for IPE) and software
Meridian MAX 7 SNN	SNN, SNN-E	Installation Upgrade	Hardware (for SNN-E) and software
Meridian MAX 7 IPE	SNN, SNN-E IPE, IPE-E	Installation Upgrade	Hardware (not for IPE) and software
Meridian MAX 8 SNN-E	SNN-E	Installation Upgrade	Software
Meridian MAX 8 SNN	SNN	Installation Upgrade	Software
Meridian MAX 8 SNN	SNN-E	Installation Upgrade	Hardware and software
Meridian MAX 8 IPE-E	IPE-E	Installation Upgrade	Software
Meridian MAX 8 IPE-E	SNN, SNN-E	Installation Upgrade	Hardware and software
Meridian MAX 8 IPE	IPE	Installation Upgrade	Software
Meridian MAX 8 IPE	SNN, SNN-E, IPE-E	Installation Upgrade	Hardware and software
Meridian MAX 9 SNN-E	SNN-E	Installation Upgrade Application Upgrade Software Upgrade	Software
Meridian MAX 9 SNN	SNN	Installation Upgrade Application Upgrade Software Upgrade	Software
Meridian MAX 9 SNN	SNN-E	Installation Upgrade	Hardware and software
—continued—			
Meridian MAX 9 IPE-E	IPE-E	Installation Upgrade Application Upgrade Software Upgrade	Software

Table 1-2 (continued)
Meridian MAX upgrade paths

Current system	New Meridian MAX 9 system	Upgrade path(s)	Change hardware or software
Meridian MAX 9 IPE-E	SNN, SNN-E	Installation Upgrade	Hardware and software
Meridian MAX 9 IPE	IPE	Installation Upgrade Application Upgrade Software Upgrade	Software
Meridian MAX 9 IPE	SNN, SNN-E, IPE-E	Installation Upgrade	Hardware and software

—end—

Installation responsibilities

The following installation procedures are performed by your staff or the Meridian 1 distributor:

- Obtain the hardware and software required for this installation.
- Back up the historical database.
- Install the Meridian MAX Application Module or the Meridian MAX IPE/IPE-E module (if applicable).
- Install the operating system and Meridian MAX application software.
- Configure the Meridian MAX.
- Start up the system.

Hardware overview

For an Application Equipment Module (AEM) installation, read and follow the instructions given in the following chapters of the document *Application Equipment Module Installation Guide* (NTP 553-3201-200):

- "Overview"
- "Installing a Stand-alone AEM"
- "Adding an AEM to a Column"

For an IPE/IPE-E module installation, read and follow the instructions given in the following chapters of the *System Option 21, 51, 61, 71, 81 Installation and Maintenance Guide* (P0736432):

- "System overview"
- "System installation"

The following is an overview of the Meridian MAX 9 hardware upgrade process:

1 Decide upon the layout of the peripheral equipment to be attached to the Meridian MAX, bearing in mind the environmental and power requirements.

2 Assess the need for self-powered limited-distance modems to permit a distance between a peripheral and the Meridian MAX of more than 15 meters (50 feet).

3 Remove any existing hardware required to be removed for an upgrade.

4 Install the Meridian MAX IPE/IPE-E module or Meridian MAX Application Module, cards, power supply, and Mass Storage Unit (MSU).

Software overview

The following is a list of the steps required to perform a software upgrade:

1 Back up the Meridian MAX database from your existing system.

2 Format the hard disk drive and install the operating system, if applicable.

3 Install and the Meridian MAX application software.

4 Transfer the existing Meridian MAX database to the Meridian MAX hard disk.

5 Start up the Meridian MAX system in Precutover Mode.

6 Configure the Meridian MAX database while in Precutover Mode.

7 Switch from Precutover Mode to Product Mode.

To update certain software options on your Meridian MAX, refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), "Maintenance and administration programs: system running" and "Maintenance and administration programs: system shut down" chapters, "View/Modify Meridian MAX Options" section for more information.

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 *Automatic Call Distribution with an Auxiliary Data System—System Performance and Engineering Information* (NTP 553-2671-151, Appendix 2) for a discussion of MAR and MSR. Refer to the "Site preparation" chapter of this document for a more detailed discussion of Meridian MAX performance capacities.

System reliability

Meridian MAX 9 provides automatic backup and protection against the loss of data due to a power failure.

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 databases 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. These database files can be transferred to the new Meridian MAX 9.

Power failure

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

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

The Mean Time Between Failures (MTBF) value calculated for a 16-port Meridian MAX SNN/SNN-E Application Module is 10 500 hours at 40°C (104°F). Table 1-3 lists the major components of the Meridian MAX application module and their MTBF values.

Table 1-3
Mean Time Between Failures (MTBF) for Meridian MAX Application Module (at 40°C)

Hardware	MTBF (hours)
Motorola MVME167 single board computer (SNN only) Motorola MVME177 single board computer (SNN-E only)	83 500 > 83 500
Motorola MVME712M transition board	300 000
Motorola MVME332XTS Intelligent Serial Interface card	83 500
Motorola MVME332XT Intelligent Serial Interface card	83 500
Farnell NF350 (AC) power supply	72 000
Farnell ND300 (DC) power supply	72 000
Motorola MVME867B Seagate ST31230N 1 Gbyte hard disk drive (SNN only)	800 000
Motorola MVME867 Seagate ST11200N 1 Gbyte hard disk drive (SNN only)	200 000
Motorola MVME868KA-002 Seagate ST32430N 2 Gbyte hard disk drive (SNN-E only)	800 000
Motorola MVME868KB-002 Seagate ST32171N 2 Gbyte hard disk drive (SNN-E only)	800 000
Motorola NTAM-TK600 TEAC MT-2ST/F50B-000 600 Mbyte cassette drive (at 15 minutes per 8-hour period)	75 000

The MTBF value calculated for the Meridian MAX IPE/IPE-E module is 35 800 hours. Table 1-4 lists the major components of the Meridian MAX IPE/IPE-E module and their MTBF values.

Table 1-4
Mean Time Between Failures (MTBF) for Meridian MAX IPE/IPE-E module

Hardware	MTBF (hours)
Meridian MAX IPE/IPE-E system	35 800
Motorola SMM167 single-board computer	83 500
Motorola 01-W1512BO2I Seagate ST31055N 1 Gbyte hard disk drive (Option 11) Motorola 01-W1512B1OI Seagate ST31055N 1 Gbyte hard disk drive (Option 21-81)	800 000
Motorola MVME867B Seagate ST31230N 1 Gbyte hard disk drive	800 000
Motorola NTAM-DK240 Fujitsu M2614 M2637S 240 Mbyte hard disk drive	130 000
Motorola NTAM-DK180 Seagate ST1201N 180 Mbyte hard disk drive	130 000
Motorola NTAM-TK600 TEAC MT-2ST/F50B-000 600 Mbyte cassette drive (at 15 minutes per 8-hour period)	75 000
Motorola MVME855 TEAC MT-2ST/N50 155 Mbyte cassette drive (at 19 minutes per 8-hour period)	75 000
Power converter circuit board	146 000
CPU adapter circuit board	146 000

Chapter 2: Site preparation

Power requirements

Table 2-1 lists the power requirements for all of 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.

Table 2-1
Meridian MAX power requirements

Equipment	Voltage	Frequency	Power
Meridian MAX application module – single (AC)	220–240 VAC	50–60 Hz	142 W
Meridian MAX application module – single (DC)	–48 V	N/A	142 W
Meridian MAX IPE/ IPE-E (DC)	+5 and –48 V	N/A	142 W
DEC VT520 or 100%-compatible terminal	100–240 VAC	47–63 Hz	15 W

—continued—

Table 2-1 (continued)
Meridian MAX power requirements

Equipment	Voltage	Frequency	Power
DEC VT420 or 100%-compatible terminal (North American or World-wide models)	100–240 VAC	50–60 Hz	35 W
DEC VT220 or 100%-compatible terminal	100–240 VAC	50–60 Hz	35 W
Gandalf LDS 120E	110–120 VAC	60 Hz	5 W
Develcon DS511A	115 VAC	60 Hz	2 W
NetComm SmartModem M7F	15 VAC	50-60 Hz	5 W
UDS 2440 modem	115 VAC	60 Hz	14 W
U.S. Robotics Sportster 28.8 Data/Fax modem	120 VAC	60 Hz	17 W
U.S. Robotics Sportster 33.6 Data/Fax modem	120 VAC	60 Hz	17 W
Ven-Tel 2400 Plus II and 9600 Plus II modems	90–130 VAC	50–60 Hz	10 W
Racal-Vadic VI2422PA modem	240, 220 or 115 V	47–63 Hz	7 W
RuggedWriter printer	100, 120, 220, 240 VAC (+/–10%) (user-selectable)	47.5–63 Hz	20 W Idle max. 80 W Printing max.

—continued—

Table 2-1 (continued)
Meridian MAX power requirements

Equipment	Voltage	Frequency	Power
LaserJet II, LaserJet III, LaserJet 4, and LaserJet 5Si MX printers	100, 115, 220, 240 VAC(+/–10%) (user-selectable)	48–62 Hz	170 W (115 V) Idle max. 870 W (115 V) Printing max.
LaserJet 4 Plus	100-127 VAC or 220-240 VAC	48–62 Hz	300 W
PaintJet 3630 printer	100, 120, 220, 240 VAC(+/–10%) (user-selectable)	48–66 Hz	20 W
DeskJet printer	100, 120, 220, 240 VAC (+/–10%) (user-selectable)	47.5–63 Hz	8 W (120 V) Idle max. 25 W (120 V) Printing max.
DeskJet 500 printer	120 VAC	50–60 Hz	25 W
DeskJet 560C printer	100, 120, 220, 240 VAC (+/–10%) (user-selectable)	50–60 Hz	25 W
DeskJet 660C printer	100, 120, 127, 220, 230, 240 VAC (+/–10%) (user-selectable)	50–60 Hz	12 W
DEC LA195 (Epson-mode only)	95–132 VAC	47–63 Hz	33 W

—end—

Environmental requirements

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

Meridian MAX Application Module

The following list details the environmental requirements for your Meridian MAX hardware:

- operating temperature between 10°C–35°C (50°F–104°F)
- non-operating temperature between –10°C–60°C (14°F–140°F)
- changes in temperature less than 20°C / hour (68°F / hour)
- operating humidity between 20%–80% (non-condensing)
- non-operating humidity between 20%–80% (non-condensing)
- operating altitude between 0–3.24 km (0–10 000 ft)

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

Meridian MAX IPE/IPE-E module

The following list details the environmental requirements for your Meridian MAX IPE/IPE-E hardware:

- 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 (68°F/hour)
- operating humidity between 20%–80% (non-condensing)
- non-operating humidity between 20%–90% (non-condensing)
- operating altitude between 0–3.24 km (0–10 000 ft)
- non-operating altitude between 0–9.14 km (0–30 000 ft)

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

X11 software packaging requirements

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

- Basic ACD Features (Package A) Option 40, 45, 83
- Advanced ACD Features (Package B) Option 41, 98, 116
- ACD Reports (Package C1) Option 42
- ACD Load Management (Package C2) Option 43
- ACD Link (MAX/ACD-D) Option 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 equipped 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 Option 207

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

- EAR Option 214
- 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.

Consider the following factors when planning your site. The exact details for your site's layout depend entirely on your specific requirements and restrictions. You may choose to discuss these and other factors with your distributor or Nortel representative before installing the hardware.

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.

ATTENTION

Cable connections between the LAN and the Meridian MAX must not exceed 50 meters (164 feet).

This connection is an IEEE standard 802.3.

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 IPE/IPE-E system. The SDA console cannot be supported through regular or limited-distance modems. SDA is only available on the IPE/IPE-E hardware platform.

Printer location

Locate the printers in conveniently accessible areas so the supervisors can obtain their reports. Placing one printer near the Meridian MAX allows access to printed reports while performing system maintenance functions. Remember that the maximum range for the printer cable is 15 meters (50 feet). Use self-powering, limited-distance modems to extend this range, if necessary.

Static electricity precautions

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

These are factors to be considered. The exact details for your site's layout depend entirely on your specific requirements and restrictions. You may choose to discuss these and other factors with your Nortel representative before installing the hardware.

Multiple Queue Assignment

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

- The minimum system requirements to use MQA are Meridian MAX 7 and X11 Release 21.23 or higher.
- You must have one of the following Meridian Modular telephone sets: M2008, M2216, 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 9 Supervisor's User Guide* (P0881392), "Using Multiple Queue Assignment" chapter.

Capacities

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 running on different platforms.

Table 2-2
Meridian MAX hardware platform maximums

Platform	Number of ports	Supervisor/ agent positions	Supervisor workstations	Number of queues	Number of routes/ trunks
SNN/SNN–E	8/16/24/ 32/40	1200	60	240	256/ 2000
IPE/IPE-E	8	200/ 300	20	100	128/ 180

Note 1: Not all maximums can be achieved at the same time, and not all maximums are available on all hardware platforms.

Note 2: The route numbers on the SNN/SNN-E platforms must be between 0 and 511. The route numbers on the IPE/IPE-E platforms must be between 0 and 127.

Note 3: Position Sizing allows the number of supervisor positions to be increased to the system maximum described in Table 2-2. To change the number of positions, a new keycode is required. For more information, refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), “Maintenance and administration programs: system running” chapter, “View/Modify Meridian MAX Options” section, “Keycode Options Update” subsection.

Hardware-dependent capacities

Not all ports need to be assigned on your Meridian MAX system, 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.

Table 2-3
Meridian MAX 9 hardware-dependent ports

Platform	Predefined ports
SNN/SNN-E	Card 2, Conn 1A is permanently assigned to the High-Speed Link and cannot be changed by the user. The LAN connection is located at the Ethernet port on the I/O panel.
IPE/IPE-E	Ports 1, 2, and 8 are permanently assigned to the maintenance console, remote diagnostic modem and High-Speed Link respectively, and cannot be changed by the user. The maintenance console and remote diagnostics modem may also be used as a supervisor display through Supervisor Display Access (SDA). The LAN connection is located at the Ethernet port on the NT1R03AA four-port I/O cable.

At least one workstation (if there are no LAN sessions) and one printer must be assigned per configuration.

A connection for local printing can be configured. A local printer is the Windows default printer for a PC. The PC must be

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

For the SNN/SNN-E hardware platforms, the connections for the maintenance console and remote diagnostic modem are not included in the total number of ports available on a Meridian MAX system. For the IPE/IPE-E hardware platforms, these device connections are included in the total number of ports available on a system.

Meridian MAX Application Module

Table 2-4 lists the theoretical maximum number of each device that can be configured in the Meridian MAX Application Module when the Configuration Control and NAC connectivity options are enabled or disabled. (The SNN/SNN-E platforms are part of the application module.)

Local printers

Your Meridian MAX 9 can support a number of local printers in addition to the maximum number of direct connect printers described in the following tables. An SNN/SNN-E system can support up to 20 local printers. This number is a combination of direct connect supervisor workstations running MTE and supervisor workstations running MTE connected to the LAN.

SNN/SNN-E peripheral limits

The SNN/SNN-E platforms use the AM Generic I/O Panel for attaching the Meridian MAX peripherals. The AM Generic I/O panels provide up to 40 RS-232C ports. The number of active connections is dependent upon the number of MVME332XTS/MVME332XT cards installed.

Note 1: Not all maximums can be achieved simultaneously.

Note 2: The Load Management Link must be configured 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.

Table 2-4
SNN/SNN-E peripheral limits

Hardware device	8 I/O ports	16 I/O ports	24 I/O ports	32 I/O ports	40 I/O ports
Configuration Control and NAC					
Maximum number of workstations connected directly or through a modem	4	12	20	28	36
Maximum number of directly connected printers	4*	8	8	8	8
Maximum number of workstations (connected directly or through a modem) and printers (connected directly)	5	13	21	29	37
High-Speed Link	1	1	1	1	1
Load Management Link	1	1	1	1	1
NAC Network Link	1	1	1	1	1
Configuration Control without NAC					
Maximum number of workstations connected directly or through a modem	5	13	21	29	37
Maximum number of directly connected printers	5*	8	8	8	8
Maximum number of workstations (connected directly or through a modem) and printers (connected directly)	6	14	22	30	38
High-Speed Link	1	1	1	1	1
Load Management Link	1	1	1	1	1

—continued—

Table 2-4 (continued)
SNN/SNN-E peripheral limits

Hardware device	8 I/O ports	16 I/O ports	24 I/O ports	32 I/O ports	40 I/O ports
Neither Configuration Control nor NAC					
Maximum number of workstations connected directly or through a modem	6	14	22	30	38
Maximum number of directly connected printers	6*	8	8	8	8
Maximum number of workstations (connected directly or through a modem) and printers (connected directly)	7	15	23	31	39
High-Speed Link	1	1	1	1	1

—end—

* One more printer is allowed if there is at least one active LAN session.

Meridian MAX IPE/IPE-E module

Table 2-5 lists the theoretical maximum number of each peripheral device that can be configured on the Meridian MAX IPE/IPE-E.

Local printers

Your Meridian MAX 9 can support a number of local printers in addition to the maximum number of directly connected printers described in the following tables. An IPE/IPE-E system can support up to 10 local printers. This number is a combination of directly connect supervisor workstations running MTE, and supervisor workstations running MTE connected to the LAN.

IPE/IPE-E peripheral limits

The IPE/IPE-E platforms have eight RS-232C ports for attaching Meridian MAX peripherals.

Note 1: Not all maximums can be achieved simultaneously.

Note 2: "System console" and "maintenance console" are interchangeable terms. "Remote diagnostics modem" is also referred to as "diagnostics modem" and "external modem."

Note 3: The Load Management Link must be configured 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.

Table 2-5
Meridian MAX IPE/IPE-E hardware-dependent capacities

Hardware device	Maximum
Maintenance console	1
Remote diagnostics modem	1
High-Speed Link	1
Load Management Link	1
Printer	2
Supervisor workstation	4
NAC network link	1

Table 2-6 lists the maximum number of each peripheral device allowed when the Meridian MAX IPE/IPE-E has Configuration Control or NAC connectivity, or both, enabled or disabled.

Table 2-6
IPE/IPE-E peripheral limits

Hardware device	Maximum number with 1 printer	Maximum number with 2 printers
Configuration Control and NAC		
Maximum number of workstations connected directly or through a modem	2	1
Maintenance console	1	1
Diagnostics modem	1	1
High-Speed Link	1	1
Load Management Link	1	1
NAC Network Link	1	1

—continued—

Table 2-6 (continued)
IPE/IPE-E peripheral limits

Hardware device	Maximum number with 1 printer	Maximum number with 2 printers
Configuration Control without NAC		
Maximum number of workstations connected directly or through a modem	3	2
Maintenance console	1	1
Diagnostics modem	1	1
High-Speed Link	1	1
Load Management Link	1	1
Neither Configuration Control nor NAC		
Maximum number of workstations connected directly or through a modem	4	3
Maintenance console	1	1
Diagnostics modem	1	1
High-Speed Link	1	1

—end—

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. A simple call per hour is an external call which 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.

In Meridian MAX 9, the maximum call rates (when using most of the features) have been reduced to accommodate new features that require a significant amount of disk space and memory.

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 peak call rate (a rate greater than the maximum sustainable call rate) is difficult to determine since it will adversely affect the performance of the various features. The effects are different depending on the set of features.

The call rates stated are the rates that the Meridian MAX can support. The Meridian 1 may support maximum/peak call rates higher or lower than the Meridian MAX can support.

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.

- These options, which can be purchased, must be enabled: MTE, CCR, NACD, CC, NAC, MQA, and MSI.
- These options, which can also be purchased, are set to their maximum: number of queues, positions, LAN supervisor sessions, MEI-Network links, and MEI-Observe links.
- Trunk-level reporting and the agent activity code feature are enabled.
- Interval data is being stored from RAM to disk.
- Midnight routines are not running.

- Meridian MAX supervisors have their display refresh rate set at 10 seconds.
- Maximum number of Meridian MAX supervisors are logged in.
- Shifts change with about one third of the agents logging on and off.
- Supervisors are using the Spare Position Handling feature.
- Three simultaneous historical reports are being generated.
- Historical database is one third its maximum size.
- There are no active MSI connections, NAC connections, or Configuration Control commands.
- There is one active MEI-Network connection.
- There are three active MEI-Observe connections.

Table 2-7 provides the maximum sustainable call rate which can be supported by a fully loaded Meridian MAX. On the Meridian 1, all the agents are servicing five queues with talk times of 30, 60, 90, and 120 seconds, randomly selected.

Table 2-7
Maximum sustainable call rate at full load (with shift change)

Platform	HSL baud rate	Meridian MAX 9 simple calls per hour	Meridian MAX 9 HSL messages per hour
SNN-Enhanced	9600 or 19 200	22 000	110 000
SNN	9600 or 19 200	10 000	50 000
IPE-Enhanced	9600 or 19 200	3500	17 500
IPE	9600 or 19 200	4000	20 000

Call rates without shift change

Table 2-8 shows the maximum sustainable call rates based on a scenario in which a system is fully loaded but not undergoing a shift change.

Table 2-8
Maximum sustainable call rate at full load (without shift change)

Platform	HSL baud rate	Meridian MAX 9 simple calls per hour	Meridian MAX 9 HSL messages per hour
SNN-Enhanced	9600 or 19 200	23 000	115 000
SNN	9600 or 19 200	11 000	55 000
IPE-Enhanced	9600 or 19 200	9000	45 000
IPE	9600 or 19 200	9000	45 000

Printers

The following printers can be used by the Meridian MAX:

- DEC LA195 (Epson mode only)
- HP RuggedWriter
- HP LaserJet series II, III, 4, 4 Plus, 5Si MX, 6P, or 100–percent compatible
- HP LaserJet 4PJ (for Japanese language only)
- HP PaintJet 3630
- HP DeskJet
- HP DeskJet 560C
- HP DeskJet 660C, 870Cxi
- HP DeskJet 505J (for Japanese language only)

Although not supported by Nortel, the Meridian MAX can also work with printers with the following settings:

- XON/XOFF
- 9600 baud
- a serial connector available for the Meridian MAX
- no parity
- 8 data bits
- 1 stop bit

Chapter 3: Hardware upgrades

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 item warranted.

While the utmost care has been taken to ensure that the procedures described in this NTP 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 NTP. If you find such a condition, inform your dealer or Nortel service representative of the problem.

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.

Note: All upgrades and replacements must be performed by qualified technicians.

Hardware platforms

The type of Meridian MAX 9 hardware platform you use determines the features available to you. Features are common to all hardware platforms unless otherwise specified. Table 3-1 lists the available hardware platforms and their hardware composition.

Note: Meridian MAX 9 does not support the SEE hardware platform.

Table 3-1
Meridian MAX 9 platform compositions

System type		CPU	Mass Storage Unit (MSU)	
Abbreviation	**Module type**	**Card type**	**Hard drive**	**Cassette drive**
SNN	Single	MVME167-34	1 Gbyte	600 Mbyte
SNN-E	Single	MVME177-005	2 Gbyte	600 Mbyte
IPE	IPE	SMM167	180 Mbyte, or 240 Mbyte*	155 Mbyte or 600 Mbyte
IPE-E	IPE	SMM167	1 Gbyte	600 Mbyte

***** The 240 Mbyte hard disk is configured and recognized by the software as a 180 Mbyte hard disk.

Meridian MAX Application Module (SNN/SNN-E) overview

Table 3-2 lists the equipment required to install a Meridian MAX Application Module. The application module applies to the SNN/SNN-E platforms. For part order numbers, refer to the *Meridian MAX 9 Installation Guide* (NTP 553-4001-111) "Field replaceable parts" chapter.

Table 3-2
Meridian MAX Application Module installation equipment and material list

Equipment	Contents
Meridian MAX 9 SNN/SNN-E	Motorola MVME712M transition card Motorola P2 adapter board 1 Gbyte Seagate ST31230N hard disk drive (SNN only) 1 Gbyte Seagate ST11200N hard disk drive (SNN only) 2 Gbyte Seagate ST32171N hard disk drive (SNN-E only) 2 Gbyte Seagate ST32430N hard disk drive (SNN-E only) 600 Mbyte TEAC MT-2ST/F5OB-413 cassette drive Motorola MVME167-34 single board computer with 33 MHz M68040 CPU (SNN only) Motorola MVME177-005 single board computer with 50 MHz MC68060 CPU (SNN-E only) Motorola NT6D51AA transition card (maximum of 5) Motorola MVME332XTS eight-channel asynchronous I/O board (maximum of 5) Motorola MVME332XT eight-channel asynchronous I/O board (maximum of 5) Mass storage unit (MSU) containing disk and tape drives AC or DC power supply External single-port 50-position active SCSI terminator (SNN-E only) External single-port 50-position passive SCSI terminator (SNN only)

—continued—

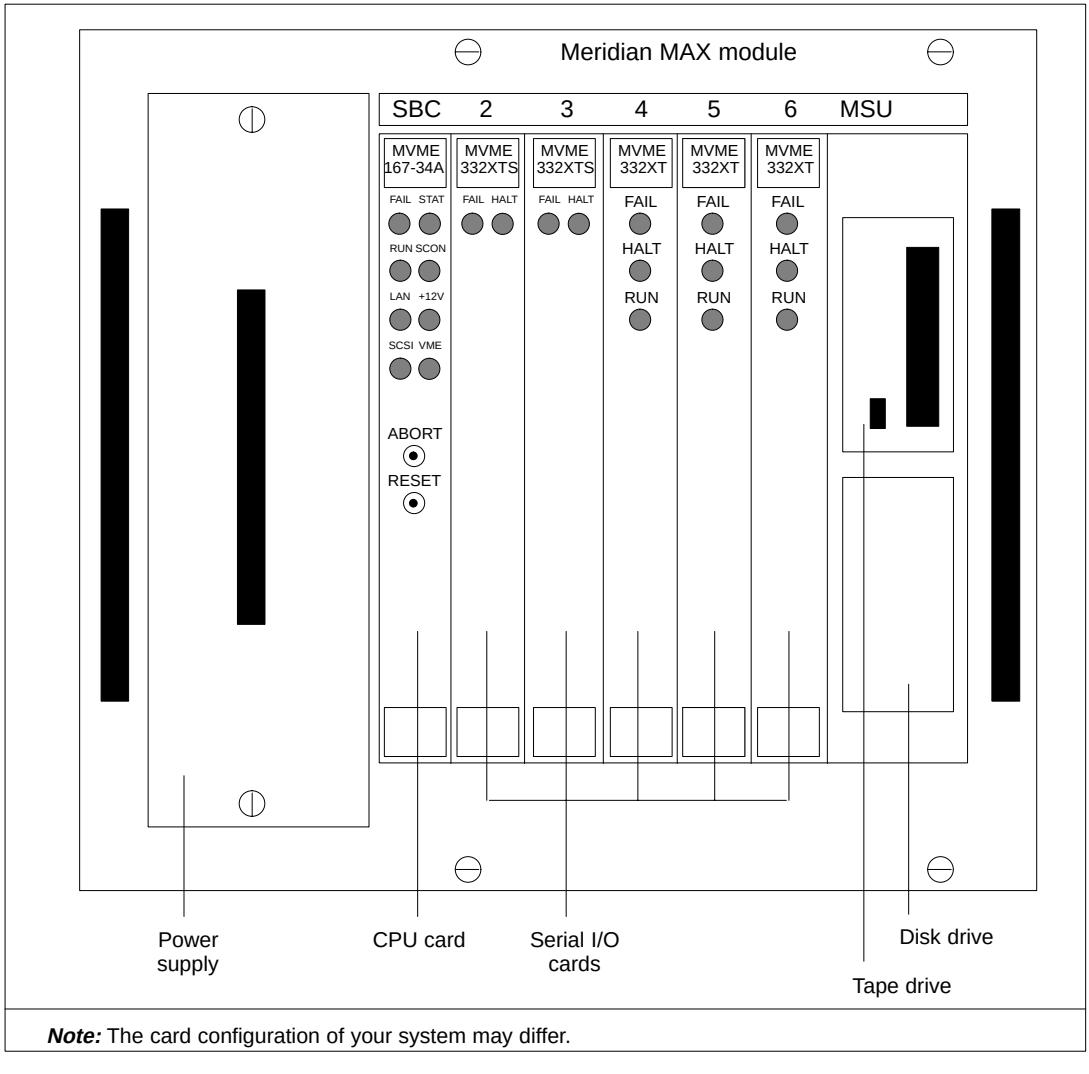
Table 3-2 (continued)
Meridian MAX Application Module installation equipment and material list

Equipment	Contents
Cables	Meridian MAX High-Speed Link (HSL) cable (NT8D93Ax for XSDI on the Meridian 1 and NT7D58Ax for SDI, QSDI, and MSDL on the Meridian SL-1) Meridian MAX Load Management Link (LML) cable (NT8D93Ax for XSDI on the Meridian 1 and NT7D58Ax for SDI, QSDI, and MSDL on the Meridian SL-1) 3 Multiport assemblies (NT8D96AE) for each MVME332XTS/XT Asynchronous Communication controller
Software	Meridian MAX Application Software (1 cassette) Motorola UNIX Operating System R3V8 (1 cassette) Meridian Terminal Emulator (MTE) 5.32 or lower for DOS if using personal computers as workstations (optional) Meridian Terminal Emulator (MTE) for Windows if using personal computers as workstations. This may be Version 6, 7, 8, or 9 (optional) Reflection 4+ version 3.0 for DOS (or higher) if using personal computers as workstations (customer provided)
Documentation	P0881392 *Meridian MAX 9 Supervisor's User Guide* P0853414 *Meridian MAX 8 MSI/MEI Protocol Reference Guide* P0881398 *MTE 9 User Guide* 553-4001-210 *Meridian MAX 9 Upgrade Guide* (P0881397) A0662798 (includes the following set of NTPs): 553-4001-111 *Meridian MAX 9 Installation Guide* 553-4001-811 *Meridian MAX 9 Maintenance and Diagnostics Guide* 553-3201-200 *Application Equipment Module Installation Guide*
Supplies	Minimum of 3 blank 600 Mbyte data cassette tapes
—end—	

Figure 3-1 shows a Meridian MAX Application Module configured for the SNN/SNN-E hardware platform.

Note: The label on the CPU card appears as “MVME 167-34A or MVME 167-34B” for an SNN, and “MVME 177-005” for an SNN-E.

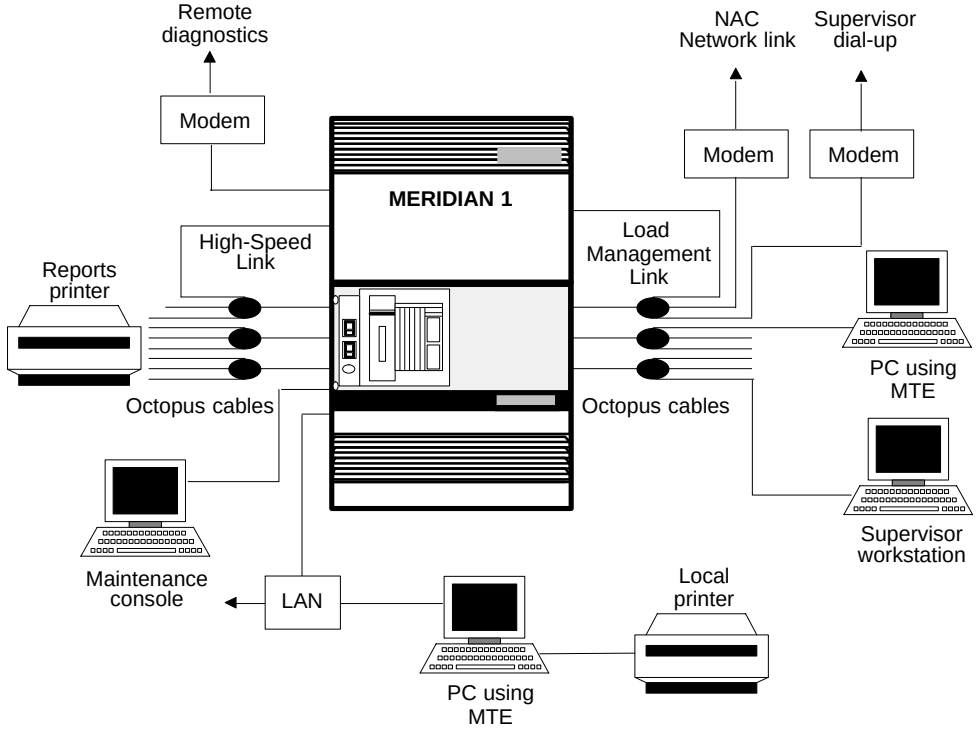
Figure 3-1
Meridian MAX Application Module (SNN system)



Note: The card configuration of your system may differ.

Figure 3-2 shows a simplified overview of the hardware layout for a Meridian MAX installation. These figures are intended to show you how the equipment is interconnected. The actual layout of your site may differ. See the "Site layout" section of the "Site preparation" chapter for details.

Figure 3-2
Meridian MAX application module installation—single module system

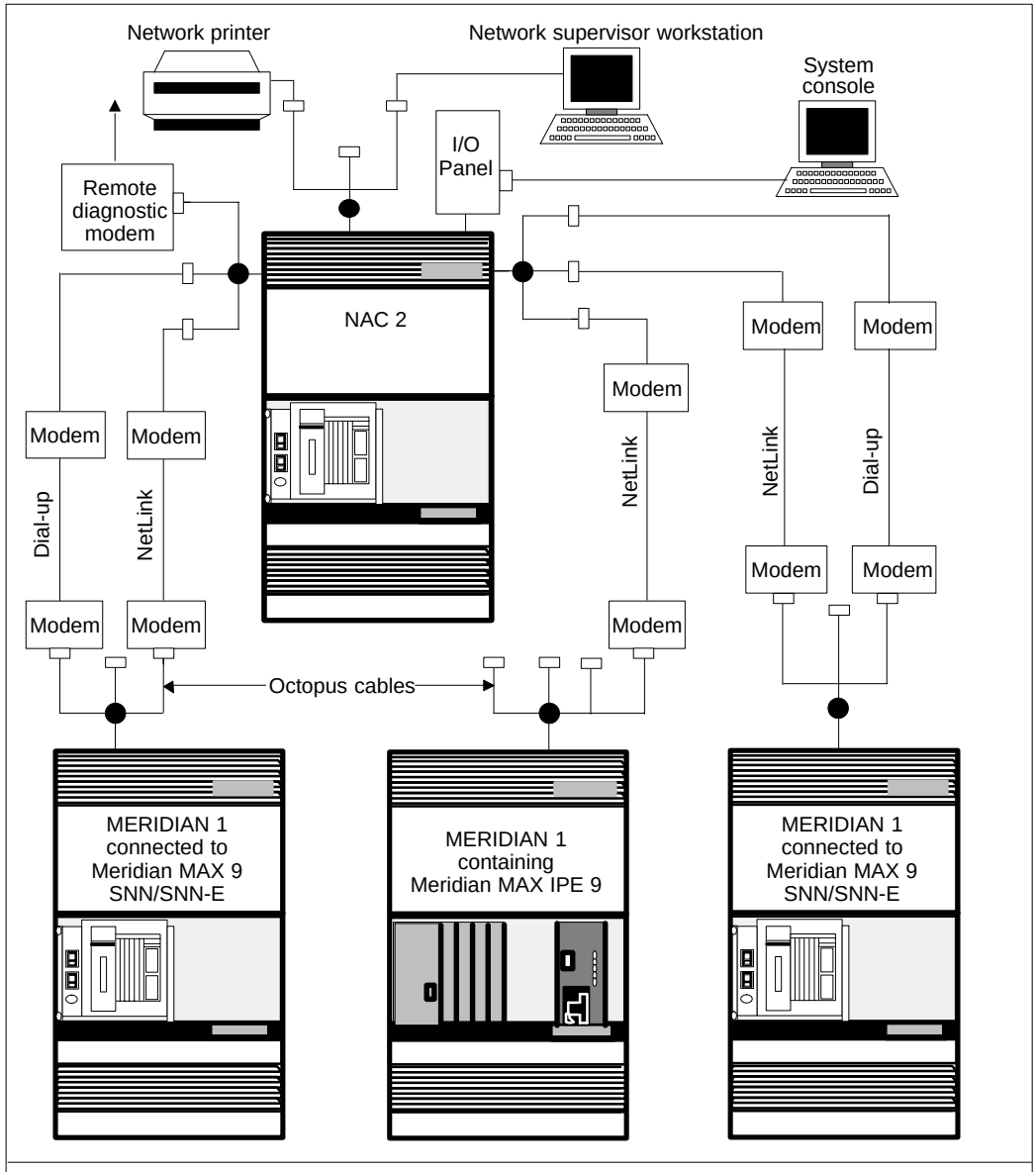


This column contains a Meridian 1 switch on the top shelf and a Meridian MAX single module on the first shelf.

For more information on the configurations available, refer to the "Capacities" section in the "Site preparation" chapter.

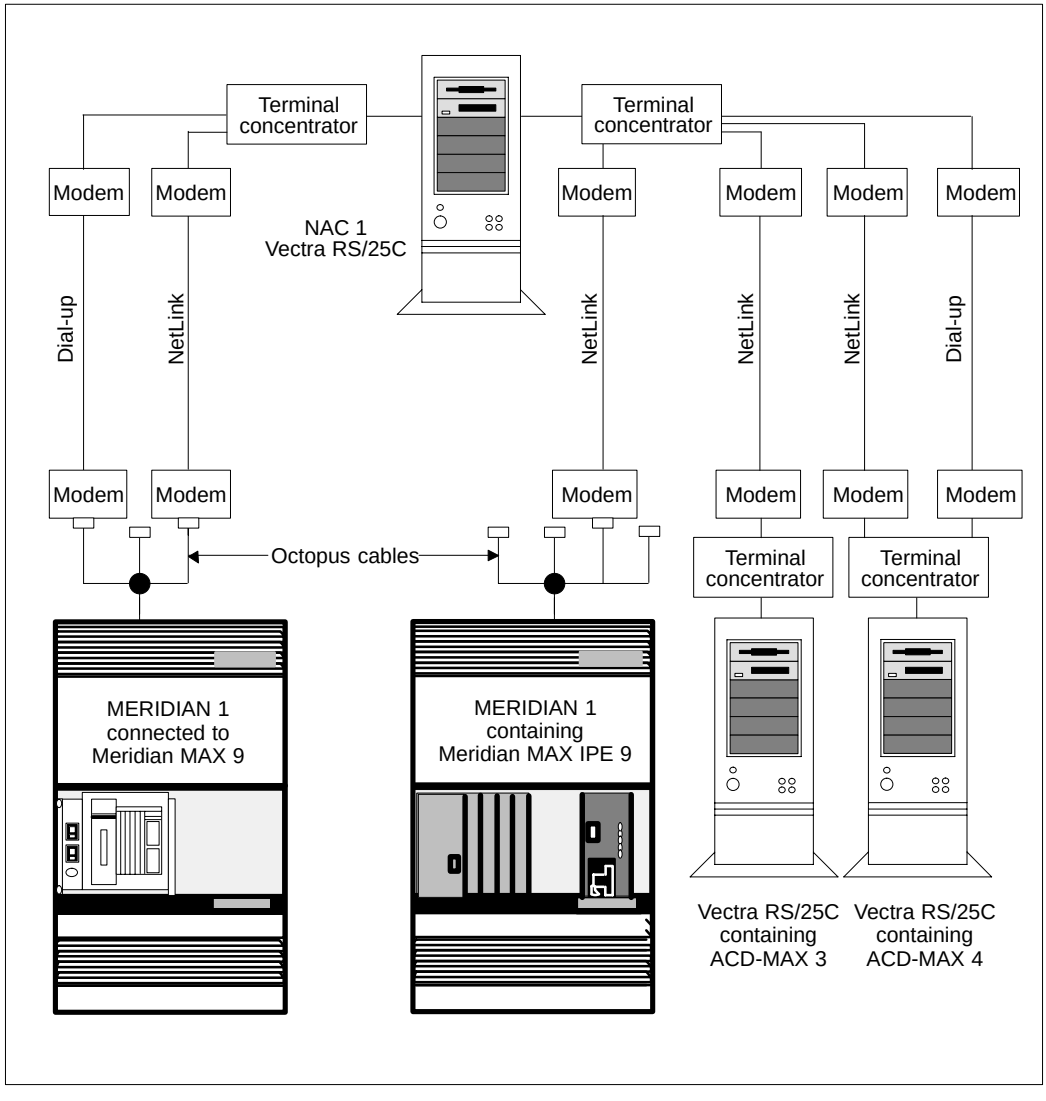
Note: The High-Speed Link is connected to Card 2, Conn 1A for an SNN/SNN-E system.

Figure 3-3
NAC 2 network connectivity overview sample



Note: The NAC 2 module can also be in a stand-alone AEM module.

Figure 3-4
NAC 1 network connectivity overview sample



Application module (SNN/SNN-E) hardware upgrades

CAUTION
Risk of data corruption

If installing or upgrading an Application Module (AM) in an existing Application Equipment Module (AEM), ensure each AM is powered down before beginning an installation or upgrade. Failure to power down each AM may cause unpredictable results.

If your upgrade is performed on an existing system, follow the instructions contained in the "Meridian MAX power-down procedure" chapter.

Table 3-3 provides a list of systems that can be upgraded to an SNN/SNN-E platform.

Table 3-3
Possible upgrade paths

Original system	Upgrade platform
Meridian MAX 3 or 4 single-module system	SNN-E, SNN
Meridian MAX 3 or 4 dual-module system	SNN-E, SNN
Meridian MAX 5 or 6 SEE system	SNN-E, SNN
Meridian MAX 4.6, 5, 6, 7, 8, or 9 IPE system	SNN-E, SNN
Meridian MAX 5, 6, 7, 8, or 9 SNN system	SNN-E

Choosing an SNN/SNN-E hardware upgrade procedure

Table 3-4 lists the hardware upgrade procedure to follow depending on your hardware.

Table 3-4
Choosing a hardware upgrade procedure

If your current system is a	and you want to upgrade to	follow this procedure
Meridian MAX 3 or 4 single-module system	Meridian MAX 9 SNN/SNN-E	Procedure 3-1 SNN/SNN-E upgrade
Meridian MAX 4.6, 5, 6, 7, 8, or 9 IPE, or Meridian MAX 8 or 9 IPE-E	Meridian MAX 9 SNN/SNN-E	Procedure 3-1 SNN/SNN-E upgrade
Meridian MAX 5 or 6 SEE	Meridian MAX 9 SNN/SNN-E	Procedure 3-1 SNN/SNN-E upgrade
Meridian MAX 3 or 4 dual-module system	Meridian MAX 9 SNN/SNN-E	Procedure 3-2 Dual module upgrade
Meridian MAX SNN	Meridian MAX 9 SNN-E	Procedure 3-3 SNN-E upgrade

Procedure 3-1 SNN/SNN-E upgrade

Follow Procedure 3-1 to upgrade these systems to a Meridian MAX 9 SNN/SNN-E:

- Meridian MAX 3 or 4 single-module system
- Meridian MAX 4.6, 5, 6, 7, 8, or 9 IPE, or Meridian MAX 8 or 9 IPE-E
- Meridian MAX 5 or 6 SEE system

If you currently have an empty cage in your Application Equipment Module (AEM) for your SNN/SNN-E system, and you are planning to upgrade to CCR or Meridian Link, install the Meridian MAX 9 Application Module (AM) in the empty cage to avoid removing your original system.

If there is no available cage in the AEM, you need to obtain a new AEM in which to install either the existing AM after it is replaced or the new Meridian MAX 9 SNN/SNN-E.

Refer to the *Application Equipment Module Installation Guide* (NTP 553-3201-200) for more information on how to install the Application Equipment Module.

CAUTION
Risk of component damage
While handling components during your upgrade, ensure that you are grounded to the system using an approved ground strap. Failure to do so will result in damage to components.

Procedure 3-1
SNN/SNN-E upgrade

1 If you are not replacing your existing Application Module but installing your new SNN/SNN-E Application Module into an available slot in the AEM, go to Step 17.

2 Before installing your Meridian MAX 9 SNN/SNN-E Application Module, back up your historical data from your existing system to tape.

3 Remove the front and rear panels of the Application Equipment Module (AEM).

4 If you currently have a Meridian MAX IPE/IPE-E, proceed to Step 17.

5 Shut down your Meridian MAX and power off the Application Module (the power breakers are located at the left side of the AEM).

6 Remove the power supply from the existing Application Module.

Remove the two screws located at the top and bottom of the power supply faceplate. Gripping the handle at the front of the power supply faceplate, slowly slide the power supply out of the AM.

7 Remove the Mass Storage Unit (MSU) from the Application Module.

Remove the two screws located at the top and bottom of the MSU faceplate. Press up on the MSU's top latch while pressing down on the bottom latch. When enough pressure is applied, the MSU should slightly push itself out of the AM. Carefully slide the MSU out of the AM.

8 Remove the shielding panel at the rear of the AEM.

Loosen the four bayonet screws located at the four corners of the panel and lift it away from the AEM.

9 Remove the power monitor from the I/O panel and reinstall it onto the bracket at the base of the AEM.

Refer to the “Power monitor upgrades” section in this chapter for instructions on how to upgrade your power monitor.

10 Disconnect all external cables from the I/O panel.

11 At the back of the AEM, disconnect the interior portion of the I/O panel from the exterior portion of the I/O panel.

Remove the five raised spring-loaded screws connecting the interior portion of the I/O panel to the AEM. Move the interior I/O panel and its connected cables away from the exterior portion of the I/O panel.

12 Disconnect the exterior portion of the I/O panel from the AEM.

Remove the eight screws connecting the exterior portion of the I/O panel to the AEM, then lift the exterior portion of the I/O panel away from the AEM. Be careful not to drop any of the screws into the AEM.

13 Disconnect the NT7D55AA power cable at the rear of the AEM.

At the back of the column, locate the power cable running from socket J8. Disconnect this cable at the P3 or P4 socket, which can be found behind a metal plate behind the shelf’s main power circuit breakers. Generally, the first module’s power cable connects to the P3 socket and the second module’s power cable connects to the P4 socket.

14 Disconnect the NT7D52AA Power Sensor Cable at the rear of the AEM.

Locate the Power Sensor Cable (two thin wires, yellow and gray, with a small plug at the end). Disconnect it from the small black socket found at the top of the I/O connector panel, on the inside of the shelf.

It may be necessary to temporarily disconnect the cable NT8D46AC and the PDU cable to make it easier to locate the correct socket for disconnecting the Power Sensor Cable. Make sure that you restore these cables to their original sockets after you have unplugged the Power Sensor Cable.

15 Disconnect the ground wire from the terminal block.

The orange ground wire disconnects from the terminal block, located at the base of the AEM between the two Application Modules.

16 Remove the existing AM from the AM cage.

Loosen the four raised spring-loaded screws at the front of the AM and slowly pull the AM from the AEM. Be careful to make sure the cables and I/O panel do not drag through the interior of the AEM.

Go to Step 18.

17 Remove the front panel covering the AM cage.

Loosen the four screws at the front panel of the AM cage and remove the panel and attached cage from the AEM.

18 Install the new SNN/SNN-E Application Module into the AEM.

Align the AM with the guides at the top and bottom of the AM cage of the AEM and slowly slide the AM into the AEM. Be careful to make sure the cables and I/O panel are drawn through to the rear of the AEM as the AM is being inserted. Tighten the four screws at the front of the AM.

19 Connect the I/O panel to the I/O panel section at the rear of the AEM.

Place the I/O panel against the back of the I/O panel section. (Do not pull the I/O panel through the opening.) Line up the eight screw holes of the I/O panel with the eight screw holes on the frame of the AEM. Connect the I/O panel to the AEM using the eight screws.

20 Connect the NT7D55AA power cable at the rear of the AEM.

At the back of the column, locate the power cable running from socket J8. Connect this cable to the P3 or P4 socket, which can be found behind a metal plate behind the shelf's main power circuit breakers. Generally, the first module's power cable connects to the P3 socket and the second module's power cable connects to the P4 socket.

21 Connect the NT7D52AA Power Sensor Cable at the rear of the AEM.

Locate the Power Sensor Cable (two thin wires, yellow and grey, with a small plug at the end). Connect it to the power monitor located at the base of the AEM, between the two Application Modules.

It may be necessary to temporarily disconnect the cable NT8D46AC and the PDU cable to make it easier to locate the correct socket for connecting the Power Sensor Cable. Make sure that you restore these cables to their original sockets after you have plugged in the Power Sensor Cable.

22 Connect the ground wire to the terminal block.

The orange ground wire connects to the terminal block, located at the base of the AEM between the two Application Modules, using a lug connector.

23 Install the Application Module power supply. (If you have replaced a previous system, use the power supply from that system).

Gripping the handle at the front of the power supply faceplate, line up the power supply with the guides at the top and bottom of the power supply slot of the AM and slowly slide the power supply into the AM until the faceplate is flush with the front of the AM. Tighten the two screws located at the top and bottom of the power supply faceplate.

24 Install the Meridian MAX 9 SNN/SNN-E Mass Storage Unit (MSU).

Carefully align the unit with the guides at the top and bottom of the AM and slide the unit into the card cage until the faceplate is flush with the front of the AM. Tighten the two screws at the top and bottom of the MSU faceplate.

If you are not replacing your existing Application Module but installing your new SNN/SNN-E Application Module into an available slot in the AEM, go to Step 26.

25 If your previous Meridian MAX was contained in an Application Module, remove your MVME332XTS/XT cards from your previous Meridian MAX system.

Remove the top and bottom screws that keep the card in place. Press up on the card's top release lever while pressing down on the bottom release lever. When enough pressure is applied, the card should slightly push itself out of the card slot. Carefully slide the card out of the card slot. Repeat this step for each card.

26 Remove the front cover of each card slot (moving from left to right, starting at Slot 2) from the Meridian MAX 9 SNN/SNN-E system Application Module.

Remove the top and bottom screws of each slot panel and lift the panel away.

27 Verify the switch settings of each MVME332XTS/XT card whether the cards are new or removed from your previous system. The switch settings are dependent on the slot placement of each card.

Refer to the "MVME332XTS and MVME332XT eight-channel asynchronous boards" section in this chapter for switch setting information.

28 Install your MVME332XTS/XT cards into your Meridian MAX 9 SNN/SNN-E.

Refer to the "Adding MVME332XTS/XT cards to a Meridian MAX" section in this chapter for more information on the installation of MVME332XTS/XT cards.

29 Install your MVME167-34 CPU card into your Meridian MAX 9 SNN or the MVME177-005 CPU card in your Meridian MAX 9 SNN-E.

Carefully align the CPU card with the guides at the top and bottom of the SBC card slot. Slide the card into the cage until the card is flush with the front of the AM. Press firmly on the screw at the center of the faceplate to ensure proper seating. Tighten the screws to keep the card in place.

30 Power on your Application Module.

The breakers are located at the left of the AEM.

31 Configure the CPU card.

Refer to the “Configuring the CPU card” section in this chapter for instructions on how to configure the MVME167-34 or MVME177-005 card.

32 Install the Meridian MAX 9 SNN/SNN-E software and reinstall the historical database.

Refer to the “Software upgrades and reinstallations” chapter, “Upgrading to Meridian MAX 9” section for information on software and database installation.

33 Reconnect all external cables to the new I/O panel.

Procedure 3-2 dual module upgrade

Follow Procedure 3-2 to upgrade a Meridian MAX 3 or 4 dual-module to a Meridian MAX 9 SNN/SNN-E. You can install the Meridian MAX 9 SNN/SNN-E in either module of the Application Equipment Module (AEM).

> ***Note:*** The first portion of this procedure specifies the second module of your dual-module system for the benefit of those who are using the remains of their system to upgrade to CCR or Meridian Link. If you are not planning such an upgrade, the steps referencing the second module apply equally if you are installing your Meridian MAX 9 into the first module of the AEM.

If you are planning to upgrade your Meridian MAX to a Meridian MAX 9 SNN/SNN-E and upgrading what remains of your current system to support Customer Controlled Routing (CCR) or Meridian Link, install the Meridian MAX 9 AM in the AM cage where the second module of your dual-module system currently resides.

CAUTION
Risk of component damage
While handling components during your upgrade, ensure that you are grounded to the system using an approved ground strap. Failure to do so will result in damage to components.

Procedure 3-2
Dual module upgrade

1 Before installing your Meridian MAX 9 SNN/SNN-E Application Module, back up your historical data to tape.

2 Remove the front and rear panels of the Application Equipment Module (AEM).

3 Shut down your existing Meridian MAX and power off the Application Module (the power breakers are located at the left side of the AEM).

4 Remove the power supply from the existing Application Module residing in the second module of the AEM.

Remove the two screws located at the top and bottom of the power supply faceplate. Gripping the handle at the front of the power supply faceplate, slowly slide the power supply out of the AM.

5 Remove the Mass Storage Unit (MSU) from the existing Application Module residing in the second module of the AEM.

Remove the two screws located at the top and bottom of the MSU faceplate. Press up on the MSU's top latch while pressing down on the bottom latch. When enough pressure is applied, the MSU should slightly push itself out of the AM. Carefully slide the MSU out of the AM.

6 Remove the shielding panel at the rear of the AEM.

Loosen the four bayonet screws located at the four corners of the panel and lift away from the AEM.

7 Disconnect all external cables running from the Application Module, residing in the second module of the AEM, to the I/O panel located on the frame of the AEM.

8 Remove the power monitor from the I/O panel and reinstall it onto the bracket at the base of the AEM.

Refer to the "Power monitor upgrades" section in this chapter for instructions on how to upgrade your power monitor.

9 At the rear of the AEM, disconnect the interior portion of the I/O panel from the exterior portion of the I/O panel.

Remove the five raised spring-loaded screws connecting the interior portion of the I/O panel to the AEM. Move the interior I/O panel and its connected cables away from the exterior portion of the I/O panel.

10 Disconnect the exterior portion of the I/O panel from the AEM.

Remove the eight screws connecting the exterior portion of the I/O panel to the AEM, then lift the exterior portion of the I/O panel away from the AEM. Be careful to make sure the cables and I/O panel do not drag through the interior of the AEM.

11 Disconnect the NT7D55AA power cable at the rear of the AEM.

At the back of the column, locate the power cable running from socket J8. Disconnect this cable at the P3 or P4 socket, which can be found behind a metal plate behind the shelf's main power circuit breakers. Generally, the first module's power cable connects to the P3 socket and the second module's power cable connects to the P4 socket.

12 Disconnect the NT7D52AA Power Sensor Cable at the rear of the AEM.

Locate the Power Sensor Cable (two thin wires, yellow and gray, with a small plug at the end). Disconnect it from the small black socket found at the top of the I/O connector panel, on the inside of the shelf.

It may be necessary to temporarily disconnect the cable NT8D46AC and the PDU cable to make it easier to locate the correct socket for disconnecting the Power Sensor Cable. Make sure that you restore these cables to their original sockets after you have unplugged the Power Sensor Cable.

13 Disconnect the ground wire from the terminal block.

The orange ground wire disconnects from the terminal block located at the base of the AEM between the two Application Modules.

14 Remove the existing Application Module from the second module of the AEM.

Loosen the four raised spring-loaded screws at the front of the AM and slowly pull the AM from the AEM. Be careful to make sure the cables and I/O panel do not drag through the interior of the AM cage.

15 Install the new SNN/SNN-E Application Module into the AEM.

Align the AM with the guides at the top and bottom of the AM cage of the AEM and slowly slide the AM into the AEM. Be careful to make sure the cables and I/O panel are drawn through to the rear of the AEM as the AM is being inserted. Tighten the four screws at the front of the AM.

16 Connect the I/O panel to the I/O panel section at the rear of the AEM.

Line up the eight screw holes of the I/O panel with the eight screw holes on the frame of the AEM. Connect the I/O panel to the AEM using the eight screws.

17 Connect the NT7D55AA power cable at the rear of the AEM.

At the back of the column, locate the power cable running from socket J8. Connect this cable to the P3 or P4 socket, which can be found behind a metal plate behind the shelf's main power circuit breakers. Generally, the first module's power cable connects to the P3 socket and the second module's power cable connects to the P4 socket.

18 Connect the NT7D52AA Power Sensor Cable at the rear of the AEM.

Locate the Power Sensor Cable (two thin wires, yellow and gray, with a small plug at the end). Connect it to the power monitor located at the base of the AEM, between the two Application Modules.

It may be necessary to temporarily disconnect the cable NT8D46AC and the PDU cable to make it easier to locate the correct socket for connecting the Power Sensor Cable. Make sure that you restore these cables to their original sockets after you have plugged in the Power Sensor Cable.

19 Connect the ground wire to the terminal block.

The orange ground wire connects to the terminal block, located at the base of the AEM between the two Application Modules, using a lug connector.

20 Install the Application Module power supply you have removed from the Application Module that resided in the second module of the AEM.

Gripping the handle at the front of the power supply faceplate, line up the power supply with the guides at the top and bottom of the power supply slot of the AM and slowly slide the power supply into the AM until the faceplate is flush with the front of the AM. Tighten the two screws located at the top and bottom of the power supply faceplate.

21 Install the Meridian MAX 9 SNN/SNN-E Mass Storage Unit (MSU).

Carefully align the unit with the guides at the top and bottom of the AM and slide the unit into the card cage until the faceplate is flush with the front of the AM. Tighten the two screws at the top and bottom of the MSU faceplate.

If you are not replacing your existing Application Module but installing your new SNN/SNN-E Application Module into the AEM, go to Step 23.

22 Remove your MVME332XTS/XT cards from your previous Meridian MAX.

Remove the top and bottom screws that keep the card in place. Press up on the card's top release lever while pressing down on the bottom release lever. When enough pressure is applied, the card should slightly push itself out of the card slot. Carefully slide the card out of the card slot. Repeat this step for each card.

23 Remove the front cover of each card slot (moving from left to right, starting at Slot 2) from the Meridian MAX 9 SNN/SNN-E Application Module.

Remove the top and bottom screws of each slot panel and lift the panel away.

24 Verify the switch settings of each MVME332XTS/XT card whether the cards are new or removed from your previous system.

Refer to the “MVME332XTS and MVME332XT eight-channel asynchronous boards” section of this chapter for switch setting information.

25 Install your MVME332XTS/XT cards into your Meridian MAX 9 SNN/SNN-E.

Refer to the “Adding MVME332XTS/XT cards to a Meridian MAX” section in this chapter for more information on the installation of MVME332XTS/XT cards.

26 Install the MVME167-34 CPU card into your Meridian MAX 9 SNN, or the MVME177-005 CPU card in your Meridian MAX 9 SNN-E.

Carefully align the CPU card with the guides at the top and bottom of the SBC card slot. Slide the card into the cage until the card is flush with the front of the AM. Tighten the screws to keep the card in place.

27 Power on your Application Module.

The breakers are located at the left of the AEM.

28 Configure the CPU card.

Refer to the “Configuring the CPU card” section of this chapter for instructions on how to configure the MVME167-34 card or the MVME 177-005 card.

29 Install the Meridian MAX 9 SNN/SNN-E software and reinstall the historical database.

Refer to the “Software upgrades and reinstallations” chapter, “Upgrading to Meridian MAX 9” section, for information on software and database installation.

30 Reconnect all external cables to the new I/O panel.

Procedure 3-3 SNN-E upgrade

Follow Procedure 3-3 to upgrade a Meridian MAX SNN to a Meridian MAX SNN-E.

Procedure 3-3
SNN-E upgrade

1. Before installing your Meridian MAX 9 SNN-E Application Module, back up your historical data from your existing system to tape.
2. Remove the front and rear panels of the Application Equipment Module (AEM).
3. Shut down your Meridian MAX and power off the Application Module (the power breakers are located at the left side of the AEM).
4. Remove the Mass Storage Unit (MSU) from the Application Module.

   Remove the two screws located at the top and bottom of the MSU faceplate. Press up on the MSU's top latch while pressing down on the bottom latch. When enough pressure is applied, the MSU should slightly push itself out of the AM. Carefully slide the MSU out of the AM.
5. Install the Mass Storage Unit (MSU) NT7D67EA.

   Carefully align the unit with the guides at the top and bottom of the AM. Slide the unit into the card cage until the faceplate is flush with the front of the AM. Tighten the two screws at the top and bottom of the MSU faceplate.
6. Remove the MVME167-34 CPU card and replace it with the MVME177-005 CPU card.

   Carefully align the CPU card with the guides at the top and bottom of the SBC card slot. Slide the card into the cage until the card is flush with the front of the AM. Press firmly on the screw at the center of the faceplate to ensure proper seating. Tighten the screws to keep the card in place.
7. Loosen the four thumb screws at the front of the module.
8. Slowly pull the AM module out about four inches. Do not pull it out entirely.
9. Locate the passive SCSI terminator on the transition board at the back of the MVME712M card.

   The passive SCSI terminator is manufactured by AMP.
10. To unlock the terminator, push the "Bail Locks" back toward the faceplate of the MVME712M transition board.
11. Pull the terminator straight back to remove it from the connector.

12 Press the active terminator into the connector location where the passive terminator was removed.

13 Lift the Bail Locks up to lock the terminator into place.

14 Slide the module back to its previous position.

15 Tighten the four thumb screws.

16 Power on your Application Module.

The breakers are located at the left of the AEM.

17 Configure the CPU card.

Refer to the “Configuring the CPU card” section in this chapter for instructions on how to configure the MVME167-34 or MVME177-005 card.

18 Install the Meridian MAX 9 SNN/SNN-E software and reinstall the historical database.

Refer to the “Software upgrades and reinstallations” chapter, “Upgrading to Meridian MAX 9” section for information on software and database installation.

Power monitor upgrades

Before beginning this procedure, use the Power Monitor Mounting Bracket Kit, NT7D18KA (A0405826) to ensure that the Meridian MAX software and the Application Modules (AM) contained in the Application Equipment Module (AEM) have been properly shut down.

Before beginning the power monitor upgrades, refer to Procedure 3-1 and Procedure 3-2.

CAUTION
Risk of component damage
While handling components during your upgrade, ensure that you are grounded to the system using an approved ground strap. Failure to do so will result in damage to components.

Procedure 3-4
Performing power monitor upgrades

1 Remove the front and rear covers of the pedestal column located at the base of the column.

Remove the two screws located at the upper left and right hand corners of the pedestal cover.

2 Power off the main breaker at the rear of the pedestal.

Flip the breaker down to the off position.

3 Loosen the raised spring-loaded screws located at the front of each AM (four screws per piece).

4 Slide the AM(s) forward two inches.

Grip the AM by the handles located on either side and pull forward slowly. Pulling the module forward too far could result in disrupted connections at the I/O panel by stretching the interconnect cables.

5 At the bottom center of the AEM, remove the four hex head screws securing the terminal block to the current mounting bracket.

6 Move the terminal to one side. Be careful not to disrupt the logic return connections.

7 Remove the current mounting bracket.

Remove the two hex head screws and one hex head bolt.

8 Secure the new mounting bracket to the back center of the AEM.

The new mounting bracket is secured in the same position as your previous bracket using two hex head screws and one hex head bolt.

9 Remount the existing terminal block to the new bracket.

Secure the existing terminal block to the new bracket using two hex head screws.

10 Connect the power monitor capacitor to the new bracket.

Secure one end of the capacitor to the terminal block and the other to the mounting bracket. The connection on the mounting bracket is marked logic return.

11 Remove the power monitor board from the I/O panel.

The power monitor board is located on the inside upper portion of the I/O panel located at the right side of the AEM. Remove the screws located at each corner of the board, being careful not to drop the screws into the AEM. Pull the board away from the I/O panel, being careful not to disrupt any of the connections.

12 Mount the power monitor board onto the new mounting bracket.

Holding the power monitor board by the edges, mount the board onto the four nylon standoffs located on the mounting bracket. Ensure the boards is mounted securely.

13 Connect the power cord and the power sense cable to the power monitor board.

The power cord is a grey ribbon cable to be connected at J1 on the power monitor board. The power sense cable is a yellow and orange cable connected at J2.

Connection J1 on the power monitor board should be facing towards the front of the AEM.

14 Reroute or replace the power monitor cables if necessary.

15 Reinstall the AM(s).

Grip the AM by the handles located on either side and push the module(s) into the AEM until secure. Tighten the four raised spring-loaded screws.

16 Power on the main breaker at the rear of the pedestal.

Flip the breaker up to the on position.

17 Check the circuit breaker at the front of the pedestal.

Ensure it is in the on position.

18 Replace the front and rear covers of the pedestal column located at the base of the column.

Replace the two screws located at the upper left and right hand corners of the pedestal cover.

19 Return to Procedure 3-1 or Procedure 3-2.

MVME332XTS and MVME332XT eight-channel asynchronous boards

The MVME332XTS and MVME332XT eight-channel asynchronous boards connect the Meridian MAX module with all external devices through the NT6D51AA transition card, interconnect and external cables. Each MVME332XTS/XT eight-channel asynchronous board can communicate with a maximum of eight devices.

There are five different Meridian MAX configurations for the MVME332XTS/XT card:

- single module with one MVME332XTS/XT card (8 ports)
- single module with two MVME332XTS/XT cards (16 ports)
- single module with three MVME332XTS/XT cards (24 ports)
- single module with four MVME332XTS/XT cards (32 ports)
- single module with five MVME332XTS/XT cards (40 ports)

Each board in a Meridian MAX module has two banks of switches: a bank of eight and a bank of four. The set of eight switches has a unique setting for each card. Table 3-5 shows the settings for this bank of switches.

For the bank of four switches, the settings on all cards are the same: 1 and 2 are off, and 3 and 4 are on.

Refer to Figure 3-5 for the switch locations on the MVME332XTS/XT card.

Table 3-5
MVME332XTS/XT eight-channel asynchronous board's eight-switch bank settings

AM Card Slot	Switch Setting							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
2	ON	OFF	OFF	OFF	OFF	ON	ON	ON
3	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
4	ON	OFF	OFF	OFF	OFF	ON	OFF	ON
5	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
6	ON	OFF	OFF	OFF	OFF	OFF	ON	ON

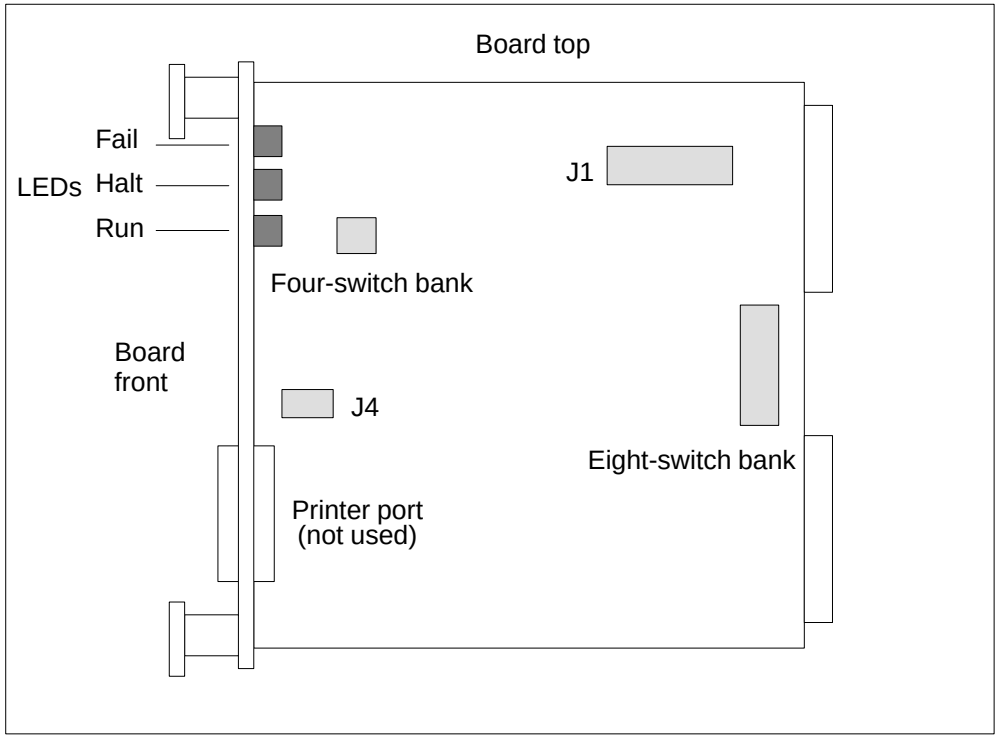
Use jumpers to connect the following pins:

- On J1: 1 to 2, 5 to 6, 7 to 9, 8 to 10, 11 to 12, and 15 to 17
- On J4: jumper 1 to 2

There are two light-emitting diodes (LEDs) on the faceplate of the MVME332XTS card and three LEDs on the faceplate of the MVME332XT card. The LEDs show the following conditions:

- ***FAIL*** This red LED lights when a hardware failure has occurred on the card.
- ***HALT*** This red LED lights steadily when the processor has stopped.
- ***RUN*** This green LED lights almost continuously but flickers every few seconds when applications are running normally. This indicator only appears on the MVME332XT card.

Figure 3-5
MVME332XTS/XT eight-channel asynchronous board



Note: The Run LED is available only on the MVME332XT board.

Adding MVME332XTS/XT cards to a Meridian MAX

Before inserting any additional cards into the Meridian MAX as detailed in Procedure 3-5, ensure that each card's switch settings match those given in Table 3-5 for a single-module system.

Procedure 3-5
Adding MVME332XTS/XT cards to a Meridian MAX

1 To add additional MVME332XTS/XT eight-channel asynchronous boards to Meridian MAX, remove the blank plates covering the empty card slots specified in Table 3-6.

Table 3-6
MVME332XTS/XT card slot placement

Number of cards	Number of ports	Slot placement
1	8	2
2	16	2, 3
3	24	2, 3, 4
4	32	2, 3, 4, 5
5	40	2, 3, 4, 5, 6

2 Take each new MVME332XTS/XT card from its packaging, check the switch settings, and carefully align it with the black plastic guides found along the top and bottom of the VME card cage. Keeping the new card level, slide the card into the card cage until the new card is flush with the face plate of the AM. Press firmly on the screw at the center of the faceplate to ensure proper seating.

If you are uncertain as to whether the card is in as far as it will go, simultaneously press up on the top latch while pressing down on the bottom latch. If the card pops forward a bit, then you know that the card was in as far as it could go.

3 Once the card is inserted into the card cage, use a screwdriver to tighten the top and bottom retaining screws to keep the card in place.

Tightening the screws while the card is not in as far as it can go could result in stripping the screws.

4 At the back of the AEM, connect the three multiport cables to the I/O connector panel. Use the appropriate port assignment table to determine which peripherals to connect to the new cables.

5 If no further hardware upgrades are to be performed, replace the AEM's back and front panels. Power up the AEM. The hardware upgrade is complete.

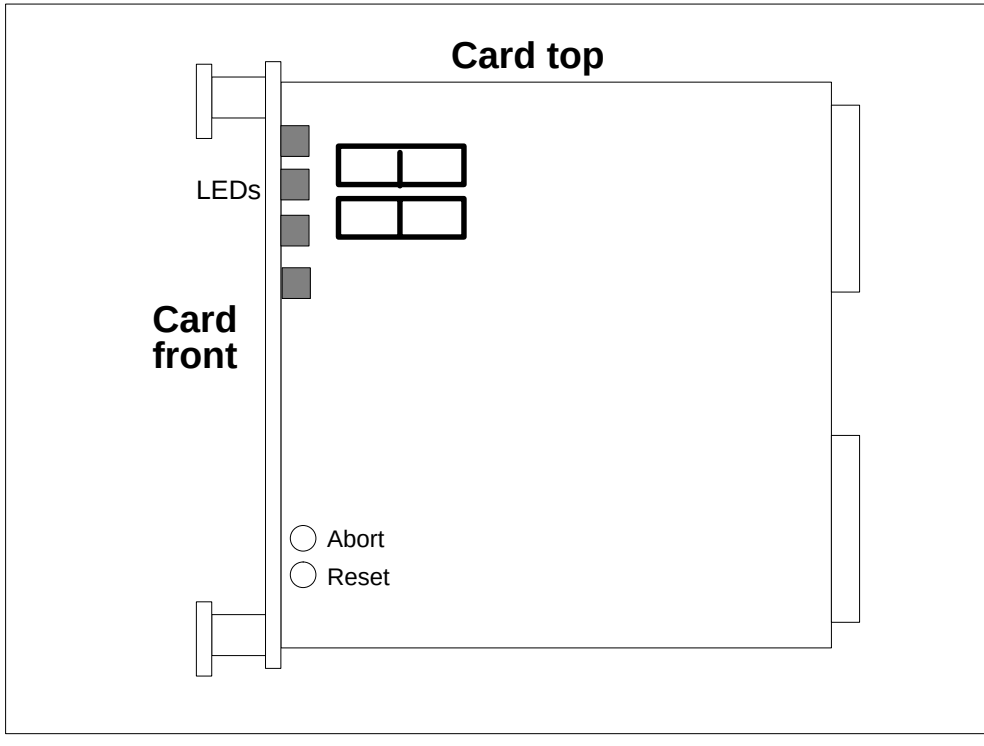
6 Perform an application upgrade to add the card.

To perform an application upgrade, refer to the "Software upgrades and reinstallations" chapter.

Configuring the CPU card

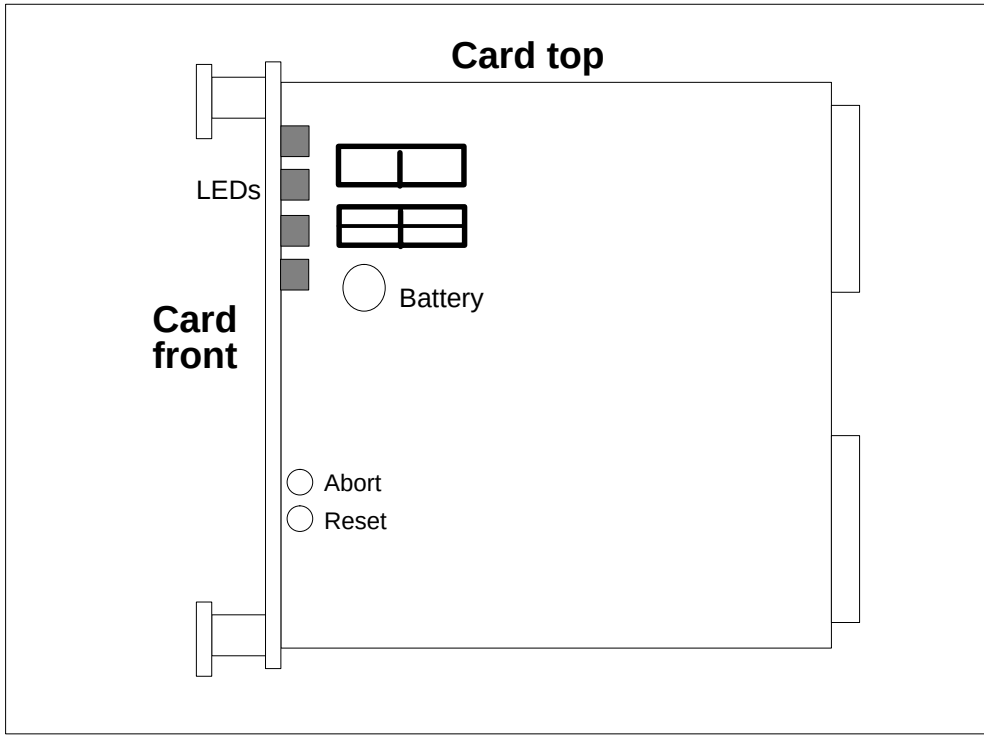
Once the upgrade or replacement is completed, follow Procedure 3-6 to configure the MVME167-34 card for a Meridian MAX 9 SNN or the MVME177-005 for a Meridian MAX 9 SNN-E.

Figure 3-6
MVME167-34 single board computer card



Note: If you change the CPU card, you must make the LAN aware of the card's Media Access Control address. This is done by "pinging" a known device on your LAN while the Meridian MAX is in product mode. LAN connections to the Meridian MAX may not work properly if this address is not known to the LAN. For more information on the ping process, refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), "LAN link diagnostic tools" chapter, "Ping" section.

Figure 3-7
MVME177-005 single board computer card



Procedure 3-6
Configuring the CPU card

1 If the Meridian MAX is already powered down, go to Step 4.

If the Meridian MAX is not powered down, shut down the Meridian MAX software.

Refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), “Maintenance and administration programs: system running” chapter, “Shut down the system” section, for instructions on shutting down your Meridian MAX system.

2 Secure the Meridian MAX 9 for power down.

Refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), “Maintenance and Administration programs: system shut down” chapter, “Restart and Power Down Utilities” section, “Secure the System for Power Down” subsection, for more information.

3 Power down your system by flipping the power switch located to the left of the AEM to the OFF position. Wait approximately 20 seconds.

4 Flip the power switch to the ON position.

The system displays the following at the maintenance console. (The CPU card being configured [MVME167 or MVME177] appears in the message instead of “xxx.”) Your system messages may differ.

```
Copyright Motorola Inc. 1988 – 1994, All Rights Reserved

MVMExxx Debugger/Diagnostics Release Version 2.2 – 01/14/94

COLD Start

Local Memory Found =xxxxxxx (&xxxxxxxx)
```

Note: (The “xxxxxxx (&xxxxxxxx)” will be 04000000 (&67108864) for SNN-E, 02000000 (&33554432) for SNN, and 01000000 (&16777216) for IPE/IPE-E.)

5 If your card was preset in the factory, go to Step 8.

If your card was not preset in the factory, the following message appears:

```
Autoboot in progress... To abort hit <BREAK>
```

6 Press the **{BREAK}** key.

Note: {F5} on the VT520 and VT420 is equivalent to the {BREAK} key.

```
––Break Detected––
```

The following menu may be shown. If it does not appear, go to Step 8.

```
1) Continue System Start Up

2) Select Alternate Boot Device

3) Go to System Debugger

4) Initiate Service Call

5) Display System Test Errors

6) Dump Memory to Tape

Enter Menu #:
```

7 Enter **3** to select the “Go to System Debugger” option.

8 The system displays one of the following prompts:

```
167–Bug>
```

```
177–Bug>
```

9 Enter **env** to configure the system environment.

The default values that appear when the system is powered on are in effect at this moment. They may differ if the card was configured at the factory or at the site. Regardless, only the following recommended values should be entered.

```
Bug or System environment [B/S] = ?
```

10 Enter **b** for bug.

The system displays the following prompt:

```
Field Service Menu Enable [Y/N] = ?
```

11 Enter **n** to reject the Field Service Menu.

The system displays the following prompt:

```
Remote Start Method Switch [G/M/B/N] = ?
```

12 Enter **b**.

The system displays the following prompt:

```
Probe System for Supported I/O controllers [Y/N] = ?
```

13 Enter **y** to probe the system for supported I/O controllers.

The system displays the following prompt:

```
Negate VMEbus SYSFAIL* Always [Y/N] ?
```

14 Enter **n** to reject the Negate VMEbus SYSFAIL* Always prompt.

The system displays the following prompt:

```
Local SCSI Bus Reset on Debugger Startup [Y/N] = ?
```

15 Enter **y** to start up the local SCSI bus reset on the debugger.

The system displays the following prompt:

```
Local SCSI Bus Negotiations Type [A/S/N]      = ?
```

16 Enter **a** to set the local SCSI bus negotiations type.

The system displays the following prompt:

```
Ignore CFGA Block on a Hard Disk Boot [Y/N]   = ?
```

17 Enter **y** to ignore the CFGA block on a hard disk boot.

The system displays the following prompt:

```
Auto Boot Enable [Y/N]  = ?
```

18 Enter **y** to enable the auto boot.

The system displays the following prompt:

```
Auto Boot at power–up only [Y/N] = ?
```

19 Enter **n** to disable auto boot at power-up only.

The system displays the following prompt:

```
Auto Boot Controller LUN = ?
```

20 To skip the following default prompts, go to Step 24.

To continue, using the following default prompts, enter **00**.

The system displays the following prompt:

```
Auto Boot Device LUN     = ?
```

21 Enter **00**.

The system displays the following prompt:

```
Auto Boot Abort Delay = ?
```

22 Enter **15**.

The system displays the following prompt:

```
Auto Boot Default String [NULL for an empty string] = ?
```

23 Press **{RETURN}**.

The system displays the following prompt:

```
ROM Boot Enable [Y/N] = ?
```

24 Enter a period (.).

The system displays the following prompt:

```
Update Non-Volatile RAM (Y/N) = ?
```

25 Enter **y**.

The system displays the following prompt:

```
Reset local System (CPU) (Y/N) = ?
```

26 Power down your system by flipping the power switch located to the left of the AEM to the OFF position. Wait about 20 seconds, then power on the system and install your Meridian MAX 9 software.

Meridian MAX 3 or 4 single-module upgrade to a CCR or Meridian Link system

If you have upgraded your existing Meridian MAX 3 or 4 single-module system to a Meridian MAX 9 SNN/SNN-E, you should have a number of system components remaining. You are now able to upgrade the remainder of your Meridian MAX 3 or 4 system to a Customer Controlled Routing (CCR) or Meridian Link system using Procedure 3-7.

If you currently have an empty cage in your AEM, your CCR or Meridian Link system can be installed there.

If there is no available cage in the AEM, you need to obtain a new AEM in which to install your CCR or Meridian Link system.

Refer to the *Application Equipment Module Installation Guide* (NTP 553-3201-200) to install the Application Equipment Module (AEM).

CAUTION
Risk of component damage
While handling components during your upgrade, ensure that you are grounded to the system using an approved ground strap. Failure to do so will result in damage to components.

Procedure 3-7
Performing a Meridian MAX 3 or 4 single-module upgrade to a CCR or Meridian Link system

1 Disconnect the interconnect cables between the NT6D51AA transition card to the immediate left of the MVME712AM transition card at the rear of the Application Module residing in the first module of the AEM.

Note which internal cables from the I/O panel connect to which ports on the NT7D51AA transition card.

2 Remove the NT6D51AA transition card from the AM.

Remove the top and bottom screws that keep the card in place. Gripping the card by the edges, carefully slide the card out of the card slot. Once the card is pulled clear of the AM, disconnect the VME ribbon cable from the other end of the NT6D51AA transition card.

3 Configure the MVME705B transition card.

Refer to the *Application Module Meridian Link and Customer Controlled Routing Diagnostic and Maintenance Guide* (NTP 553-3201-510), “Recovery/replacement procedures” chapter, for switch setting information on the MVME705B transition card.

4 Install the MVME705B transition card into the AM.

Reconnect the VME ribbon cable to the replacement MVME705B transition card. Carefully feed the ribbon cable into the card slot and slide the card into the AM until the faceplate of the card is flush with the front of the AM. Tighten the screws to keep the card in place.

5 Reconnect the interconnect cables to the proper connections on the MVME705B transition card.

These connections correspond to the equivalent connections on the NT6D51AA transition card.

6 Verify the switch settings of your MVME333-2 card (Meridian Link and CCR) and each MVME332XTS/XT card (CCR only) whether the cards are new or removed from your previous system.

Refer to the *Application Module Meridian Link and Customer Controlled Routing Diagnostic and Maintenance Guide* (NTP 553-3201-510), “Recovery/replacement procedures” chapter, for switch setting information on the MVME333-2 and MVME332XTS/XT cards.

7 Install your MVME333-2 card into your Application Module.

Carefully align the card with the guides at the top and bottom of Slot 2. Slide the card into the cage until the card is flush with the front of the AM. Tighten the screws to keep the card in place.

8 Install your MVME332XTS/XT card into your Application Module (CCR only).

Carefully align the card with the guides at the top and bottom of each slot. Slide each card into the cage until the card is flush with the front of the AM. Tighten the screws to keep the card in place.

9 Install your interconnect cables between the AM and the I/O panel.

Refer to the *Application Module Meridian Link and Customer Controlled Routing Installation and Upgrade Guide* (NTP 553-3201-210), “Cable requirements” chapter, for MVME333-2 and MVME332XTS/XT card cabling information.

10 Install the Application Module into the AEM.

Align the AM with the guides at the top and bottom of the AM cage of the AEM and slowly slide the AM into into the AEM. Be careful to make sure the cables and I/O panel are drawn through to the rear of the AEM. Tighten the four screws at the front of the AM.

11 Install your external cables on the I/O panel for connection to your peripheral devices such as your system console, SDI link, and ESDI link. Terminals and printers can also be connected (CCR only).

Refer to the *Meridian MAX 9 Installation Guide* (NTP 553-4001-111), “Hardware installation: Application Module” chapter, “Cables” section, for information on connecting your external cables.

12 Connect the ground wire to the terminal block.

The orange ground wire connects to the terminal block using a lug connector.

13 Install the Application Module power supply.

Gripping the handle at the front of the power supply faceplate, line up the power supply with the guides at the top and bottom of the power supply slot of the AM and slowly slide the power supply into the AM until the faceplate is flush with the front of the AM. Tighten the two screws located at the top and bottom of the power supply faceplate.

14 Power on your Application Module.

The breakers are located at the left of the AEM.

15 Install the CCR or Meridian Link system software.

Refer to the *Application Module Meridian Link and Customer Controlled Routing Installation and Upgrade Guide* (NTP 553-3201-210), “Application Module configuration and startup” chapter, for software installation instructions.

Meridian MAX 3 or 4 dual-module upgrade to a CCR or Meridian Link system

If you have upgraded your existing Meridian MAX 3 or 4 dual-module system to a Meridian MAX 9 SNN/SNN-E, you should have a number of system components remaining. You are now able to upgrade the remains of the first module of your Meridian MAX 3 or 4 system to a Customer Controlled Routing (CCR) or Meridian Link system using Procedure 3-8.

Note: The remainder of the second module of your dual-module system can be kept on-site for replacement parts.

CAUTION
Risk of component damage
While handling components during your upgrade, ensure that you are grounded to the system using an approved ground strap. Failure to do so will result in damage to components.

Procedure 3-8
Performing a Meridian MAX 3 or 4 dual-module upgrade to a CCR or Meridian Link system

1 Disconnect the interconnect cables between the NT6D51AA transition card to the immediate left of the MVME712AM transition card at the rear of the Application Module residing in the first module of the AEM.

Note which internal cables from the I/O panel connect to which ports on the NT7D51AA transition card.

2 Remove the NT6D51AA transition card from the Application Module residing in the first module of the AEM.

Remove the top and bottom screws that keep the card in place. Gripping the card by the edges, carefully slide the card out of the card slot. Once the card is pulled clear of the AM, disconnect the VME ribbon cable from the other end of the NT6D51AA transition card.

3 Configure the MVME705B transition card.

Refer to the *Application Module Meridian Link and Customer Controlled Routing Diagnostic and Maintenance Guide* (NTP 553-3201-510), “Recovery/replacement procedures” chapter, for switch setting information on the MVME705B transition card.

4 Install the MVME705B transition card into the Application Module residing in the first module of the AEM.

Reconnect the VME ribbon cable to the replacement MVME705B transition card. Carefully feed the ribbon cable into the card slot and slide the card into the AM until the faceplate of the card is flush with the front of the AM. Tighten the screws to keep the card in place.

5 Reconnect the interconnect cables to the proper connections on the MVME705B transition card.

These connections correspond to the equivalent connections on the NT6D51 transition card.

6 Verify the switch settings of your MVME333-2 card (Meridian Link and CCR) and each MVME332XTS/XT card (CCR only) whether the cards are new or removed from your previous system.

Refer to the *Application Module Meridian Link and Customer Controlled Routing Diagnostic and Maintenance Guide* (NTP 553-3201-510), "Recovery/replacement procedures" chapter, for switch setting information.

7 Install your MVME333-2 card into the Application Module residing in the first module of the AEM.

Carefully align the card with the guides at the top and bottom of Slot 2. Slide the card into the cage until the card is flush with the front of the AM. Tighten the screws to keep the card in place.

8 Install your MVME332XTS/XT card into your Application Module residing in the first module of the AEM (CCR only).

Carefully align the card with the guides at the top and bottom of each slot. Slide each card into the cage until the card is flush with the front of the AM. Tighten the screws to keep the card in place.

9 Install your interconnect cables between the AM and the I/O panel.

Refer to the *Meridian MAX 9 Installation Guide* (NTP 553-4001-111), "Hardware installation: Application Module" chapter, "Cables" section, for information on connecting your interconnect cables.

10 Install your external cables on the I/O panel for connection to your peripheral devices such as your system console, SDI link, and ESDI link. Terminals and printers can also be connected (CCR only).

Refer to the *Meridian MAX 9 Installation Guide* (NTP 553-4001-111), "Hardware installation: Application Module" chapter, "Cables" section, for information on connecting your external cables.

11 Power on your Application Module.

The breakers are located at the left of the AEM.

12 Install the CCR or Meridian Link system software.

Refer to the *Application Module Meridian Link and Customer Controlled Routing Installation and Upgrade Guide* (NTP 553-3201-210), "Application Module configuration and startup" chapter, for software installation instructions.

Meridian MAX IPE/IPE-E module hardware overview

The Meridian MAX IPE/IPE-E module is composed of the following parts:

- SMM167 CPU board
- CPU adapter board
- drive adapter board
- 1 Gbyte, 240 Mbyte, or 180 Mbyte hard disk drive
  (The IPE-E has a 1 Gbyte hard disk drive. The IPE has the 240 Mbyte or 180 Mbyte hard disk drive.)
- 600 Mbyte or 155 Mbyte cassette tape drive
  (The IPE-E has the 600 Mbyte tape drive. The IPE can use either tape drive.)
- module frame
- faceplate

There are four light-emitting diodes (LEDs) and two buttons on the Meridian MAX IPE/IPE-E faceplate shown in Figure 3-8.

The LEDs show the following conditions:

- ***PWR*** This green LED lights continuously, indicating power is running to the Meridian MAX IPE/IPE-E.
- ***RUN*** This yellow LED lights almost continuously but flickers when the system processor has stopped.
- ***SCSI (Small Computer System Interface)*** The intensity of this yellow 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.
- ***FAIL*** This red LED lights when a hardware failure has occurred on the CPU card. The LED also lights for a 7–10 minute duration when the SMM167 card on-board diagnostics is enabled during bootup.

CAUTION
Risk of system interruption
Do not press the abort or reset button while applications are running. Shut down the system software before pressing the abort or reset buttons. For more information, refer to the "Meridian MAX power-down procedure" chapter.

The buttons produce the following conditions and should not be pressed unless under the direction of Nortel support personnel:

- ***ABORT*** This button halts the Meridian MAX IPE/IPE-E.
- ***RESET*** This button reinitializes the Meridian MAX IPE/IPE-E. The system performs a self–test and then reboots.

Figure 3-8 shows an illustration of the front of the Meridian MAX IPE/IPE-E module containing a 600 Mbyte cassette tape drive. Figure 3-9 shows an illustration of the front of the Meridian MAX IPE module containing a 155 Mbyte cassette tape drive.

Note 1: The 600 Mbyte tape drive in the IPE/IPE-E has been rotated 180 degrees for systems shipped with the Meridian MAX 9 compared to the tape drive released with earlier versions of Meridian MAX IPE. This is shown in Figure 3-8.

Note 2: A Meridian MAX IPE/IPE-E containing a 600 Mbyte cassette tape drive uses a tape ejector button. A Meridian MAX IPE containing a 155 Mbyte cassette tape drive uses a tape latch.

CAUTION
Risk of equipment damage
Use an antistatic wrist strap before you remove components from an antistatic bag. Failure to do so may result in damage to components.

Figure 3-8
Meridian MAX IPE/IPE-E module containing a 600 Mbyte tape drive—front view

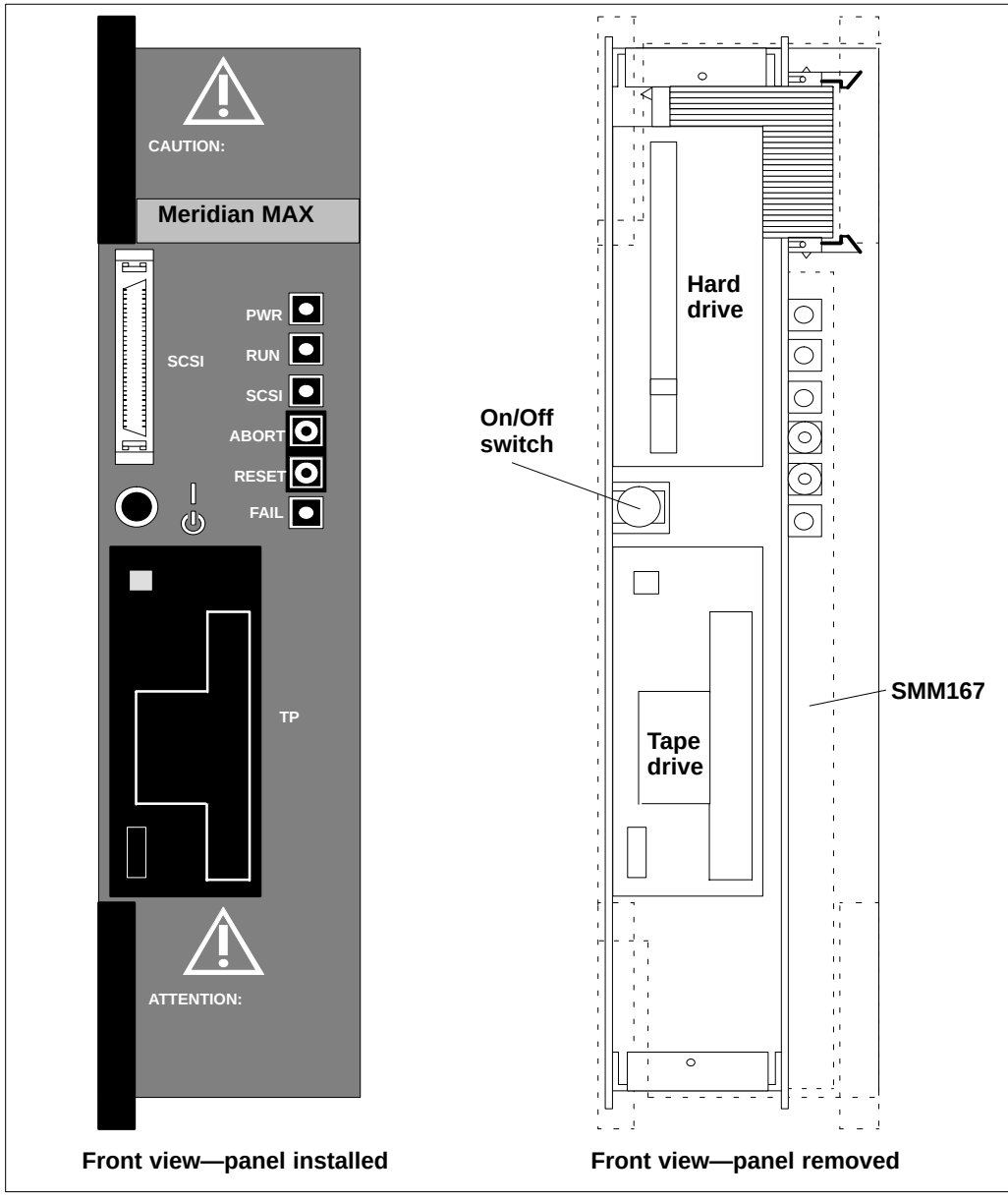


Figure 3-9
Meridian MAX IPE module containing a 155 Mbyte tape drive—front view

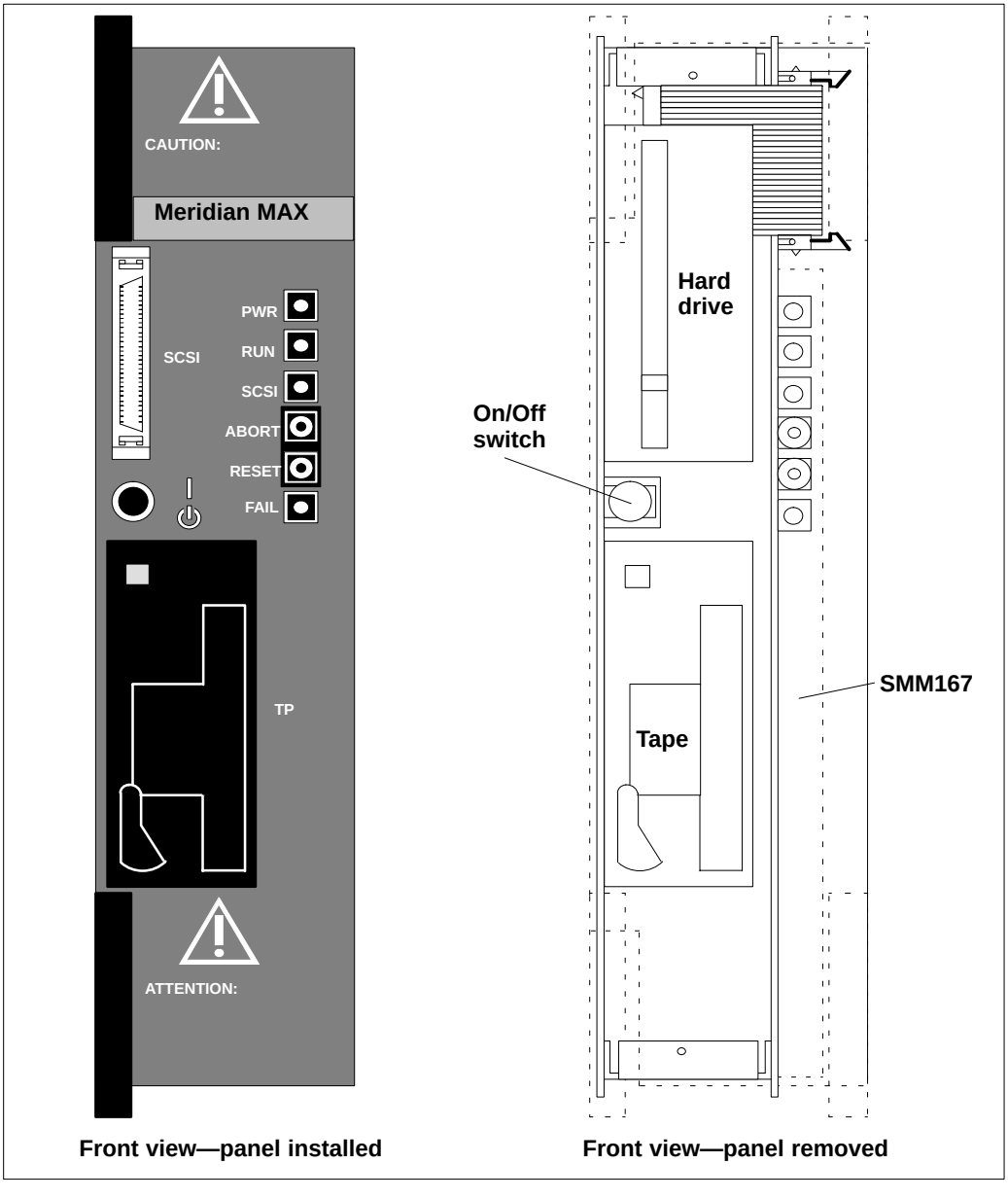


Table 3-7 lists the equipment and materials required for a Meridian MAX IPE/IPE-E installation.

Table 3-7
Meridian MAX IPE/IPE-E installation equipment and material list

Equipment	Contents
Meridian MAX IPE-E Option 11	Meridian IPE-E Module (A0669467) Containing: SMM167 CPU card 1 Gbyte Seagate ST31255N hard disk drive 600 Mbyte TEAC MT-2ST/F50B-000 cassette drive
Meridian MAX IPE Option 11	Meridian IPE Module (A0617009) Containing: SMM167 CPU card 240 Mbyte Fujitsu M2614 M2637S hard disk drive 600 Mbyte TEAC MT-2ST/F50B-000 cassette drive * New Meridian IPE Modules (A0617009) shipped after November 1995 contain a 1 Gbyte Seagate ST31230 hard disk drive and supports 250 Mbyte database sizes. Meridian MAX IPE Module (NT1R02AA) Containing: SMM167 CPU card 180 Mbyte Seagate ST1201N hard disk drive 155 Mbyte TEAC MT-2ST/N50 cassette
Meridian IPE-E Option 21–81	Meridian IPE Module (A0669468) Containing: SMM167 CPU card 1 Gbyte Seagate ST31055N hard disk drive 600 Mbyte TEAC MT-2ST/F50B-000 cassette drive

—continued—

Table 3-7 (continued)
Meridian MAX IPE/IPE-E installation equipment and material list

Equipment	Contents
Meridian MAX IPE Option 21–81	Meridian IPE Module (A0617010) Containing: SMM167 CPU card 240 Mbyte Fujitsu M2614 M2637S hard disk drive 600 Mbyte TEAC MT-2ST/F50B-000 cassette drive * New Meridian IPE Modules (A0617010) shipped after November 1995 contain a 1 Gbyte Seagate ST31230 hard disk drive and supports 250 Mbyte database sizes. Meridian MAX IPE Module (NT1R02BA) Containing: SMM167 CPU card 180 Mbyte Seagate ST1201N hard disk drive 155 Mbyte TEAC MT-2ST/N50 cassette drive
Software	Meridian MAX Application Software (1 cassette) Motorola UNIX Operating System R3V8 (1 cassette) Meridian Terminal Emulator (MTE) 5.32 or lower for DOS if using personal computers as workstations (optional) Meridian Terminal Emulator (MTE) for Windows if using personal computers as workstations. This may be Version 6, 7, 8, or 9 (optional). Reflection 4+ version 3.0 for DOS (or higher) if using personal computers as workstations (customer provided)

—continued—

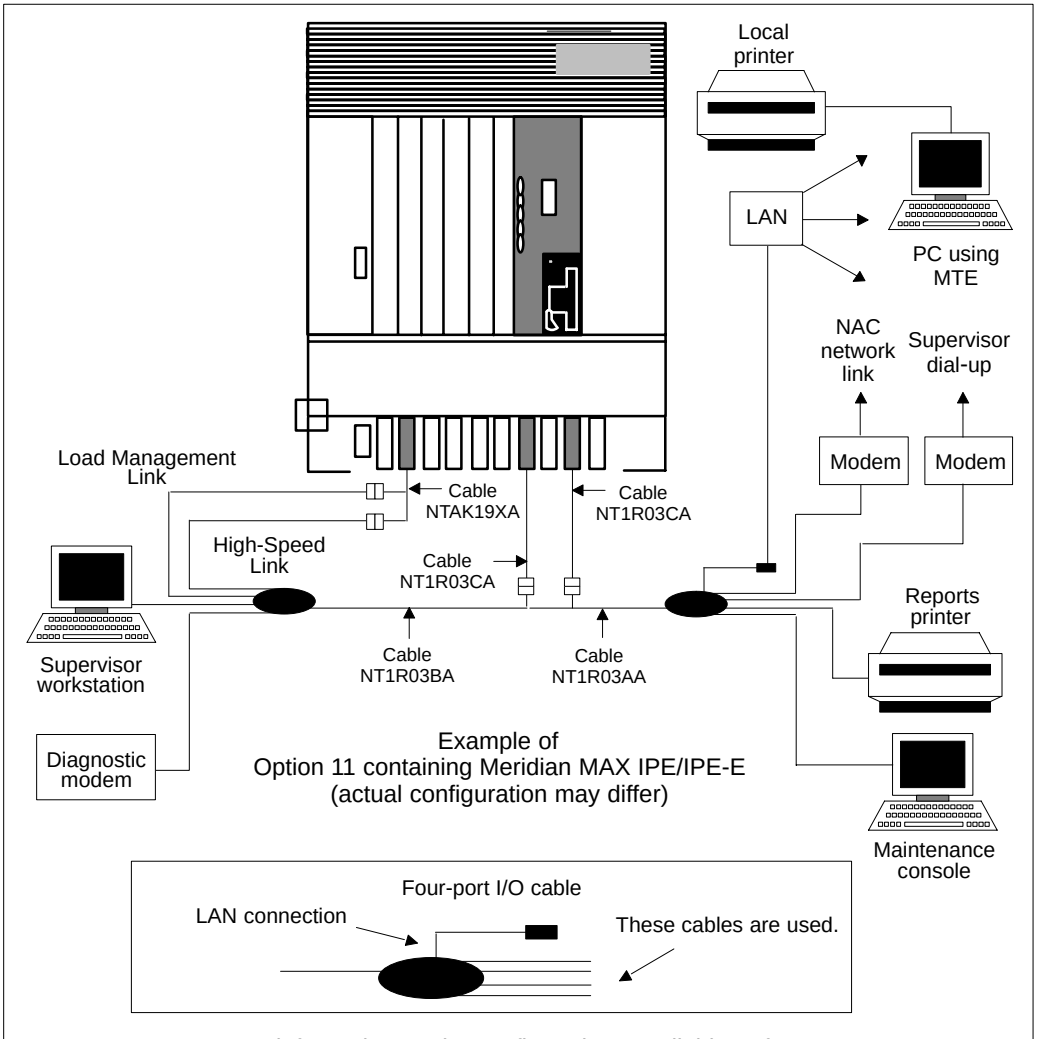
Table 3-7 (continued)
Meridian MAX IPE/IPE-E installation equipment and material list

Equipment	Contents
Documentation	P0881392 *Meridian MAX 9 Supervisor's User Guide* P0853414 *Meridian MAX 8 MSI/MEI Protocol Reference Guide* P0881398 *MTE 9 User Guide* 553-4001-210 *Meridian MAX 9 Upgrade Guide* (P0881397) A0662798 (includes the following set of NTPs): 553-4001-111 *Meridian MAX 9 Installation Guide* 553-4001-811 *Meridian MAX 9 Maintenance and Diagnostics Guide* 553-3201-200 *Application Equipment Module Installation Guide*
Misc. Supplies	*Use Order Code A0352271 to order a blank 150 Mybte data cassette tape for the Meridian MAX IPE Module (NT1R02AA/BA) *Use Order Code A0605411 to order a blank 600 Mybte data cassette tape for the Meridian IPE-E Option 11 (A0669467), Meridian IPE Option 11 (A0617009), Meridian IPE-E Option 21–81 (A0669467), or Meridian IPE Option 21–81 (A0617010) * A minimum of three blank data cassette tapes is required. External SCSI tape drive and cable (Call your Nortel distributor for order codes. Only available in the United States.)
—end—	

Figure 3-10 shows a simplified hardware layout for the Meridian MAX IPE/IPE-E Option 11 module installation. Figure 3-11 shows a simplified hardware layout for the Meridian MAX IPE/IPE-E Option 21–81 module installation.

These figures are intended to show you how the equipment is interconnected. The actual layout of your site may be quite different (see the "Site layout" section of the "Site preparation" chapter).

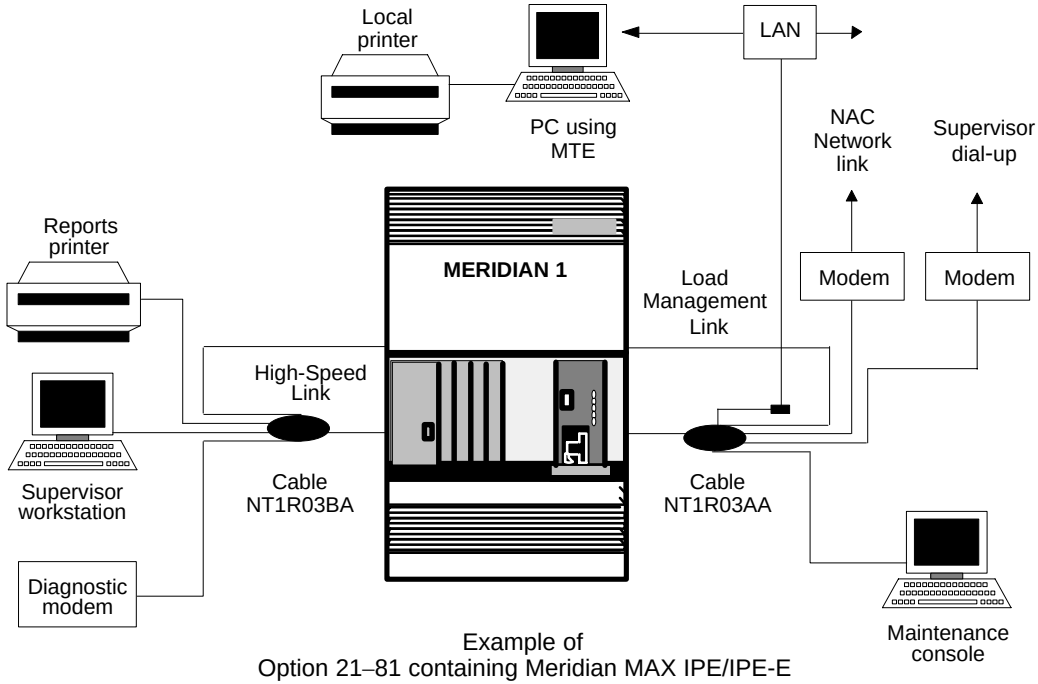
Figure 3-10
Meridian MAX IPE/IPE-E installation overview—Option 11



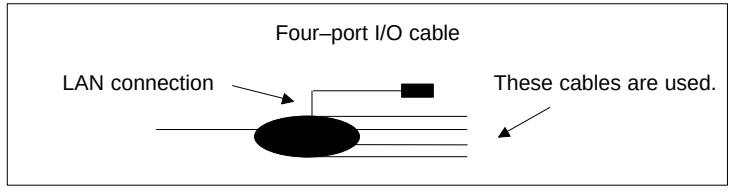
For more information on the configurations available, refer to the “Capacities” section in the “Site preparation” chapter.

Note: The system console is connected to Port 1, remote diagnostics is connected to Port 2, and the High-Speed Link is connected to Port 8.

Figure 3-11
Meridian MAX IPE/IPE-E installation overview—Option 21–81



Example of
Option 21–81 containing Meridian MAX IPE/IPE-E
(actual configuration may differ)



For more information on the configurations available, refer to the “Capacities” section in the “Site preparation” chapter.

Note: The system console is connected to Port 1, remote diagnostics is connected to Port 2, and the High-Speed Link is connected to Port 8.

IPE/IPE-E hardware upgrades

As your operation and needs grow, so does your need to expand your system. See Table 3-8 for the possible upgrade paths to Meridian MAX 9 IPE/IPE. The following sections detail the steps to upgrade your current hardware to Meridian MAX 9 IPE/IPE-E functionality.

Note: All upgrades must be performed by qualified technicians.

Table 3-8
Possible upgrade paths

Original system	Upgrade platform
Meridian MAX 3 or 4 single-module system	IPE/IPE-E
Meridian MAX 5 or 6 SEE system	IPE/IPE-E
Meridian MAX 4.6, 5, 6, 7, 8, or 9 IPE system	IPE/IPE-E

CAUTION
Risk of equipment damage
Use an antistatic wrist strap before you remove components from an antistatic bag. Failure to do so may result in damage to components.

Upgrading to Meridian MAX 9 IPE/IPE-E

Use this section if you want to upgrade one of the following systems to a Meridian MAX 9 IPE/IPE-E:

- Meridian MAX 3 or 4 single-module system
- Meridian MAX 4.6, 5, 6, 7, 8, or 9 IPE
- Meridian MAX 5 or 6 SEE system

If you currently have an empty cage in your Application Equipment Module (AEM) for your SNN/SNN-E system, and you are planning to upgrade to CCR or Meridian Link, install the Meridian MAX 9 Application Module (AM) in the empty cage to avoid removing your original system.

If you are upgrading your current system to a Meridian MAX IPE/IPE-E 8, the IPE module is already assembled. It is necessary for you to insert the module into the Option 11 or Option 21–81.

> ***Note:*** If you are upgrading from a Meridian MAX 3 or 4 single-module system to an IPE/IPE-E module running on an Option 21–81, it is possible that cable rerouting may be needed in your Option 21–81 to support your module. Refer to the *Meridian MAX 9 Installation Guide (*NTP 553-4001-111), "Meridian MAX installation: Intelligent Peripheral Equipment (IPE) module" chapter, "Meridian MAX IPE/IPE-E module—Option 21–81" section, "Cable rerouting for Option 21–81 CE/PE and IPE/IPE-E modules" subsection, to determine whether cable rerouting is required.

Selecting an upgrade procedure

If your Meridian MAX IPE/IPE-E is running on an Option 11 unit, follow Procedure 3-9. If your Meridian MAX IPE/IPE-E is running on an Option 21–81 unit, follow Procedure 3-10.

Procedure 3-9
Installing the Meridian MAX IPE/IPE-E module—Option 11

1. Back up your historical data to tape.
2. If you are upgrading a Meridian MAX 4.6, 5, 6, 7, 8, or 9 IPE system to a Meridian MAX 9 IPE/IPE-E, proceed to Step 8.

3 Remove the front panel of the main cabinet of the Option 11 or the front panel of the expansion cabinet.

There are a number of slots, numbered 2 to 9, in the main cabinet and 11 to 20 in the expansion cabinet, where the Meridian MAX IPE/IPE-E module can be inserted. Slots 10 to 12 in the main cabinet are reserved for Meridian Mail and cannot be used for Meridian MAX IPE/IPE-E. The Meridian MAX IPE/IPE-E module occupies any three consecutive slots.

4 Determine the slot placement of your Meridian MAX IPE/IPE-E module.

Slot placement is determined by the slot positions of existing applications already installed in either of the Option 11 cabinets. The slot placements of future applications for your system are also a consideration when deciding the slot placement for your Meridian MAX IPE/IPE-E.

5 Install the Meridian MAX IPE/IPE-E module.

Slowly slide the module along the slots into the cabinet, 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 then secured.

6 Power on your IPE/IPE-E module.

The power button is located on the faceplate of the IPE/IPE-E module.

7 Configure the SMM167 card.

Refer to the “Configuring the SMM167 card” section in this chapter for instructions on how to configure the SMM167 card.

8 Install the Meridian MAX IPE/IPE-E software and reinstall the historical database.

Refer to the “Software upgrades and reinstallations” chapter, “Upgrading to Meridian MAX 9” section, for information on software and database installation.

Procedure 3-10
Installing the Meridian MAX IPE/IPE-E module—Option 21–81

1 Back up your historical data to tape.

2 If you are upgrading a Meridian MAX 4.6, 5, 6, 7, 8, or 9 IPE system to a Meridian MAX 9 IPE, proceed to Step 8.

3 Remove the front panel of the CE/PE or IPE/IPE-E cabinet of the Option 21–81.

There are a number of slots, numbered 0 to 9 in the CE/PE cabinet and 0 to 15 in the IPE/IPE-E cabinet, where the Meridian MAX IPE/IPE-E module can be inserted. The Meridian MAX IPE/IPE-E module occupies any four consecutive slots.

The four card slots should be kept within the same segment number. Refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), “Hardware installation: Intelligent Peripheral Equipment (IPE) module” chapter, “Cable rerouting for Option 21–81 CE/PE and IPE modules” section, for more information concerning slot segmenting.

4 Determine the slot placement of your Meridian MAX IPE/IPE-E 9 module.

Slot placement is determined by the slot positions of existing applications already installed in either the CE/PE or IPE/IPE-E cabinets. The slot placements of future applications for your system are also a consideration when deciding the slot placement for your Meridian MAX IPE/IPE-E.

5 Install the Meridian MAX IPE/IPE-E 9 module.

Slowly slide the module along the slots into the cabinet, 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 then secured.

6 Power on your IPE/IPE-E module.

The power button is located on the faceplate of the IPE/IPE-E module.

If you are upgrading from a Meridian MAX IPE 4.6 or 5 system, go to Step 8.

7 Configure the SMM167 card.

Refer to the “Configuring the SMM167 card” section in this chapter for instructions on how to configure the SMM167 card.

8 Install the Meridian MAX IPE/IPE-E software and reinstall the historical database.

Refer to the “Software upgrades and reinstallations” chapter, “Upgrading to Meridian MAX 9” section,” for information on software and database installation.

Configuring the SMM167 card

Procedure 3-11 describes the configuration of the SMM167 card for use with the Option 11 and Option 21 Meridian MAX IPE/IPE-E modules.

> ***Note:*** If you change the SMM167 card, you must make the LAN aware of the card's Media Access Control address. This is done by "pinging" a known device on your LAN while the Meridian MAX is in product mode. LAN connections to the Meridian MAX may not work properly if this address is not known to the LAN. For more information on the ping process, refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), "LAN link diagnostic tools" chapter, "Ping" section.

Procedure 3-11
Configuring the SMM167 card

1. Make sure the power on the Meridian MAX IPE/IPE-E is turned off.
2. Press the power button to power on the Meridian MAX IPE/IPE-E.

   The system displays the following at the Maintenance console:

   ```
   Copyright Motorola Inc. 1989 – 1992, All Rights Reserved

   M4120 Debugger/Diagnostics Release Version 1.0 – 09/04/92

   COLD Start

   Local Memory Found =01000000 (&16777216)

   MPU Clock Speed =25Mhz
   ```

3. If your SMM167 card was preset in the factory, go to Step 6.

   If your card was not preset in the factory, the following message appears:

   ```
   Autoboot in progress... To abort hit <BREAK>
   ```

4. Press the **{BREAK}** key.

   Note: {F5} on the VT520 and VT420 is equivalent to the {BREAK} key.

   ```
   --Break Detected--
   ```

   The following menu may be shown. If it does not appear, go to Step 6.

   ```
   1) Continue System Start Up

   2) Select Alternate Boot Device

   3) Go to System Debugger
   ```

```
4) Initiate Service Call

5) Display System Test Errors

6) Dump Memory to Tape

Enter Menu #:
```

5 Enter **3** to select the “Go to System Debugger” option.

6 The system displays the following prompt:

```
4120–Diag>
```

7 Enter **env** to configure the system environment.

The default values that appear when the system is powered on are in effect at this moment. They may differ if the card was configured at the factory or at the site. Regardless, only the following recommended values should be entered.

```
Bug or System environment [B/S] = ?
```

8 Enter **b** for bug.

The system displays the following prompt:

```
Field Service Menu Enable [Y/N] = ?
```

9 Enter **n** to reject the Field Service Menu.

The system displays the following prompt:

```
Probe System for Supported I/O controllers [Y/N] = ?
```

10 Enter **y** to probe system for supported I/O controllers.

The system displays the following prompt:

```
Local SCSI Bus Reset on Debugger Startup [Y/N] = ?
```

11 Enter **y** to start up the local SCSI bus reset on the debugger.

The system displays the following prompt:

```
Ignore CFGA Block on a Hard Disk Boot [Y/N]   = ?
```

12 Enter **y** to ignore CFGA block on a hard disk boot.

The system displays the following prompt:

```
Auto Boot Enable [Y/N]  = ?
```

13 Enter **y** to enable the auto boot.

The system displays the following prompt:

```
Auto Boot at power–up only [Y/N] = ?
```

14 Enter **n** to disable auto boot at power-up only.

The system displays the following prompt:

```
Auto Boot Controller LUN = ?
```

15 Enter a period (**.**).

The system displays the following prompt:

```
Update Non-Volatile RAM [Y/N] = ?
```

16 Enter **y**.

Wait for the next prompt to appear on your screen. When the prompt appears, power down your system by pressing the power button located on the faceplate of the IPE/IPE-E module.

At this point, you may replace the SMM167 card if necessary (refer to the *Meridian MAX 9 Installation Guide* (NTP 553-4001-111), “Hardware installation: Intelligent Peripheral Equipment module” chapter, “Hardware replacements” section, for more details), or power on the system and install your Meridian MAX software.

Chapter 4: Meridian MAX system configuration

During a software installation procedure, you will be 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 Assign 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 Assign the capacity configurations.

Refer to the “Setting the capacity configurations” section.

5 Return to your previous software installation procedure.

Assigning the ports

Port assignment must be completed during a software installation or operating modes procedure.

Fixed port assignments

Table 4-1 provides a list of predefined ports on the SNN/SNN-E and IPE/IPE-E platforms. These ports cannot be changed.

Table 4-1
Meridian MAX ports

Platform	Maximum number of ports	Predefined ports
SNN/SNN-E	8/16/24/32/40	Card 2, Connection 1A is permanently assigned to the High-Speed Link and cannot be changed by the user. The LAN connection is located at the Ethernet port on the I/O panel.
IPE/IPE-E	8	The High-Speed Link is fixed on Port 8, the console port is fixed on Port 1, and the diagnostic modem is fixed on Port 2. The maintenance console and remote diagnostics modem may also be used as a supervisor display through Supervisor Display Access (SDA). The LAN connection is located at the Ethernet port on the NT1R03AA four-port I/O cable.

Required port assignments

Not all ports must be assigned. However, certain devices must be configured to the Meridian MAX. Table 4-2 provides a list of these other devices.

Table 4-2
Required ports assignments

Devices	Comments
Supervisor workstations and printers	If there are no active LAN supervisor sessions, a minimum of one supervisor workstation and one printer must be assigned on the Meridian MAX.
Load Management Link	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 the High-Speed Link port on the SNN/SNN-E systems, or on ports 1, 2, and 8 on the IPE/IPE-E systems.
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 may be assigned to any port except the High Speed Link port on the SNN/SNN-E systems, or ports 1, 2, and 8 on the IPE/IPE-E systems.

Retained port assignments

All port assignments are retained if:

- you are performing an upgrade without a hardware platform change and the new ports are equal to or greater than the number of ports on the previous system

All ports must be reassigned if

- you are performing an installation upgrade that involves a change in hardware platform
- the number of available ports on the new system is less than the number of available ports on the old system

If you want to change your port assignments after the installation is complete, you must alter the port assignments through maintenance. Refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), “Maintenance and administration programs: system running” or “Maintenance and administration programs: system shutdown” chapters, “Configure Meridian MAX system” section, “MAX hardware configuration” subsection, for more information.

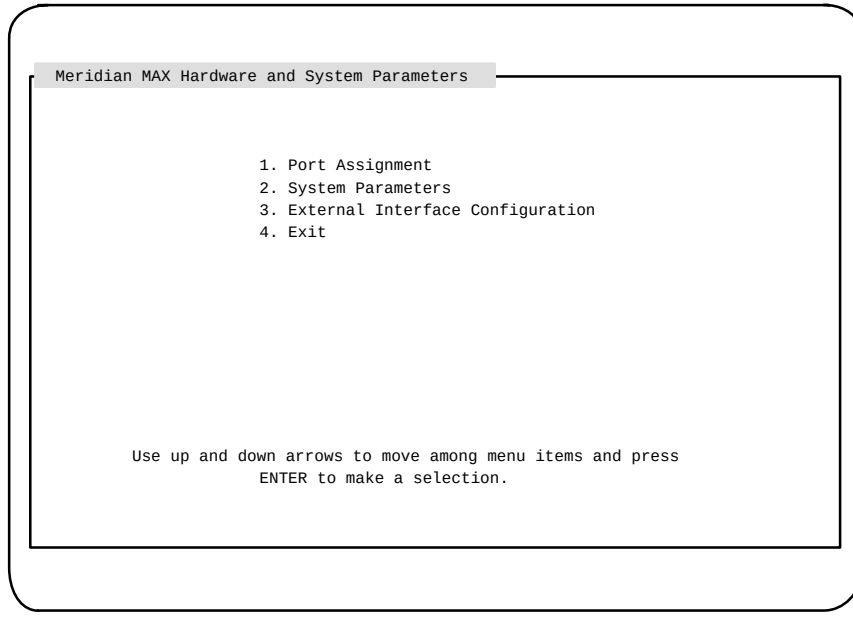
Port assignment procedure

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

Procedure 4-1
To assign Meridian MAX ports

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

Figure 4-1
Meridian MAX Hardware and System Parameters

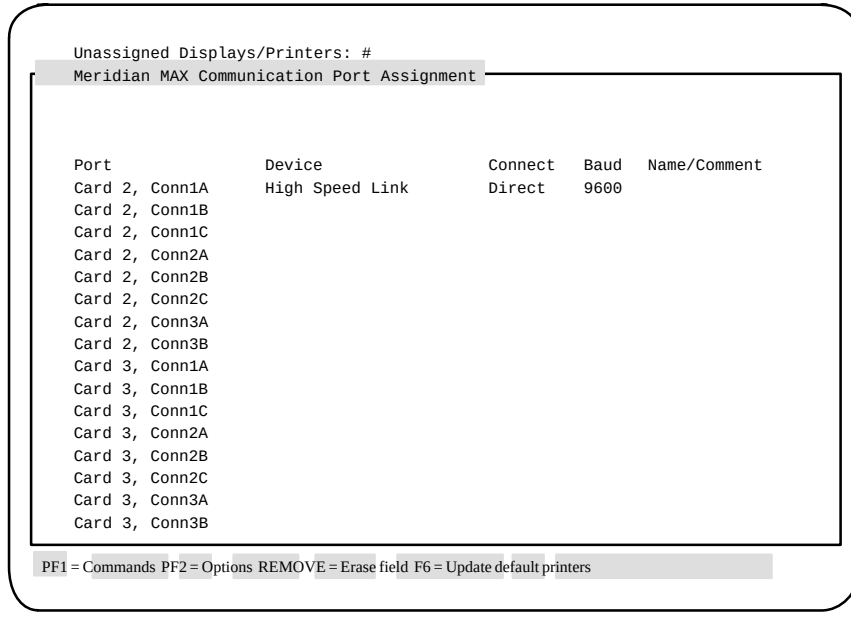


Note: The External Interface Configuration feature only appears on this menu if the MSI option or MEI option, or both, are enabled.

2 To enter your port assignments, enter **1**, followed by **{RETURN}** or highlight the field using the cursor keys, followed by **{RETURN}**.

The Meridian MAX Communication Port Assignment screen appears.

Figure 4-2
Meridian MAX Communication Port Assignment



The screen shown in this procedure is only an example of an SNN system with no ports assigned.

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 screen appears.

5 Go to the “Adjusting the system parameters” section.

Function keys

PF1=Commands

The following commands are available after pressing [Commands]:

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 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 options

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

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.

Fields

Unassigned Displays/Printers

This field, which appears at the top of the screen, indicates the number of available printers and 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.

For an SNN/SNN-E system, the ports are listed according to their card number, and connection number and letter. The card number refers to the card slot number in which the card is located. The card number begins at Card 2, Connection 1A because the CPU resides in the first card slot. The connection number refers to the port connection on the generic Input/Output panel. The connection letter refers to the specific port to which the devices are attached. An SNN/SNN-E system can have 8, 16, 24, 32, or 40 ports. If the system has more than 16 ports, all of the ports cannot be viewed on a single screen. Use the up and down arrow keys to scroll the screen to view the rest of the ports.

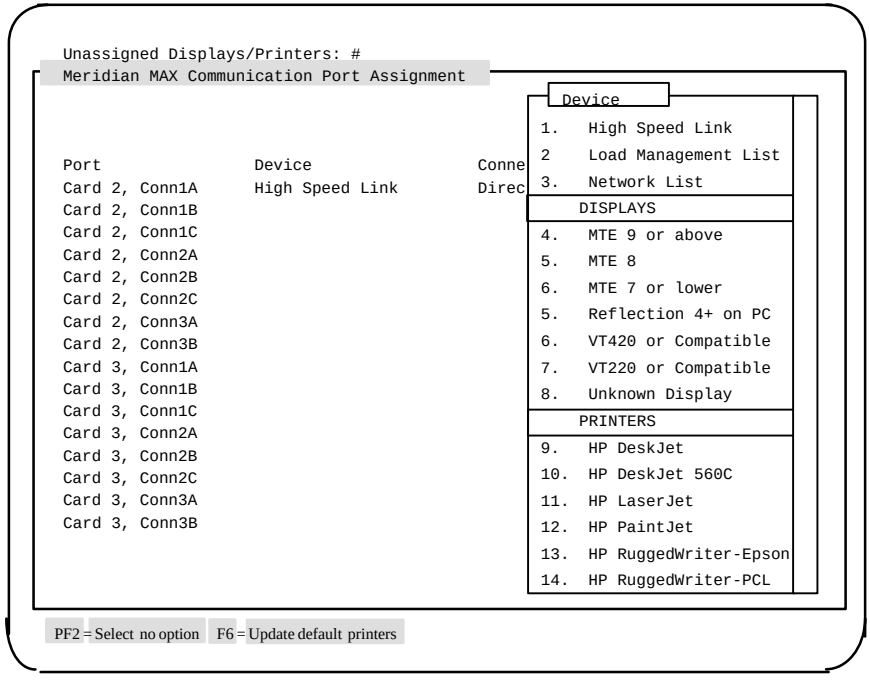
For an IPE/IPE-E system, the ports are listed numerically. In an IPE/IPE-E system, a maximum of eight ports can be assigned.

Not every port has to be assigned but you must assign at least one printer and one supervisor workstation.

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 4-3
Device options on the Meridian MAX Communication Port Assignment screen



The following list contains important notes regarding the *Device* field:

- Refer to Table 4-1 for a list of predefined ports on the Meridian MAX. Refer to Table 4-2 for a list of other devices which must be assigned to the ports.
- If your system is an IPE/IPE-E, the *Device* field can have up to seven different entries: Load Management Link, supervisor display, printer, console port, diagnostic modem, network link, and High-Speed Link.
- If your system is an SNN/SNN-E, the *Device* field can have up to five different entries: Load Management Link, supervisor display, printer, network link, and High-Speed Link.

- In Meridian MAX 8, the diagnostic modem port speed was increased from 2400 baud to 9600 baud. The diagnostic modem port speed can only be modified by continuously hitting the {BREAK} key when the modem connects. The maximum speed is 9600 baud. The diagnostic modem is used by personnel providing remote support.

  The diagnostic modem is connected to the second serial port on the CPU card. This port is only shown on the display if you have an IPE/IPE-E platform.

- If you are using a VT520 display, select VT420 when you press **{PF2}** while in the *Device* field.
- If you are using an HP DeskJet 660C printer, select HP DeskJet 560C when you press **{PF2}** while in the *Device* field.
- Each time a printer is selected, a message appears at the bottom of the screen asking the installer to enter a printer name for the assigned port in the *Name/Comment* field. Enter a unique name in the *Name/Comment* field that identifies the printer. For example, if a tabular printer is assigned, the name TabPrint could be used. Every printer must have a unique name.
- The default printer must be assigned before you are allowed to exit this screen.
- Printer models are listed when you press **{PF2}** while in the *Device* field. Select the model appropriate to the printer connected to the assigned port.
- An arrow appears on the right-hand side of the pop-up menu if all of the devices could not 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,” “Modem,” and “To PC.” Depending upon the device assigned, this field may be filled in automatically by the system.

Baud

This field indicates the baud rate. Each time an unknown display or network link is selected, a baud rate must also be assigned. The choices are 2400 or 9600. You can, however, change the baud rate of the High-Speed Link port from 9600 to 19 200 and vice versa while the system is shut down. The default baud rate of the High-Speed Link is 9600. For other devices, the baud rate is assigned automatically by the system (except for the network link and unknown displays). The baud rate for the Meridian MAX High-Speed Link must match the baud rate of the High-Speed Link on the Meridian 1.

Name/Comment

This field displays the name given to an assigned printer, or comments made on other 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.

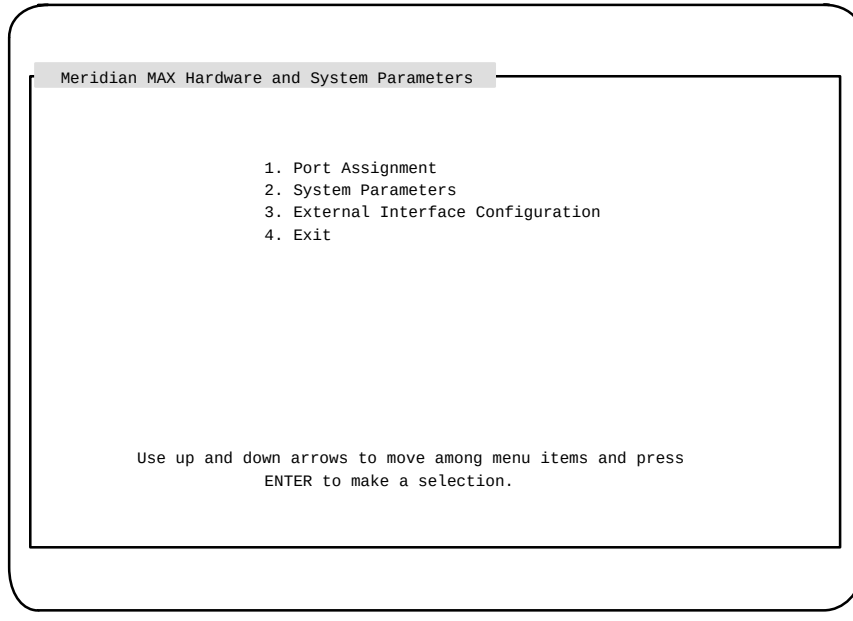
System parameters procedure

Perform this procedure to assign the system parameters. This is done after the ports are assigned.

Procedure 4-2
To assign system parameters

1 Display the Meridian MAX Hardware and System Parameters menu.

Figure 4-4
Meridian MAX Hardware and System Parameters

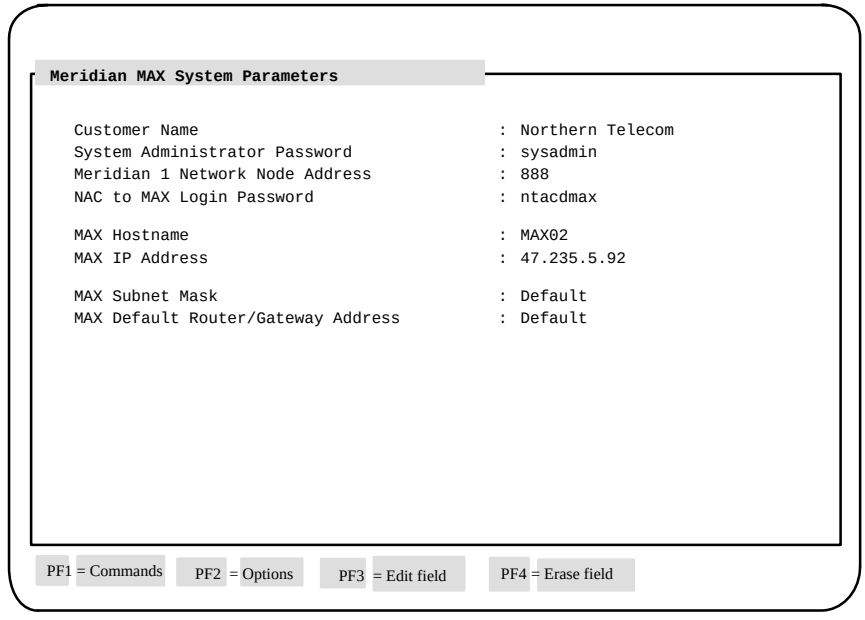


Note: The External Interface Configuration feature only appears on this menu if the MSI option, or MEI option, or both, are enabled.

2 To assign system parameters, enter **2**, followed by **{RETURN}** or highlight the field using the cursor keys, followed by **{RETURN}**.

The Meridian MAX System Parameters screen appears.

Figure 4-5
Meridian MAX System Parameters



All of the fields shown on this screen will only appear if your system has NACD, NAC, and LAN connectivity options enabled. If these are not enabled, only the Customer Name and System Administrator Password fields will appear.

3 Complete the Meridian MAX System Parameters 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 system parameters are saved. The Meridian MAX Hardware and System Parameters screen 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 [Commands]:

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 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 in 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 in 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. This field only appears if your system has at least one LAN session defined, or the MSI option or MEI option enabled.

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.

This field only appears if your system has at least one LAN session defined, or the MSI option or MEI option enabled.

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. An improper subnet mask can result in high collision rates and reduced network efficiency.

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.

This field only appears if your system has at least one LAN session defined, the MSI option enabled, or the MEI option enabled.

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.

This field only appears if your system has at least one LAN session defined, or the MSI option or MEI option enabled.

Assigning MSI or MEI links

For each MEI and MSI link, you must enter the port number which 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).

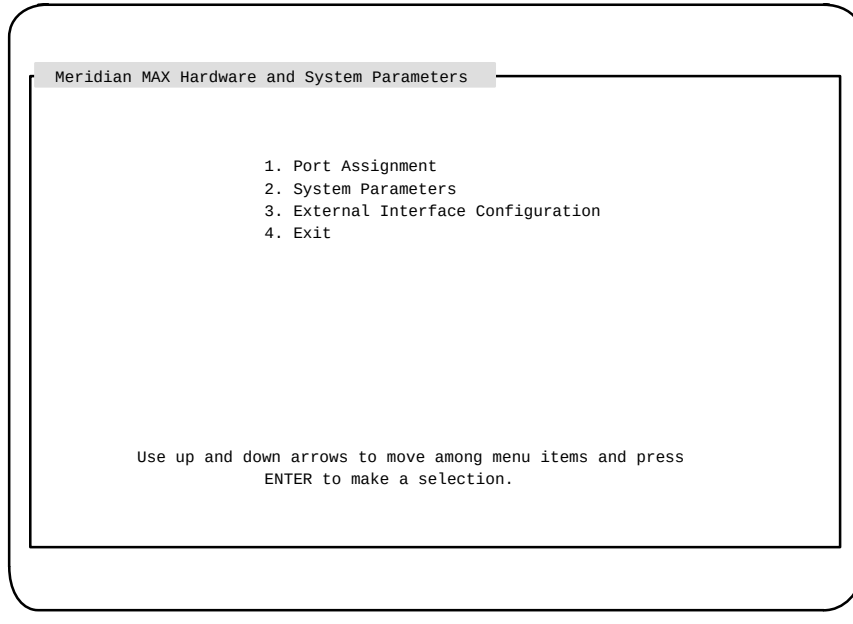
MSI or MEI link procedure

Perform this procedure after assigning the ports and setting the system parameters.

Procedure 4-3
To assign the MSI or MEI links

1 Display the Meridian MAX Hardware and System Parameters menu.

Figure 4-6
Meridian MAX Hardware and System Parameters

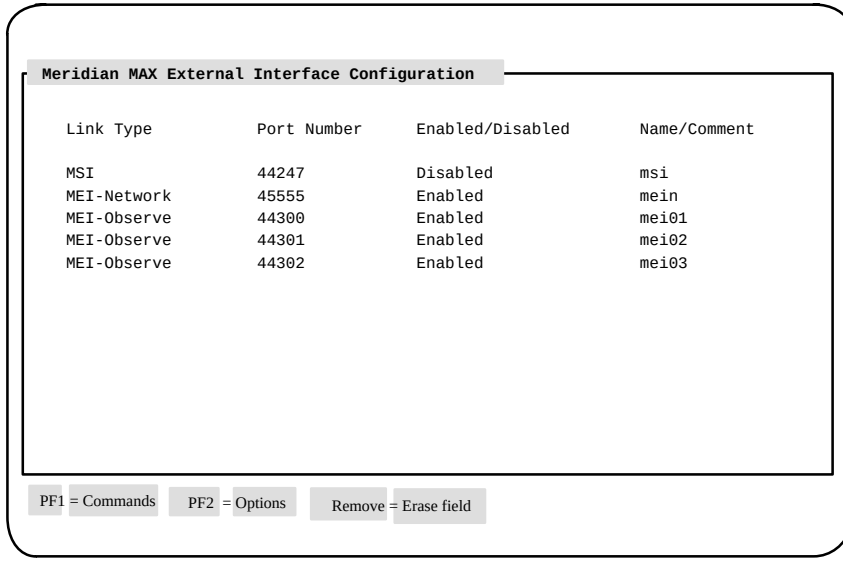


Note: The External Interface Configuration feature only appears on this menu if the MSI option or MEI option, or both, are enabled.

2 To assign the MSI or MEI links, enter **3**, followed by **{RETURN}** or highlight the field using the cursor keys, followed by **{RETURN}**.

The Meridian MAX External Interface Configuration screen appears.

Figure 4-7
Meridian MAX External Interface Configuration



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 screen appears.

5 Go to the “Setting the capacity configurations” section.

Function keys

PF1=Commands

The following commands are available after pressing [Commands]:

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 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 which 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 could take between 15 minutes and 14 hours depending on database size. It typically takes between one to three hours.

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. This preparation must be done before starting your software installation. Failure to take this preparation before configuring the system database could result in an improper configuration and an extended installation time. Because of the large number of interdependent field values that affect database storage, the telecommunication engineer must be consulted.

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 database, the historical database tables may become full. Meridian MAX has two conditions under which the 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 could 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 remains consistent. For example, if the two oldest dates of data are deleted from one table, the data for those dates are 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.

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.

Impact of Meridian MAX 8 (and higher) on the historical database

Most of the features introduced in Meridian MAX 8 (and higher) require a small amount of extra disk space and memory. Three of the features, however, require additional historical database storage space. If your historical database disk is at or near its storage limit, you may need to reduce some of your other capacity configuration parameters to accommodate these new features.

Depending on the capacity configuration parameters, the three features and the additional space they require include the following:

- Nine-Digit DNIS Reporting (0.1 Mbyte to 1 Mbyte)
- DNIS-CCR Treatment Reporting (2 Mbytes to 15 Mbytes)
- Agent Activity Code Reporting (60 Mbytes to 500 Mbytes without MQA, and 200 Mbytes to 1400 Mbytes with MQA)

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 system 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 9 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 could result in the need for a system database reconfiguration which, depending on its size, can take between 15 minutes to 14 hours.

Configuring a new system 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 which 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. Pressing the {F6} function key allows you 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 are still able to affect changes to your Meridian MAX 9 capacity configuration. The value for each field can be altered 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 4-3, and Advanced Capacity Configuration worksheet, seen in Table 4-4, 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 9 system, this process can be done through the maintenance and administration programs.

Refer to the *Meridian MAX 9 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 9 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.

Table 4-3
Basic Capacity Configuration worksheet

Field name	Subfield name	Actual value	Expansion value
M1 Positions	N/A		
M1 Supervisors	N/A		
Agent ID	N/A		
DNIS	N/A		
Activity Code	N/A		
Avg. Calls per Hour	N/A		
Queues	ACD-DNs		
	CDNs		
	IVR/MAIL		
ACD Trunk Level Reporting	N/A		
Routes	RAN		
	ACD Auto Terminate (AT)		
	ACD Non AT		
ACD Trunks	Auto Terminate (AT)		
	Non AT Trunks		
Operation Hours	Agent Shifts Per Day		
	Hours Per Day		
	Days Per Week		

—continued—

Table 4-3 (continued)
Basic Capacity Configuration worksheet

Field name	Subfield name	Actual value	Expansion value
Storage Duration	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, the user is required to view the Advanced Capacity Configuration screen by pressing {F6}. Once this screen is viewed and any additional changes are made, return to the Basic Capacity Configuration screen to save all of the changes.

Table 4-4
Advanced Capacity Configuration worksheet

Field name	Subfield name	Actual value	Expansion value
ACD Queue Operations (per int.)	Dest. Qs per CDN		
	Dest. Qs per ACD-DN		
	Rem. Src. Qs per ACD-DN		
	Primary Answering Qs		

—continued—

Table 4-4 (continued)
Advanced Capacity Configuration worksheet

Field name	Subfield name	Actual value	Expansion value
Trunk Reassignment (per int.)	AT Trunk to Queue		
	Qs Receiving Transfers		
Position Reassignment (per int.)	Pos. to Supervisor		
	Pos. to Queue		
Activity Code Usage (per int.)	Activity Codes per Q		
Number of Agents using Activity Codes (per int.)	Num Agt Using Act Codes		
Qs Logged in per Agent	N/A		
Agent Events (per day)	Logins per Agent		
	Walkaways per Agent		

Note: Once any changes have been made in the Advanced Capacity Configuration screen, the user is required to return to the Basic Capacity Configuration screen where the changes can then be saved.

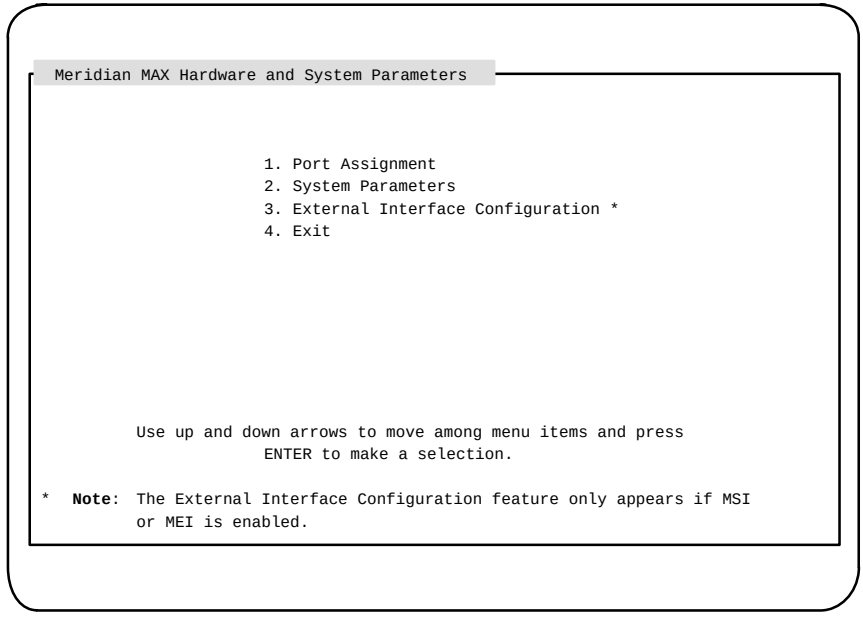
Basic Capacity Configuration procedure

Perform this procedure after assigning the ports, setting the system parameters, and assigning the MSI and MEI links.

Procedure 4-4
To assign the basic capacity configurations

1. Follow the procedures described in this chapter to assign the ports, system parameters, MSI links, and MEI links.
2. Display the Meridian MAX Hardware and System Parameters menu.

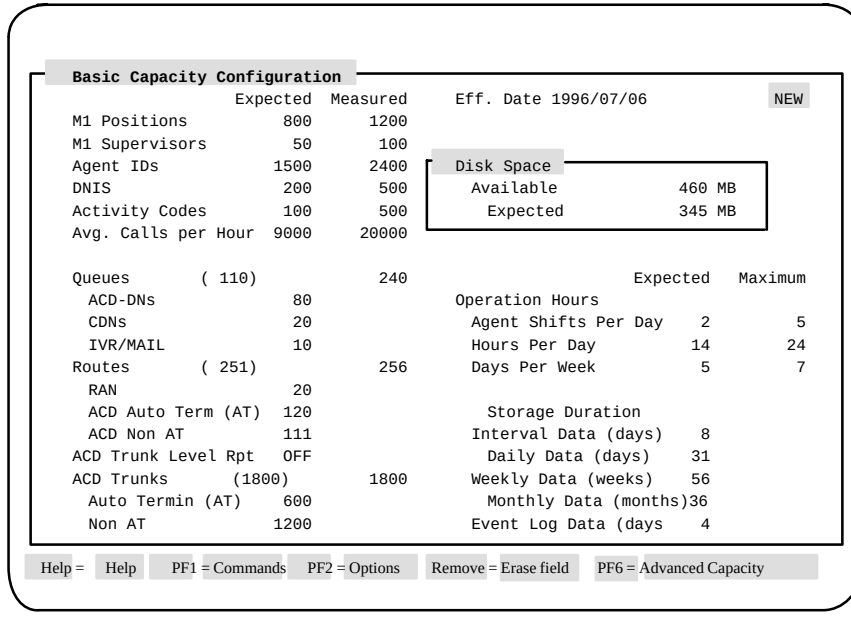
Figure 4-8
Meridian MAX Hardware and System Parameters



3. Enter **4**, followed by **{RETURN}** to exit.
4. 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.
5. Wait for the system to display the Basic Capacity Configuration screen.

   This is only a sample. Your values may differ.

Figure 4-9
Basic Capacity Configuration



6 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 by the purchased options.

Note: If you change your terminal type by pressing {CONTROL}{T}, all unsaved changes on the screen are lost. If you do not want to lose your changes, choose the same terminal type after pressing {CONTROL}{T}.

7 After the Basic Capacity Configuration screen is completed, press **{PF6}** to display the Advanced Capacity Configuration screen.

8 Go to the “Advanced Capacity Configuration” procedure.

Function keys

PF1 = Commands

The following commands are available after pressing [Commands]:

Exit (without saving changes)

This command exits without saving changes.

View Current Configuration

If enabled, this command displays the Basic Capacity Configuration screen of the current configuration when the Meridian MAX is shut down.

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 is displayed on the screen.

Return to New Configuration

This command returns you to the new configuration of the Basic Capacity Configuration screen. This option is available only when viewing the current configuration, and Meridian MAX is shut down.

Print Current Configuration

This command prints a report of the "Current" configuration to the default printer. This option is available only when viewing the current configuration.

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.

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.

PF6 = Advanced Capacity

This key changes the display to the Advanced Capacity Configuration screen of the new configuration.

PF7 = Validate fields

This key validates the field values. If there are any errors, a window appears in the upper right-hand 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 is displayed 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 4-9.

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 is displayed. 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 is 460 Mbytes for the SNN/SNN-E, 250 Mbytes for IPE-E, and 90 Mbytes for the IPE.

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 which 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 which 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 so.

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 one to five.

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 one to seven.

Note: To ensure that Meridian MAX collects all the calls which 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 seven is entered in the "*Daily Data*" field, it indicates that data should be collected for the previous seven days.

If seven 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.

Interval Data
This field shows the number of days for interval data storage. This value is greater than or equal to two.

Daily Data
This field shows the number of days for daily data storage. This value is greater than or equal to one.

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 one.

Monthly Data
This field shows the number of months for monthly data storage. This value is greater than or equal to one.

Event Log Data
This field shows the number of days for agent event log data storage. This value is greater than or equal to two.

Advanced Capacity Configuration procedure

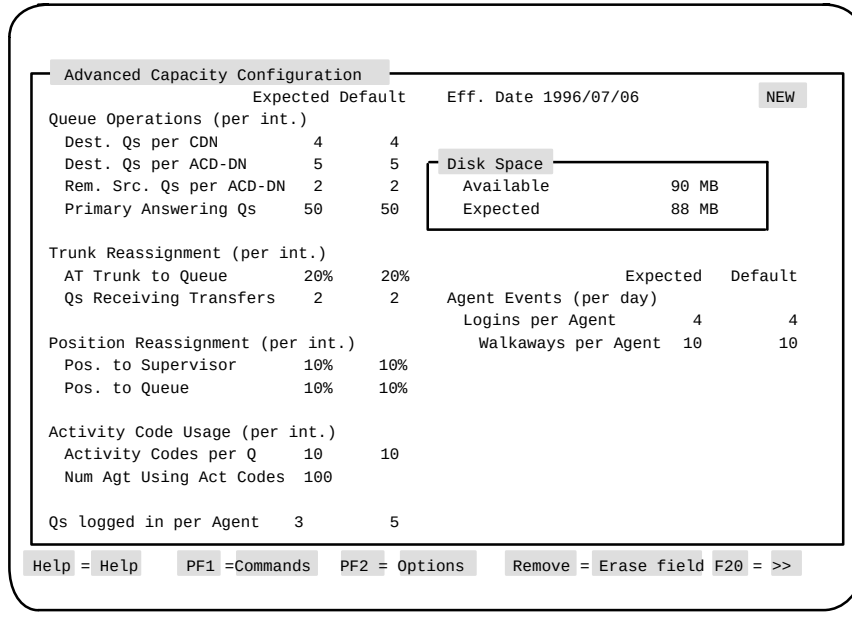
Perform this procedure after completing the Basic Capacity Configuration procedure.

Procedure 4-5
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 is displayed. This is only a sample. Your values may differ.

Figure 4-10
Advanced Capacity Configuration



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.

When you choose this command during an installation upgrade, the following message appears. If you are performing a new installation, go to Step 6.

```
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, enter **n**, followed by **{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 wish to proceed with the new configuration, enter **y**, followed by **{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, enter **n**, followed by **{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, enter **y**, followed by **{RETURN}**. The system will reconfigure the database and continue once the reconfiguration is complete.

6 Return to your software installation procedure.

Function keys

PF1 = Commands

The following commands are available after pressing [Commands]:

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.

View Current Configuration

If enabled, this command displays the current Advanced Capacity Configuration screen when the Meridian MAX is shut down.

Return to New Configuration

If enabled, this command returns you to the new configuration of the Advanced Capacity Configuration screen when the system is shut down.

Print Current Configuration

This command prints a report of the current configuration to the default printer. This option is available only if the current Meridian MAX configuration is shown on the screen.

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-hand 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 is displayed 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 4-6.

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 is 460 Mbytes for the SNN/SNN-E, 250 Mbytes for IPE-E, and 90 Mbytes for the IPE.

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 which have tried to send a call to a script. The number you enter in this field should be higher than this 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, 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 which 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 in 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 which are normally transferred from a queue to a queue and anticipate for growth.

Position Reassignment (per int.)

These fields show the frequency in which positions are reassigned. It is not necessary to frequently change these fields. Examine your busiest time period and note the frequency that 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 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 logins per agent. The range for this value is from one to five. The default value for a new installation is three if the MQA feature is enabled. If MQA is disabled, the default value is one.

This field appears only 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 login events per agent in a day. A login and a logout 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 4-5 provides detailed information regarding measured value fields for the Basic Capacity Configuration screen.

Table 4-5
Basic Capacity Configuration measured value field descriptions

Field name	Time	Update rate	Measured value	Comment
M1 Positions	Real-time data	End of interval	Exact number	The measured value is an exact number and not an average. The measured value may exceed the expected value only if the switch has more positions defined than the Meridian MAX system. Meridian MAX collects only 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.
M1 Supervisors	Real-time data	End of interval	Exact number	The measured value is an exact number and not an average. The measured value may exceed the expected value only if the switch has more supervisors defined than the Meridian MAX system.

—continued—

Table 4-5 (continued)
Basic Capacity Configuration measured value field descriptions

Field name	Time	Update rate	Measured value	Comment
				Meridian MAX collects only data for the expected number of supervisors. However, the measured value indicates to the user how many supervisors are actually defined on the switch. If a supervisor is added on the switch, this will not be reflected by Meridian MAX automatically. For the added or deleted supervisors to be detected by Meridian MAX, a configuration update or Meridian 1 initialization is required. Measured values are not determined by using historical data. They are determined by using real-time data.
Agent ID	System lifetime data	End of interval	Exact number	The measured value is an exact number and not an average. The measured value may exceed the expected value only if the number of Agent IDs used exceeds the expected number of Agent IDs. Meridian MAX collects only data for the expected number of Agent IDs. However, the measured value indicates to the user how many Agent IDs are actually used.

—continued—

Table 4-5 (continued)
Basic Capacity Configuration measured value field descriptions

Field name	Time	Update rate	Measured value	Comment
				This number is updated at the end of every interval. It denotes the total number of agents used over the system lifetime. Agents are never deleted. If an agent logs out, the agent is not considered deleted. The agent still exists but is not operational. Therefore, the Agent ID number can only increase.
DNIS	Current day data	End of interval	Exact number	The measured value is an exact number and not an average. The measured value may exceed the expected value only if the total number of DNIS numbers used exceeds the expected number. Meridian MAX collects only data for the expected number of DNIS numbers. However, the measured value indicates to the user how many DNIS numbers are actually used. This number is updated at the end of every interval. It denotes the number of DNIS numbers used throughout the current day. The DNIS measured number is reset at midnight and the count restarts.

—continued—

Table 4-5 (continued)
Basic Capacity Configuration measured value field descriptions

Field name	Time	Update rate	Measured value	Comment
Activity Code	Real-time data	End of interval	Exact number	The measured value is an exact number and not an average. The measured value may exceed the expected value only if the number of activity codes used exceeds the expected number. Meridian MAX collects only data for the expected number of activity codes. However, the measured value indicates to the user how many activity codes are actually used. This number is updated at the end of every interval. It denotes the total number of activity codes used over the system lifetime.
Avg. Calls per Hour	Current day data	End of interval	Average	This value is updated at the end of each interval. It is the average number of simple calls that are received since midnight. At midnight, this value is reset.
Queues	Real-time data	End of interval	Exact number	The measured value is an exact number and not an average. The measured value may exceed the expected value only if the switch has more queues defined than the Meridian MAX system.

—continued—

Table 4-5 (continued)
Basic Capacity Configuration measured value field descriptions

Field name	Time	Update rate	Measured value	Comment
				Meridian MAX collects only data for the expected number of queues. However, the measured value indicates to the user how many queues are actually defined on the switch. This value is the total number of ACD-DNs + CDNs + IVR/Mail queues. It is updated at the end of each interval. Measured values are not determined by using historical data. They are determined by using real-time data.
ACD-DNs	N/A	N/A	N/A	This number indicates the maximum number of ACD–DNs 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.
CDNs	N/A	N/A	N/A	This number indicates the maximum number of CDNs 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—

Table 4-5 (continued)
Basic Capacity Configuration measured value field descriptions

Field name	Time	Update rate	Measured value	Comment
IVR/MAIL	N/A	N/A	N/A	This number indicates the maximum number of IVR/Mail queues 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 Trunk Level Reporting	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.
Routes	Real-time data	End of interval	Exact number	The measured value is an exact number and not an average. The measured value may exceed the expected value only if the switch has more routes defined than the Meridian MAX system.
				Meridian MAX collects only data for the expected number of routes. However, the measured value indicates to the user how many routes are actually defined on the switch. This value is the total sum of RAN routes, ACD Auto Terminate (AT) routes, and ACD Non AT routes.

—continued—

Table 4-5 (continued)
Basic Capacity Configuration measured value field descriptions

Field name	Time	Update rate	Measured value	Comment
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—

Table 4-5 (continued)
Basic Capacity Configuration measured value field descriptions

Field name	Time	Update rate	Measured value	Comment
ACD Trunks	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 Trunks	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—

Table 4-5 (continued)
Basic Capacity Configuration measured value field descriptions

Field name	Time	Update rate	Measured value	Comment
Operation Hours	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.
Storage Duration	N/A	N/A	N/A	These fields are updated every day at approximately 2 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—

Table 4-5 (continued)
Basic Capacity Configuration measured value field descriptions

Field name	Time	Update rate	Measured value	Comment
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 4-6 provides detailed information regarding measured value fields for the Advanced Capacity Configuration screen.

Table 4-6
Advanced Capacity Configuration measured value field descriptions

Field name	Storage duration	Update rate	Measured value	Comment
Queue Operations (per int.)	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 may 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—

Table 4-6 (continued)
Advanced Capacity Configuration measured value field descriptions

Field name	Storage duration	Update rate	Measured value	Comment
				The period of time for which this measurement is taken is defined in the Storage Duration – Monthly Data field. 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 could exceed the expected value.
Trunk Reassignment (per int.)	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.
Position Reassignment (per int.)	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—

Table 4-6 (continued)
Advanced Capacity Configuration measured value field descriptions

Field name	Storage duration	Update rate	Measured value	Comment
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.
Activity Code Usage (per int.)	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 may 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 may exceed the expected value.
Qs Logged in 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.

—continued—

Table 4-6 (continued)
Advanced Capacity Configuration measured value field descriptions

Field name	Storage duration	Update rate	Measured value	Comment
Agent Events (per day)	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—

Chapter 5: Software upgrades and reinstallations

Use this chapter to

- upgrade your Meridian MAX to a Meridian MAX 9 (This is called an installation upgrade.)
- reinstall your Meridian MAX system

  Note: The system treats a reinstallation procedure as an installation upgrade.
- install new software to upgrade the current system's applications (This is called an application upgrade.)

A word about warranties

You must read and understand the warranties issued for your peripheral equipment. Each warranty details what can be done with the item warranted. While the utmost care has been taken to ensure that the procedures described in this NTP 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 NTP. If you find such a condition, contact your dealer or Nortel service representative.

ATTENTION

Do not void your warranty for the sake of following any instruction in this (or any other) document. Register your warranties with the appropriate companies (usually the manufacturers) where required.

Note: Meridian 1 Option 114 (Security Package) is a prerequisite for Meridian MAX 9.

Before you begin

Before starting an upgrade, you should

- verify that the system is performing properly
- check the Meridian MAX error log and the UNIX system log (when appropriate) to verify that midnight backups are successfully completed
- schedule an upgrade to be completed before 11:30 p.m. or started after 1:00 a.m. so that the regular Meridian MAX midnight routines are executed properly
- ensure that the proper hardware procedures have been completed
- ensure that you have the completed and approved capacity configuration worksheets before beginning this software installation. For information on the worksheets, refer to the “Meridian MAX system configuration” chapter.

  Note: Once MQA or NACD are enabled, they can only be disabled by performing a new installation. When the new installation is performed, all previous data is lost.

- record the Meridian MAX IP address, Meridian MAX subnet mask, and the Meridian MAX default router/gateway address. These can be obtained from the Meridian MAX System Parameters display or the LAN administrator. If these values are not retained during an upgrade, they can be reentered in the Meridian MAX System Parameters display. For more information on this display, refer to the “Meridian MAX system configuration” chapter, “Adjusting the system parameters” section.

Backups

You should always back up your current system before doing an upgrade.

CAUTION
Risk of data loss

The backup tape will not contain the current day's data if the backup is done while the system is running. To save the current day's data on tape, the system must first be shut down. Refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), "Maintenance and administration programs: system running" chapter, "View/Modify Meridian MAX options" section, "Shut down the system" subsection, for more information.

Note: Do not perform a backup while the midnight routine is running. Doing so can result in inconsistent data on the backup tape.

To perform a backup, ensure that you first shut down the system. Use the "Backup Customer Data to Tape" option to save the Meridian MAX database to the loaded tape. This action ensures that no new data is missing.

If you do not have a backup tape or do not want to install your backup data onto the new system, you can switch the upgrade to a new installation. This alteration allows you to skip over the steps where the backup data tape is inserted and loaded onto the system. If you want to load your backup data, continue the installation as an upgrade, and follow the screen prompts and messages to load the backup tape.

Installation tapes

All of these procedures use two cassette tapes. Care must be taken to avoid damaging the tapes, as their fragility can result in tape errors during the installation procedure. Also ensure that installation tapes are set to write-protected before using them. Keep tapes away from excessive heat or electromagnetic radiation.

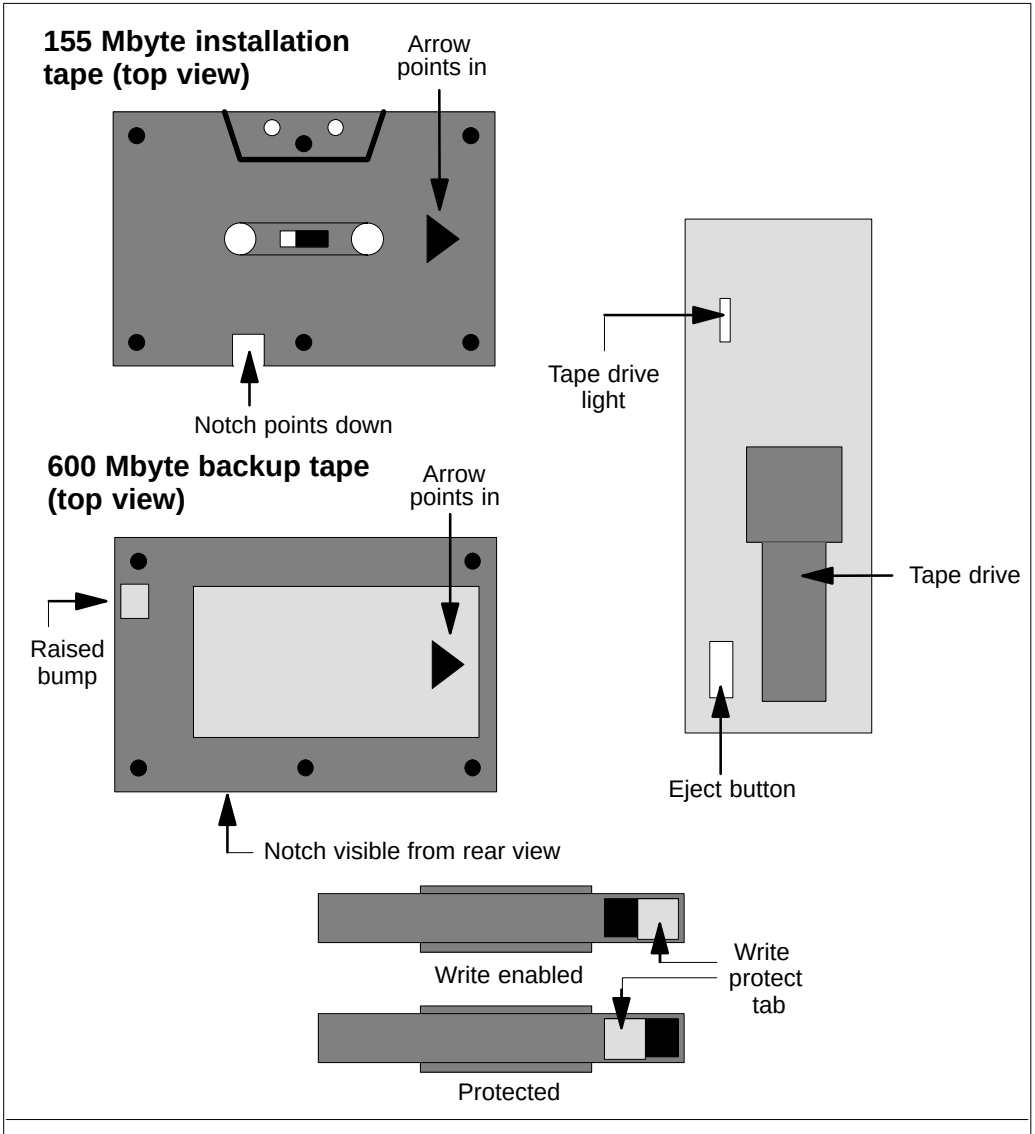
Figure 5-1 shows the correct method for inserting a cassette tape into the 600 Mbyte tape drive of a Meridian MAX 6 or 7 IPE, Meridian MAX 8 or 9 SNN-E, or any Meridian MAX SNN.

The 600 Mbyte tape drive in the IPE/IPE-E has been rotated 180 degrees in the Meridian MAX 8 (or higher) compared to the tape drive released with earlier versions of Meridian MAX IPE. This is shown in Figure 5-2.

Figure 5-3 shows the correct method for inserting and locking a cassette tape into the 155 Mbyte tape drive of any Meridian MAX IPE. Make certain the arrow on the label points toward the drive, and that the notch in the cassette tape is pointing down. After the tape is inserted in the 155 Mbyte tape drive, you must also rotate the tape drive latch clockwise until the latch handle is horizontal.

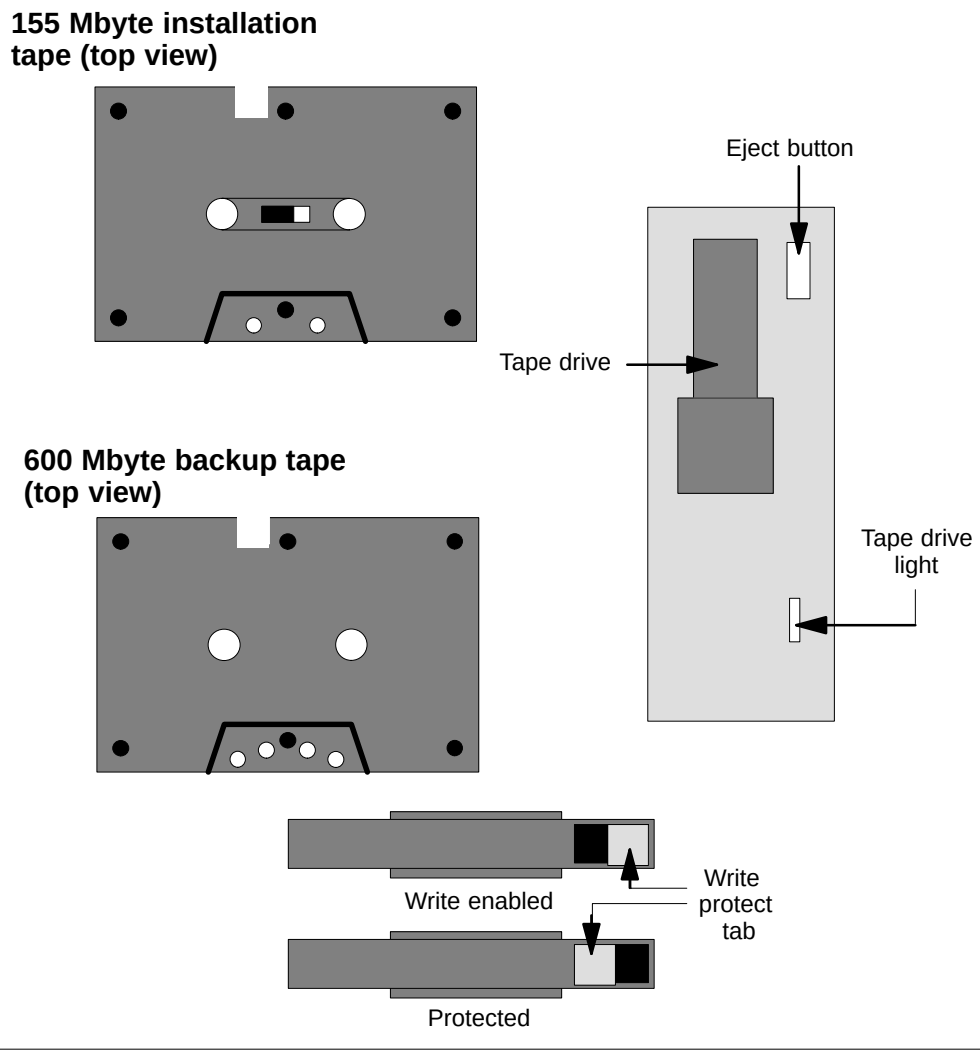
> ***Note:*** If the cassette tape is inserted incorrectly into the 600 Mbyte tape drive, the tape automatically ejects. Reinsert the tape correctly with the tape arrow pointing toward the drive as seen in Figure 5-1. Once the tape drive is running (the tape drive light is lit), you cannot eject the tape.

Figure 5-1
Inserting a cassette into the 600 Mbyte tape drive of a Meridian MAX 6 or 7 IPE, Meridian MAX 9 SNN-E, or any Meridian MAX SNN



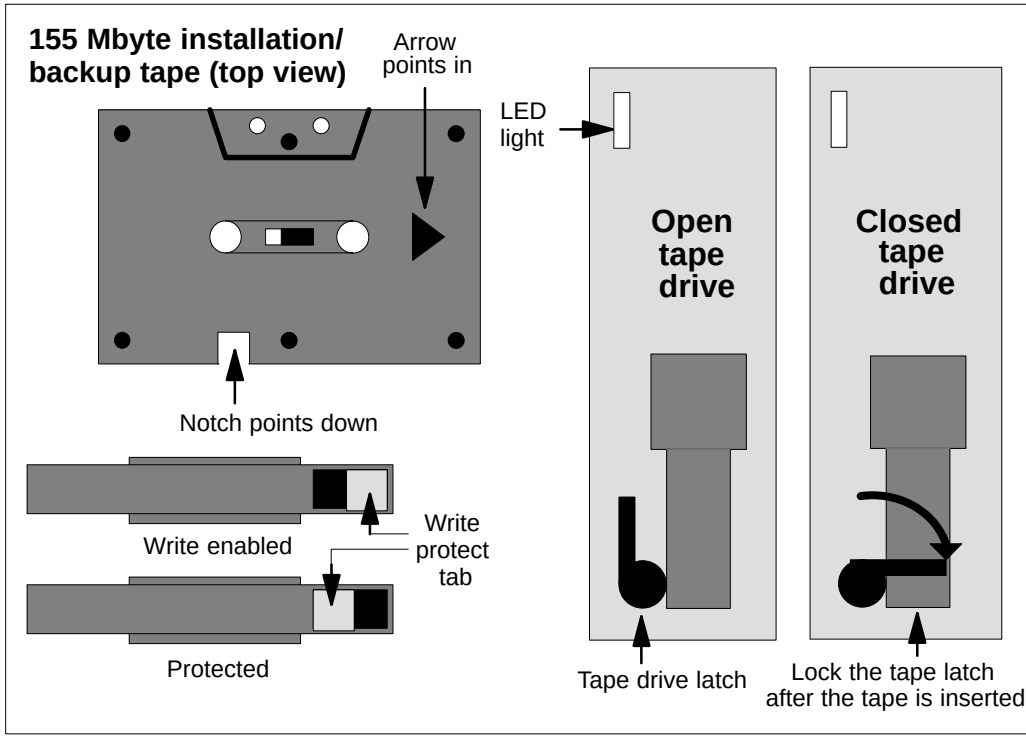
Note: A 155 Mbyte tape can be used with the 600 Mbyte tape drive but is read–only.

Figure 5-2
Inserting a cassette into the 600 Mbyte tape drive of a Meridian MAX 9 IPE/IPE-E



Note 1: A 155 Mbyte tape can be used with the 600 Mbyte tape drive but as read-only.
Note 2: The arrow on the back of the tapes points toward the drive when inserting.

Figure 5-3
Inserting a cassette into the 155 Mbyte tape drive of a Meridian MAX IPE



Removing the front panel

To insert or remove a cassette tape from the Meridian MAX module's tape drive, the front panel may be removed 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 21–81) is properly replaced. You must always close and properly latch all panels while the Meridian MAX module is powered on.

This procedure ensures that the temperature within the cabinet remains reasonably constant and within the operating temperatures of the equipment.

Cleaning the tape drive

The tape drive should be replaced when you receive repeated errors when attempting to write to tape. You should also consider replacing the tape drive if the light on the front of the tape drive is out or if you cannot hear or see the tape spinning.

The tape cartridge cavity should be cleaned

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

To clean the tape drive, use a head–cleaning cartridge. For more information on cartridges, contact your Nortel distributor.

Reading the tape labels

When following instructions within the procedures regarding cassette tapes, this document refers to the tapes by functional application names, rather than by the labels you see on the different tapes.

Table 5-1 cross-references the tape application name used within a procedure and the label on the tape.

Table 5-1
Tape names

Tape name used in procedure	Tape label
Generic Operating System tape (Tape 1 of 2)	1 of 2 Meridian MAX 9.xx Operating System Tape NT1R36BA A0743606
Meridian MAX Application tape (Tape 2 of 2)	2 of 2 Meridian MAX 9.xx Application Tape Requires: O/S MAX R9.xx NT1R34BA A0743604

Reinstalling software

If a problem arises with an installation, you may have to reinstall the software. 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 these problems before restarting the installation. If no hardware problem exists, then restart the installation. If the problem persists, contact your distributor or Nortel support group for assistance.

Reentry points

Meridian MAX 9 software has four installation reentry points. If a software installation must be aborted at some point, the installation can be restarted from the last successfully completed section of the installation. For example, if an installation had to be aborted after the OS files had been copied to the hard disk, but before the application files were copied, the installer can skip over the successfully copied OS files and go to the point just before the application files were copied.

The reentry points are

- from the beginning
- prior to copying the OS files to the hard disk
- prior to copying the MAX application files to the hard disk
- prior to booting from the hard disk

Retained port assignments

All port assignments are not retained and must be reconfigured if

- you are performing an installation upgrade that involves a change in hardware platform

  or

- the number of available ports on the new system is less than the number of available ports on the old system
- a change occurs in the status of certain options that can be purchased

If your upgrade has no hardware platform change and the new number of ports is equal to or greater than the number of ports on the previous system, all port assignments are retained.

Port assignments are retained if you upgrade from an IPE to IPE-E or a SNN to SNN-E.

When performing an installation upgrade with a hardware platform change, the installer must reenter the communication port assignments.

If you want to change your port assignments after the installation is complete, you must alter the port assignments through maintenance. Refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), “Maintenance and administration programs: system running” or “Maintenance and administration programs: system shutdown” chapter, “Configure Meridian MAX System” section, for more information.

Upgrading to Meridian MAX 9

Follow Procedure 5-1 to upgrade or reinstall your Meridian MAX 9 software.

System messages referring to the current release of Meridian MAX software may differ from those that appear in this procedure. For example, a message in this procedure may read "MAX Release 8," but if your system is a Meridian MAX 9, then the prompt from your system would read "MAX Release 9."

CAUTION
Risk of data corruption
Do not power off a module without first performing the system shutdown procedure.

The Meridian MAX module must not be powered off 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.

Procedure 5-1
Upgrading to Meridian MAX 9

1 Log in to your maintenance console as **maint**.

2 Shut down your Meridian MAX software.

If you do not shut down the system, the backup tape will not contain the current day's data.

For instructions on shutting down the Meridian MAX, refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), "Maintenance and administration programs: system running" chapter, "View/Modify Meridian MAX options" section, "Shut down the system" subsection.

3 At the Meridian MAX Maintenance and Administration menu, choose option **b**, Backup and Restore Utilities.

4 From the Backup and Restore Utilities menu, choose option **b** again, *Backup Customer Data to Tape*, to save the Meridian MAX system's database to the tape.

This ensures that all current Meridian MAX data is backed up.

This procedure uses cassette tapes. Care must be taken to avoid damaging the tape, as its fragile nature can result in tape errors during the installation procedure. Keep tapes away from excessive heat or electromagnetic radiation.

Insert the tape. If your system contains a 155 Mbyte tape drive, rotate the tape drive latch clockwise until the latch handle is horizontal.

5 After the backup is finished, remove the tape and label it "Backup Tape." Include the date and time of the backup on the label.

6 Set the backup tape to write–protect.

7 Return to the Meridian MAX Maintenance and Administration menu.

8 Select **r** for the *Restart & Power Down System Utilities* option.

9 From the Restart & Power Down System Utilities menu, select **s** for the *Secure the System for Power Down* option.

10 When prompted, select **y** to confirm that the system is to be secured for a power down.

11 Wait until you see the message: "System Secured for Powering Down."

12 Turn off the power to the Meridian MAX module.

Follow the power-down procedure in the "Meridian MAX power-down procedure" chapter to power down the system. Perform any necessary hardware installation upgrades.

13 Ensure that the CPU card has been configured correctly.

If you have an SNN/SNN-E system, refer to the "Hardware upgrades" chapter, "Application module (SNN/SNN–E) hardware upgrades" section, "Configuring the CPU card" subsection.

If you have an IPE/IPE-E system, refer to the "Hardware upgrades" chapter, "IPE/IPE-E hardware upgrades" section, "Configuring the SMM167 card" subsection.

14 Insert the Meridian MAX 9 Operating System tape (Tape 1 of 2), and power up the module.

On the SNN/SNN-E system, the power switch is located on the left-hand side of the AEM module. The upper switch controls the power for the application module in the left side of the AEM, while the lower switch controls the power for the right side.

On the IPE/IPE-E system, it is located above the tape drive.

The system displays the copyright and hardware configuration information. Your system messages may differ.

```
Copyright Motorola Inc. 1988 – 1995, All Rights Reserved

xxxxxxx Debugger/Diagnostics Release Version 1.2 – 02/28/95
```

Note: (The “xxxxxxx” will be MVME177 for SNN-E, MVME167 for SNN, and M4120 for IPE/IPE-E.)

```
COLD Start

Local Memory Found =xxxxxxxx (&xxxxxxxx)
```

Note: (The “xxxxxxx (&xxxxxxxx)” will be 04000000 (&63528960) for SNN-E, 02000000 (&33554432) for SNN, and 01000000 (&16777216) for IPE/IPE-E.)

```
MPU Clock Speed =xxMhz
```

***Note*:** (The “xx” will be 50 Mhz for SNN-E, 33 Mhz for SNN, and 25 Mhz for IPE/IPE-E.)

```
Autoboot in progress... To abort hit <BREAK>
```

15 Press **{BREAK}** to stop the hard disk load and begin the tape load.

Note: {F5} on the VT520 and VT420 is equivalent to the {BREAK} key.

The system displays the following prompt.

```
––Break Detected––

xxx–Bug>
```

Note: (The “xxx” will be 177 for SNN-E, 167 for SNN, and 4120 for IPE/IPE-E.)

16 Wait for the tape to rewind. The tape drive light turns off when the tape is rewound.

17 If a hardware upgrade has been performed, enter **iot;t** followed by **{RETURN}** at the xxx–Bug prompt to ensure that the CPU can access the disk/tape unit.

The following message appears.

```
Device  Addr    Vers    Revision   Serial#      Blocks  Size    Vendor Description

------  ----    ----    --------   -------      -------  ----    ------------------

Disk     00     0002    8770...    .......      2054325 0512    SEAGATE ST11200N

Tape     40     0001    RV J...    .......      0000000 0000    TEAC    MT–2ST/F50B
```

***Note*:** If a problem is detected, you are returned to the xxx–Bug prompt. Perform the necessary remedial action to correct the problem. If a problem is not detected, continue to the next step.

18 At the xxx–Bug prompt, enter **bo 0,40** followed by **{RETURN}**.

```
Booting from: xxxxxx, Controller 0, Drive 40
```

Note: (The "xxxxxx" will be VME177 for SNN-E, VME167 for SNN, and M4120 for IPE/IPE-E.)

```
Loading: Operating System

Volume: V/68

IPL loaded at: $001F0000

MVMETAPE IPL Version 1.0
```

There is a one- to two–minute delay before the system continues with the following:

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

System V/68 Release R3V8 xxxxxx Version 9707430
```

***Note*:** (The "xxxxxx" will be M68060 for SNN-E, and M68040 for SNN or IPE/IPE-E.)

```
                        Real mem       = xxxxxxxx
```

***Note*:** (The "xxxxxx" will be 65011712 for SNN-E, 31457280 for SNN, and 14680064 for IPE/IPE-E.)

```
                        Avail mem      = xxxxxxxx
```

***Note*:** (The "xxxxxx" will be 63111168 for SNN-E, 29859840 for SNN, and 13230080 for IPE/IPE-E.)

```
                        Buffers        = 60

**********************************************************

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INIT: SINGLE USER MODE

***

Control Key Assignments: erase = DEL kill = ^u intr = ~
quit = ^x

***

The following message shows the SCSI configuration.
```

```
xxx SCSI configuration
```

***Note*:** (The “xxx” will be 177 for SNN-E, and 167 for SNN or IPE/IPE-E.)

```
Device  Addr    Vers    Revision   Serial#      Blocks  Size    Vendor Description
------  ----    ----    --------   -------      -------  ----    ------------------
Disk     00     0002    8770...    .......      2054325 0512    SEAGATE ST11200N
Tape     40     0001    RV J...    .......      0000000 0000    TEAC    MT–2ST/F50B
```

```
This configuration is only an example. Your system
may differ.

Enter the correct date and time [mmddhhmmyyyy]:
```

19 Enter the correct date and time, followed by **{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 051212211996 is entered, the system asks you the following question:

```
Is the date Wed May 12 12:21:00 1996 correct? (y or n)
```

20 If the date or time, or both, that you entered is incorrect, enter **n**, followed by **{RETURN}**.The system then returns you to Step 19. If the date and time that you entered are correct, enter **y**, followed by **{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.
```

21 The system prompts you to enter your 20-character alphanumeric keycode followed by your Meridian 1/SL-1 serial number. These characters are represented by the pound key (#) followed by **{RETURN}**.

```
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/SL–1 serial number that
corresponds to this keycode, or ‘q’ to quit: #####
```

22 If the system is unable to decrypt the keycode, you are prompted to reenter the keycode or abort the procedure. If the problem persists, the system aborts the procedure and prompts you to contact your Nortel service representative.

If the keycode is decrypted successfully, the system continues with the following:

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

Option                                  Setting

------                                  -------

Serial Number                 :         #####

Platform                      :         SNN*

Number of Serial Ports        :         40

Max. Position IDs             :         1200

LAN Supervisor Sessions       :         25

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

MSL-1 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

Are the options correct? (y/n)
```

This configuration is an example. Your system options may differ.

Note that for an SNN/SNN-E system, the total number of configured, directly connected workstations plus the number of connected LAN supervisor sessions cannot exceed 60. For an IPE/IPE-E system, the number cannot exceed 20.

*** If a keycode for an IPE system is used in an IPE-E hardware configuration, a warning message appears. Action is not required because Meridian MAX automatically enters the proper platform associated with the keycode. Continue with the procedure after reading the warning message. This also occurs if an IPE-E keycode is used in an IPE platform.

23 If the options are incorrect, enter **n**. The system prompts you to reenter the keycode or abort the procedure. If the problem persists, the system aborts the procedure. Contact your Nortel service representative.

If the system configuration is correct, enter **y**.

24 If the MQA option or NACD option, or both, are enabled, a warning message appears.

If you wish to proceed, enter **y**.

25 If the configuration is recognized, the system displays the message shown in Step 27.

If the hard disk drive type cannot be identified, the system displays the following message:

```
The system has detected an unknown disk drive type: xxxxx xxxx
```

***Note*:** (The "xxxxxx xxxx" describes the model of the hard disk drive which has been detected.)

```
Please enter the correct drive type from the choices listed
below, or type "q" to abort the installation.

    1.  2.0 GB

    2.  1.2 GB  (Seagate 94601)

        1.2 GB  (CDC 94601)

    3.  1.0 GB

    4.  240 MB  (Fujitsu M2614 M2637S)

    5.  240 MB  (Seagate ST3283N)

    6.  180 MB  (Fujitsu M2614S)

    7.  172 MB  (CDC ST1201N)

        172 MB  (Seagate ST1201N)
```

```
        172 MB  (CDC 94315-200S)

        172 MB  (Seagate 94315-200S)

Enter a number from 1 to 7, or enter q to quit:
```

26 Select an entry which is the most appropriate for your Meridian MAX system.

27 The system displays the hardware configuration. The following configuration is only an example. Your system configuration may differ.

```
MAX has detected that you are running the following
hardware configuration:

        System          : Meridian MAX 9 SNN

        CPU             : 167 Card

        Memory          : 32 MB

        Hard Disk       : 1.0 GB (Seagate ST11200N)

        Tape Drive      : 600 MB (Teac MT–2ST/F50B)

If this configuration does not match your configuration,
or if this configuration is not the configuration ordered,
please type “n” to the following question. The installation
will abort. Please call your service representative for
further assistance.

 –––>   Do you wish to install the hardware configuration
        specified above (y/n) ?
```

28 If you want to abort the installation, enter **n**, followed by **{RETURN}**. If you want to install the hardware configuration, enter **y**, followed by **{RETURN}**.

The system displays the Meridian MAX Software Installation Menu.

```
The Meridian MAX Software Installation Menu

-------------------------------------------

    1   New Installation

    2   Installation Upgrade

    3   Application Upgrade

–––> Enter a number to select the type of
     installation/upgrade desired, or enter q to quit :
```

29 Since this procedure is a software upgrade, enter **2** or **3**, followed by **{RETURN}**.

Note: Your selection determines whether the words “installation upgrade” or “application upgrade” appear in some of the remaining prompts in this procedure.

30 If you are performing a reinstallation or an installation upgrade, the system displays the following message. (The system views a reinstallation as an installation upgrade.)

```
Will perform an Installation Upgrade.
```

If you are performing an application upgrade, the system displays the following message:

```
NOTE:  Application upgrades are only valid for a Meridian
MAX 9 to Meridian MAX 9 migration path. Do you wish to
continue (y/n)?
```

31 Enter **y** or **n**.

If y, the system continues with this message:

```
***>   Determining whether it is possible to perform an
       Application Upgrade...

Will perform an Application Upgrade.
```

32 The system continues.

```
--->   Do you wish to restart a previously-aborted
       installation (y/n)?
```

33 If you do not want to restart a previously aborted installation, enter **n**, followed by **{RETURN}**. Go to Step 35.

If you want to restart a previously aborted installation, enter **y**, followed by **{RETURN}**. The system continues.

```
***>   Determining whether the xxxxxx upgrade can be
       re-started...
```

Note: (The “xxxxxx” will be installation or application depending on the type of upgrade being performed.)

The system then displays a 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 xxxxxx upgrade from one of the
following stages:

1   From the Beginning

2   Just Before Copying OS Files to Hard Disk

3   Just Before Copying MAX Application Files to Hard Disk

4   Just Before Booting From Hard Disk

--> Enter a number to select the stage from which to
    install, or enter q to quit:
```

Note: (The "xxxxxx" will be installation or application depending on the type of upgrade being performed.)

34 If you want to quit, enter **q**, followed by **{RETURN}**. The system returns you to the Meridian MAX Software Installation Menu, from where you can restart the installation.

If you want to restart the upgrade from the beginning, enter **1**, followed by **{RETURN}**. The system displays the following message:

```
You have chosen to start the Meridian MAX xxxxxx upgrade
from the beginning.
```

Note: (The "xxxxxx" will be installation or application depending on the procedure being performed.)

If you want to restart the upgrade just before the OS files are copied to the hard disk, enter **2**, followed by **{RETURN}**. The system displays the following message:

```
You have chosen to start the Meridian MAX xxxxxx upgrade at
the point where the OS files are about to be copied to the
hard drive.
```

Note: (The "xxxxxx" will be installation or application depending on the procedure being performed.)

If you want to restart the upgrade just before the Meridian MAX application files are copied to the hard disk, enter **3**, followed by **{RETURN}**. The system displays the following message:

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

Note: (The “xxxxxx” will be installation or application depending on the procedure being performed.)

If you want to restart the upgrade just before the Meridian MAX system boots from the hard disk, enter **4**, followed by **{RETURN}**. The system displays the following message:

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

Note: (The “xxxxxx” will be installation or application depending on the procedure being performed.)

35 The system continues.

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

    Please enter either 'a' or 'p' :
```

If your Meridian MAX is in Agent-ID mode or has MQA enabled, enter **a**, followed by **{RETURN}**. If the system is in Position-ID mode, enter **p**, followed by **{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/SL-1 is in the same mode
as MAX.

Is the Meridian 1/SL-1 in XXXXX-ID mode (y/n)?
```

Note: (The “xxxxxx” is either agent or position, depending upon which you entered at the beginning of this step.)

36 If the Meridian 1 is in the same mode as the Meridian MAX, enter **y**, followed by **{RETURN}**.

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

```
--->    Do you wish to begin Meridian MAX xxxxxx upgrade
        (y, n, q, ?) [q]:
```

Note: (The “xxxxxx” will be installation or application depending on the procedure being performed.)

37 If you want to begin the installation, enter **y**, followed by **{RETURN}**. The system continues.

```
***>    Beginning xxxxxx upgrade (TIME)
```

Note: (The “xxxxxx” will be installation or application depending on the procedure being performed.)

```
***>    Checking tape in drive... (TIME)

***>    Retensioning Tape (in background)... (TIME)
```

If you chose not to restart a previously aborted installation in Step 30, go to Step 38.

If you chose reentry point 1 in Step 34 (to restart the installation from the beginning), go to Step 38.

If you chose reentry point 2 in Step 34 (to restart the installation just before copying the OS files to the hard disk), go to Step 39.

If you chose reentry point 3 in Step 34 (to restart the installation just before copying the application files to the hard disk), the system displays the following messages.

```
***>    Mounting root file system as /root (TIME)

***>    Mounting the usr file system as /root/usr (TIME)

***>    Installing MAX–specific configuration files (TIME)

***>    Setting permissions on installation disk’s root
        directory (TIME)
```

Go to Step 40.

If you chose reentry point 4 in Step 34 (to restart the installation just before booting from the hard disk for the first time), the system displays the following messages.

```
***>    Mounting root file system as /root (TIME)

***>    Mounting the usr file system as /root/usr (TIME)

The system has been reset to perform the installation
again, starting from the first boot from the hard disk.
Please perform the following steps:
```

```
1.  Remove the tape from the tape drive.

2.  Turn off the power for the module.

3.  Wait 20 seconds for the power to reset.

4.  Turn on the power for the module.

************************************************************

Please reboot the system now.

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

Go to Step 44.

38

```
************************************************************
Stage 1 – Formatting Hard Drive and Creating File Systems
************************************************************

***>    Formatting root file system's disk drive (TIME)
        This will take about xx minutes...
```

***Note*:** (The "xx" will be 10 with IPE, 20 with IPE-E or SNN, and 30 with SNN-E.)

```
***>    Writing slice table to /dev/rdsk/mxxx_00s7 (TIME)
```

***Note*:** (The "xxx" will be 177 with SNN-E, and 167 with SNN or IPE/IPE-E.)

```
***>    Creating the root file system (TIME)

***>    Labeling the root file system (TIME)

***>    Creating the swap file system (TIME)

***>    Labeling the swap file system (TIME)

***>    Creating the usr file system (TIME)

***>    Labeling the usr file system (TIME)

***>    Installing boot–loader on root file system's disk
        drive (TIME)
```

39

```
************************************************************
Stage 2 – Copying OS Files to Hard Disk
************************************************************

***>    Mounting root file system as /root (TIME)
```

The following two messages only appear if no reentry point was used, or if reentry point 1 was chosen:

```
***>    Making the /tmp directory (TIME)
```

```
***>    Making the /usr directory (TIME)

***>    Mounting usr file system as /root/usr (TIME)

***>    Waiting for tape to complete retensioning (TIME)

***>    Copying files; this will take from 10 to 20 minutes
        depending upon your system configuration... (TIME)

***>    Making the root file system lost+found directory
        (TIME)

Reserving xxx entries
```

***Note*:** (The “xxx” will be 128 with IPE and 224 with SNN/SNN-E or IPE-E.)

```
***>    Making the usr file system lost+found directory
        (TIME)

Reserving xxxx entries
```

***Note*:** (The “xxx” will be 704 with IPE, and 1312 with SNN/SNN-E or IPE-E.)

The following message only appears if no reentry point was used, or if reentry point 1 was chosen:

```
***>    Installing /etc/badtracks/mxxx_00 bad spot list
        (TIME)
```

***Note*:** (The “xxx” will be 177 with SNN-E, and 167 with SNN or IPE/IPE-E.)

```
***>    Creating sysadm(1M) package information file (TIME)

***>    Setting up the new operating system (TIME)

***>    Creating root and usr file system associated device
        nodes (TIME)

***>    Installing MAX–specific configuration files (TIME)

***>    Setting permissions on installation disk’s root
        directory (TIME)

40 ********************************************************
    Stage 3 — Copying MAX Application Files to Hard Disk
   ********************************************************

   Please remove the OS tape from the tape drive and put in
   the Meridian MAX Application Tape.
```

41 Remove the OS tape from the tape drive and insert the application tape (Tape 2 of 2).

Wait for the tape to rewind. The tape drive light turns off when the tape is rewound.

```
--->    Did you insert the application tape in the tape
        drive (y/n)?
```

42 If you followed the instructions given in Step 41 and the tape drive light is off, enter **y**, followed by **{RETURN}**.

The system continues.

```
***>    Checking tape in drive... (TIME)

***>    Copying files; this will take from 10 to 20 minutes
        depending upon your system configuration... (TIME)
```

43

```
*********************************************************
Stage 4 – Preparing to Reboot from Hard Disk
*********************************************************

***>    Unmounting all mounted file systems (TIME)

***>    Synchronizing the installation disk (TIME)

*********************************************************

  The Meridian MAX product has been installed on the hard
  disk.

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

**************************

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

44 After you turn off the power for the module, wait 20 seconds, and turn the power on again. The system automatically reboots. Your system messages may differ.

```
Copyright Motorola Inc. 1988 – 1995, All Rights Reserved

xxxxxxx Debugger/Diagnostics Release Version 1.3 – 12/3/95
```

***Note*:** (The “xxxxxxx” will be MVME177 with SNN-E, MVME167 with SNN, and M4120 with IPE/IPE-E.)

```
COLD START

Local Memory Found =xxxxxx (&xxxxxxxxx)
```

***Note*:** (The “xxxxxxxx (&xxxxxxxxx)” will be 04000000 (&62108864) for SNN-E, 02000000 (&33554432) with SNN, and 01000000 (&16777216) with IPE/IPE-E.)

```
MPU Clock Speed =xxMhz
```

***Note*:** (The “xx” will be 50 Mhz with SNN-E, 33 Mhz with SNN, and 25 Mhz with IPE/IPE-E.)

```
Autoboot in progress... To abort hit <BREAK>

Booting from: xxxxxx, Controller 0, Drive 0
```

***Note*:** (The “xxxxxx” will be VME177 with SNN-E, VME167 with SNN, and M4120 with IPE/IPE-E.)

```
Loading: Operating System

Volume: $00000000

IPL loaded at: $001F0000

VME Disk IPL Version 52.2

***

erase = DEL  kill = ^u  intr = ^c  quit = ^x

***
```

Note: The previous message indicates that the keys **{CONTROL} {C}** pressed simultaneously cause a system interruption which terminates the current process. The **{DEL}** key deletes and backspaces one character.

```
--->The INSTALLATION UPGRADE process requires you to use
    a Customer Data Backup Tape from your previous Meridian
    MAX system.

    Please insert this backup tape into the internal
    cassette tape drive now.

    If you have no backup tape, or you wish to avoid
    installing the backup data, type “c” at the following
    prompt. This will change the INSTALLATION UPGRADE to a
    NEW INSTALLATION, and no data from your old system will
    be loaded onto the new system.
```

Note: If you are performing an application upgrade, the previous messages would display `APPLICATION UPGRADE` instead of `INSTALLATION UPGRADE.`

```
Is the backup tape inserted in the internal cassette tape
drive (y/n/c/q) ?
```

45 If you do not have a backup tape or you want to avoid installing your backup data, enter **c**, followed by **{RETURN}**.

The following message appears:

```
***>   Continuing as a NEW INSTALLATION...
```

Go to Step 46.

If you want to install your backup tape, insert the tape into the tape drive and enter **y**, followed by **{RETURN}**.

The following messages appear:

```
***>   Checking for Meridian MAX Customer Data Backup
       Tape...

***>   Customer Data Backup Tape is correctly inserted.

***>   Continuing with the INSTALLATION UPGRADE...
```

***Note*:** If you are performing an application upgrade, the previous message would display APPLICATION UPGRADE instead of INSTALLATION UPGRADE.

46 `xxx SCSI configuration`

***Note*:** (The “xxx” will be 177 with SNN-E, and 167 with SNN or IPE/IPE-E.)

```
Device  Addr    Vers   Revision   Serial#     Blocks  Size    Vendor Description

------  ----    ----   --------   -------     -------  ----   ------------------

Disk     00     0002   8770...    .......     2054325 0512    SEAGATE ST11200N

Tape     40     0001   RV J...    .......     0000000 0000    TEAC    MT–2ST/F50B
```

```
This configuration is only an example. Your system
may differ.

Enter <CR> to pause in a single user shell before init.

Default boot sequence continuing...

The system is coming up. Please wait.

Updating serial devices for current CPU
```

```
mount –f S51K /dev/usr /usr

Checking for system dump messages ...

Checking for system dump

Expreserve notification performed.

Downloading MVME332XT Line Disciplines.
```

***Note*:** (The previous message only appears on SNN/SNN-E platforms.)

```
Error logging started.

OSM Logging Started.

***>    Configuring port devices... (TIME)

***>    Finished configuring port devices... (TIME)

port_hold started
```

***Note*:** (The previous message only appears if the OS files were copied to disk.)

```
Transport Provider daemon started.

Internet services provided.

portmap started.

Stream Error logging started.

netspec “tcpip” not set up.

Network Commands: rwalld

routed started.

NFS Startup...

ONC daemons:

NFS daemons:

Lock manager:

NFS Startup complete.

Line printer scheduler started.

Module ID = MAX00

MAX Configuration = 1 Module(s)

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

If you switched your installation/application upgrade to a new installation, go to Step 50.

47 `***>  Extracting the MAX release number from tape... (TIME)`

`***>  Extracting Previous Database Backup from tape... (TIME)`

`The extraction process will take between 15 and 30 minutes depending on the sizes of the databases.`

If the time of the extraction cannot be estimated from the backup tape, the above message appears. If the extraction time can be estimated, the following message appears:

`The extraction process will take approximately xx minutes.`

***Note*:** (The “xx” is the number of minutes determined by the system.)

`***>  Finished extracting the backup data from tape. (TIME)`

`***>  Checking the file delete chain and integrity of databases...(TIME)`

`Database integrity checks can take from 5 to 15 minutes, depending on the sizes of the databases.`

`***>  Finished checking the databases. (TIME)`

`>>>>  Beginning Phase I of Database Conversion to Meridian MAX 9... (TIME)`

If your backup tape was created while the system was shut down, go to Step 49.

48 `***>  The MAX 03.xx customer data tape was created while the MAX was running.`

***Note*:** If you are upgrading from another release of Meridian MAX, the release number of that system is reflected in the previous message.

`Updating the database for data integrity...(TIME)`

`This process will take between 30 and 60 minutes depending on the sizes of the databases.`

`Backup Day Number = XXXX (Day Month Date Year)`

***Note*:** (The “xx” is the encoded date of the backup.)

```
update i_acddn (1 of 12) (TIME)
update i_actvy (2 of 12) (TIME)
update i_agent (3 of 12) (TIME)
update i_cdn   (4 of 12) (TIME)
update i_cdntar (5 of 12) (TIME)
update i_dnis  (6 of 12) (TIME)
update i_ovrflw (7 of 12) (TIME)
update i_route (8 of 12) (TIME)
update i_trunk (9 of 12) (TIME)
update i_agent (10 of 12) (TIME)
update fc_AUDIT (11 of 12) (TIME)
update fcPARVAL (12 of 12) (TIME)
```

49

```
***>    Converting Release x.xx System database to
        Release 09.xx. (TIME)
```

***Note*:** If you are upgrading from another release of Meridian MAX, the release number of that system is reflected in the previous message.

```
***>    Creating the System database — please wait...
        (TIME)

        System database created.

***>    Loading MAX 9 system data files...

        Extracting previous system data files...

        Loading more MAX 9 system data files...

        Data files loaded
```

***Note*:** The previous three lines appear only if you a performing an upgrade. If you have switched to a new installation, the following lines appear:

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

        Data files loaded
```

50 The system displays the language options installed on your system. The language options listed below are provided as an example only. Your system language options may differ.

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

               Default:       English

               Secondary:     French

--->    Would you like to change your secondary language
        (y/n)?
```

***Note*:** If the upgrade is executed with re–entry point #4, the languages which have already been selected are shown. This also applies to a new installation using re–entry point #4. Go to Step 56.

51 If the language options displayed by the system are correct and you do not want to change them, enter **n**, followed by **{RETURN}.** Go to Step 55.

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

52 The system displays 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:
```

53 Enter the number associated with the secondary language option you want to install, followed by **{RETURN}**.

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

```
--->    Are the language options correct (y/n)?
```

54 If the language options displayed are not correct and you want to change them, enter **n**, followed by **{RETURN}**. Go to Step 52.

If the language options displayed are correct, enter **y**, followed by **{RETURN}.**

55 If you switched the upgrade to a new installation, the last two messages in this step do not appear.

```
***>    Creating USER LANGUAGE database – please wait...
        (TIME)

        USER LANGUAGE database created.

        Converting previous release User Language
        Database...

        Conversion completed.
```

If you switched the upgrade to a new installation, go to Step 57.

56 `<<<< Finished Phase I of Database Conversion.`

```
>>>>   Beginning Phase II of Database Conversion to
       Meridian MAX 9... (TIME)

***>   Converting Release 0x.xx Historical Data database
       to Release 09.xx... (TIME).
```

***Note*:** If you are upgrading from another release of Meridian MAX, the release number of that system is reflected in the previous message.

```
***>   Preparing the Historical Data database... (TIME)
```

57
```
---->  Which customer number would you like this MAX site
       to use ?
```

Enter the number between 0 and 99 (inclusive) that corresponds to the customer number assigned to your Meridian 1 switch, followed by **{RETURN}**.

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

***Note*:** (The “xx” is the customer number you entered.)

58 The system displays the Meridian MAX Hardware and System Parameters screen.

Refer to the “Meridian MAX system configuration” chapter for instructions on how to assign your system ports and Meridian MAX system parameters.

59 When you have completed the system capacity configuration screens, the system continues with the installation.

60 If you switched your installation upgrade to a new installation, go to Step 64.

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

This process requires a scratch tape for temporary storage.

Please insert a scratch tape into the tape drive. Make sure
that the tape is not write-protected.

The small LED on the front of the tape drive will light up
and can stay lit from 20 seconds to 3 minutes. This is to
allow time for the tape to rewind.

(If you have inserted the tape backwards in the drive, the
tape will be ejected immediately. Please re-insert it
correctly.)

Press ENTER when the LED is no longer lit.
```

61 If you have inserted the scratch tape into the tape drive, and the tape drive light is off, press **{RETURN}**.

The system continues.

```
***>   Testing scratch tape...

Tape test successful. Proceeding...
```

62 `Beginning of the conversion of the MAX x Historical Data database to MAX 9 Historical Data database.`

`This process will take approximately xx minutes to execute.`

***Note*:** (The “xx” is the process time determined by the system.)

***Note*:** Depending on what you changed in the system capacities screens, the system may display unloading and reloading messages. This list is the maximum number of tables. Your system may not display all of these.

```
Unloading table   ‘i_acddn ’   ( 1 of 37 tables)     (TIME)

Unloading table   ‘d_acddn ’   ( 2 of 37 tables)     (TIME)

Unloading table   ‘m_acddn ’   ( 3 of 37 tables)     (TIME)

Unloading table   ‘w_acddn ’   ( 4 of 37 tables)     (TIME)

Unloading table   ‘i_ovrflw’   ( 5 of 37 tables)     (TIME)

Unloading table   ‘d_ovrflw’   ( 6 of 37 tables)     (TIME)

Unloading table   ‘w_ovrflw’   ( 7 of 37 tables)     (TIME)

Unloading table   ‘m_ovrflw’   ( 8 of 37 tables)     (TIME)

Unloading table   ‘i_agent ’   ( 9 of 37 tables)     (TIME)

Unloading table   ‘d_agent ’   (10 of 37 tables)     (TIME)

Unloading table   ‘w_agent ’   (11 of 37 tables)     (TIME)

Unloading table   ‘m_agent ’   (12 of 37 tables)     (TIME)

Unloading table   ‘i_route ’   (13 of 37 tables)     (TIME)

Unloading table   ‘d_route ’   (14 of 37 tables)     (TIME)

Unloading table   ‘w_route ’   (15 of 37 tables)     (TIME)

Unloading table   ‘m_route ’   (16 of 37 tables)     (TIME)

Unloading table   ‘i_trunk ’   (17 of 37 tables)     (TIME)

Unloading table   ‘d_trunk ’   (18 of 37 tables)     (TIME)

Unloading table   ‘w_trunk ’   (19 of 37 tables)     (TIME)

Unloading table   ‘m_trunk ’   (20 of 37 tables)     (TIME)
```

```
Unloading table  ‘i_dnis  ’  (21 of 37 tables)     (TIME)
Unloading table  ‘d_dnis  ’  (22 of 37 tables)     (TIME)
Unloading table  ‘w_dnis  ’  (23 of 37 tables)     (TIME)
Unloading table  ‘m_dnis  ’  (24 of 37 tables)     (TIME)
Unloading table  ‘i_actvy ’  (25 of 37 tables)     (TIME)
Unloading table  ‘d_actvy ’  (26 of 37 tables)     (TIME)
Unloading table  ‘w_actvy ’  (27 of 37 tables)     (TIME)
Unloading table  ‘m_actvy ’  (28 of 37 tables)     (TIME)
Unloading table  ‘i_cdn   ’  (29 of 37 tables)     (TIME)
Unloading table  ‘d_cdn   ’  (30 of 37 tables)     (TIME)
Unloading table  ‘w_cdn   ’  (31 of 37 tables)     (TIME)
Unloading table  ‘m_cdn   ’  (32 of 37 tables)     (TIME)
Unloading table  ‘i_cdntar’  (33 of 37 tables)     (TIME)
Unloading table  ‘d_cdntar’  (34 of 37 tables)     (TIME)
Unloading table  ‘w_cdntar’  (35 of 37 tables)     (TIME)
Unloading table  ‘m_cdntar’  (36 of 37 tables)     (TIME)
Unloading table  ‘l_agent ’  (37 of 37 tables)     (TIME)
```

Each table is reloaded. All the tables that were unloaded are reloaded.

```
Creating a new database (TIME)
Reloading table  ‘i_acddn ’  ( 1 of 37 tables)     (TIME)
Reloading table  ‘d_acddn ’  ( 2 of 37 tables)     (TIME)
Reloading table  ‘w_acddn ’  ( 3 of 37 tables)     (TIME)
Reloading table  ‘m_acddn ’  ( 4 of 37 tables)     (TIME)
Reloading table  ‘i_ovrflw’  ( 5 of 37 tables)     (TIME)
Reloading table  ‘d_ovrflw’  ( 6 of 37 tables)     (TIME)
Reloading table  ‘w_ovrflw’  ( 7 of 37 tables)     (TIME)
Reloading table  ‘m_ovrflw’  ( 8 of 37 tables)     (TIME)
Reloading table  ‘i_agent ’  ( 9 of 37 tables)     (TIME)
Reloading table  ‘d_agent ’  (10 of 37 tables)     (TIME)
```

```
Reloading table  'w_agent '  (11 of 37 tables)     (TIME)
Reloading table  'm_agent '  (12 of 37 tables)     (TIME)
Reloading table  'i_route '  (13 of 37 tables)     (TIME)
Reloading table  'd_route '  (14 of 37 tables)     (TIME)
Reloading table  'w_route '  (15 of 37 tables)     (TIME)
Reloading table  'm_route '  (16 of 37 tables)     (TIME)
Reloading table  'i_trunk '  (17 of 37 tables)     (TIME)
Reloading table  'd_trunk '  (18 of 37 tables)     (TIME)
Reloading table  'w_trunk '  (19 of 37 tables)     (TIME)
Reloading table  'm_trunk '  (20 of 37 tables)     (TIME)
Reloading table  'i_dnis  '  (21 of 37 tables)     (TIME)
Reloading table  'd_dnis  '  (22 of 37 tables)     (TIME)
Reloading table  'w_dnis  '  (23 of 37 tables)     (TIME)
Reloading table  'm_dnis  '  (24 of 37 tables)     (TIME)
Reloading table  'i_actvy '  (25 of 37 tables)     (TIME)
Reloading table  'd_actvy '  (26 of 37 tables)     (TIME)
Reloading table  'w_actvy '  (27 of 37 tables)     (TIME)
Reloading table  'm_actvy '  (28 of 37 tables)     (TIME)
Reloading table  'i_cdn   '  (29 of 37 tables)     (TIME)
Reloading table  'd_cdn   '  (30 of 37 tables)     (TIME)
Reloading table  'w_cdn   '  (31 of 37 tables)     (TIME)
Reloading table  'm_cdn   '  (32 of 37 tables)     (TIME)
Reloading table  'i_cdntar'  (33 of 37 tables)     (TIME)
Reloading table  'd_cdntar'  (34 of 37 tables)     (TIME)
Reloading table  'w_cdntar'  (35 of 37 tables)     (TIME)
Reloading table  'm_cdntar'  (36 of 37 tables)     (TIME)
Reloading table  'l_agent '  (37 of 37 tables)     (TIME)
     ***> End of Historical Data database update.
          Please remove the scratch tape from the tape drive.
```

```
<<<<< Finished Phase II of Database Conversion
```

63 Remove the scratch tape from the tape drive.

Go to Step 65.

64
```
***>    Historical Data database update starts.

***>    Creating the MAX 9 Historical Data database for
        training mode.

This process takes approximately 5 minutes to execute.

Creating a new database (TIME)

***>    End of Historical Data database update.

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

        Historical Data database loaded.

***>    Setting the time to Thu Jun 22 12:00 1989 for
        Training mode.
```

65
```
Loading System Language Strings ...

Loading System Language Strings completed.

Starting MAX OSM Logger, Please Wait ...

OSM Logging Stopped.

MAX OSM Logging Started.

Meridian MAX release 09.xx
```

If you completed a new installation, the system displays the following message:

```
Meridian MAX Training Mode
```

If you completed an upgrade, the system displays the following message:

```
Meridian MAX Precut Mode

Please login as precut for more details

The system is ready.

Console Login:
```

66 Before logging in, ensure that the installation was successful. Review the Meridian MAX error log for any fatal messages.

Log in as **maint** and refer to the *Meridian MAX 9 Maintenance and Diagnostics Guide* (NTP 553-4001-811), “Maintenance and administration programs: system running” chapter, “Diagnostics” section, “View MAX error log” subsection, for more information.

67 Ensure that the correct system options were enabled.

Log in as **maint** and refer to the *Meridian MAX 9 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.

68 If the system was installed correctly, go to Step 69.

If the system was not installed correctly, you must 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 distributor.

69 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. The importance of backups is explained in the *Meridian MAX 9 Installation Guide* (NTP 553-4001-111), “Software installation overview” chapter, “Backups” section.

70 Log in as **precut**.

If you completed a new installation, the Meridian MAX Training Mode screen appears.

Refer to the *Meridian MAX 9 Installation Guide* (NTP 553-4001-111), “Operating modes” chapter, “Switching from Training mode to Precutover mode” procedures, for instructions on how to switch your system to precutover mode.

If you completed an installation upgrade, the Meridian MAX Precutover Mode screen appears.

Refer to the *Meridian MAX 9 Installation Guide* (NTP 553-4001-111), “Operating modes” chapter, “Switching from Precutover mode to Product mode” procedures, for instructions on how to switch your system to product mode.

Chapter 6: Load new software

Follow Procedure 6-1 to

- install a new issue of the Meridian MAX 9 software onto an existing Meridian MAX 9 SNN, SNN-E, IPE, or IPE-E system
- change your system's language options

Note: These procedures should be used only if the new software's options are identical to your existing options. If the new software options are different from your existing options, refer to the "Software upgrades and reinstallations" chapter.

Procedure 6-1
Load new software release to a Meridian MAX

1 Using the Maintenance console, log in as **maint**.

The system will display the following:

```
Password:
```

2 Enter the maintenance password.

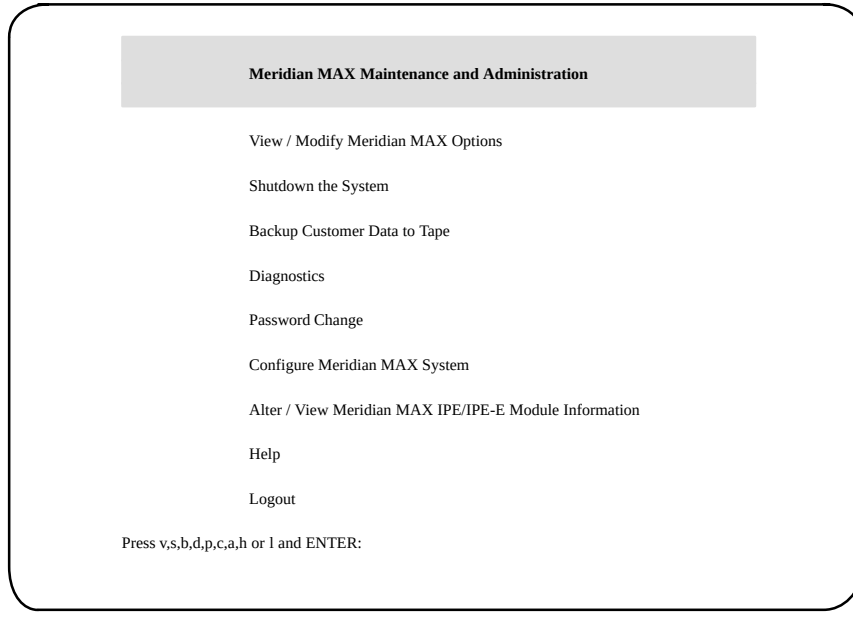
Once you enter the password, the system displays copyright and hardware configuration information followed by the prompts.

```
***

erase = DEL  kill = ^u  intr = ^c  quit = ^x

***
```

Note: The previous message indicates that the keys **{CONTROL} {C}** pressed simultaneously cause a system interruption which terminates the current process. The **{DEL}** key deletes and backspaces one character.

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



Note: The "*Alter/View Meridian MAX IPE/IPE-E Module Information*" menu option is available only on IPE/IPE-E hardware platforms.

3 Enter **s**, followed by **{RETURN}**, to shut down the system.

The screen clears and then asks you to confirm your choice:

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

(Just ENTER to quit)
```

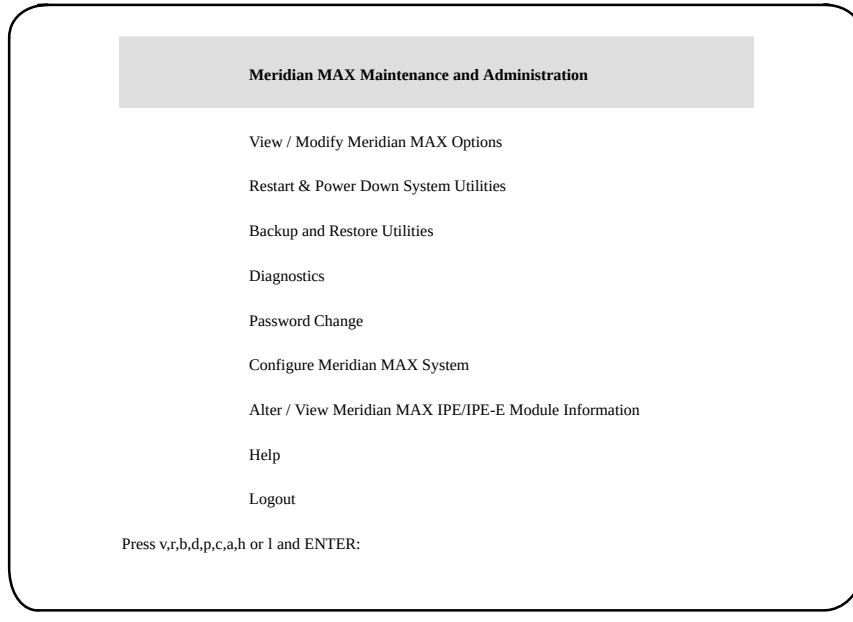
4 Enter **y**, followed by **{RETURN}**, to confirm the shutdown of the system.

The system displays the following:

```
Meridian MAX terminating...

Signal forces mapa_logger termination

cron aborted: SIGTERM
```

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

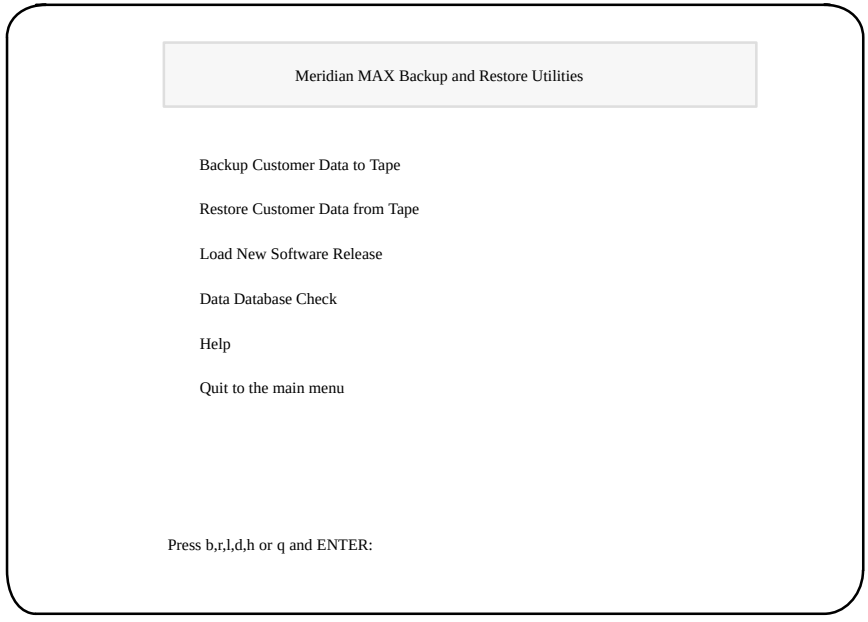
Figure 6-2
Maintenance and Administration menu—system shutdown



5 Enter **b**, followed by **{RETURN}**, to go to the Backup and Restore Utilities menu.

The system displays the Backup and Restore Utilities menu.

Figure 6-3
Meridian MAX Backup and Restore Utilities menu



6 Enter **l**, followed by **{RETURN}**, to run the Load New Software Release utility.

The system displays the following messages:

```
Upgrade of Meridian MAX software requires that you save the
current contents of the hard disk on a tape. Do you want to
save the contents of the hard disk on a tape (y/n)?
```

7 If you have just made a backup of the hard disk, enter **n**, followed by **{RETURN}**, and go to Step 10.

If you have not made a current backup, or you are not sure whether the backup you have is current, then enter **y**, followed by **{RETURN}**, in response to this prompt.

The system displays the following messages:

```
Please insert a blank (600M) tape into the tape drive.

The small LED on the front of the tape drive will light up
and can stay lit from 20 seconds to 3 minutes. This is to
allow time for the tape to rewind.

(If you have inserted the tape backwards in the drive, the
tape will be ejected immediately. Please re-insert it
correctly.)

Press y and ENTER to begin the data backup procedure when
the LED is no longer lit.
(Just ENTER to quit)
```

Note: If you have an IPE system with a 155 Mbyte tape drive, you are instructed to enter a “blank tape.” If you have an IPE system with a 600 Mbyte tape drive, you are instructed to enter a “blank 600M tape.”

8 If you have inserted the backup tape correctly and want to begin the data backup, enter **y**, followed by **{RETURN}**.

The system continues.

```
Checking for a blank (600M) tape...

Backup of customer data starting.

Estimated time for backup is xx minute(s).
```

(where xx is the time the system estimates for the backup)

```
Verifying the backup.

Backup of customer data is completed.

Please remove the tape and save it.

Press ENTER to continue.
```

9 Remove the tape from the tape drive and press **{RETURN}** to continue.

10 The system continues.

```
Upgrade of Meridian MAX software begins.

Do you wish to continue (y/n) ?
```

11 Enter **y**, followed by **{RETURN}**.

```
Please insert the cassette tape containing Meridian MAX
Software which will be copied on the hard disk.

Did you put in the cassette tape?

Please enter yes/no/quit–to abort (y/n/q)
```

12 Insert the cassette tape (Tape 2 of 2) which contains the new Meridian MAX application software into the module's tape drive. If it is an IPE system, latch the tape drive closed.

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

The system displays the following messages:

```
The tape drive is now rewinding the tape. Please wait.

This will take anywhere from 20 seconds to 2 minutes.

Tape is finished rewinding.

***>   Checking tape in drive

***>   Copying files from tape to disk; please wait a few
       minutes... (TIME)
```

13 The system prompts you to enter your 20-character alphanumeric keycode, followed by your Meridian 1/SL-1 serial number. These characters are represented by the pound key (#), followed by **{RETURN}**.

```
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/SL–1 serial number that
corresponds to this keycode, or 'q' to quit: #####
```

14 If the system is unable to decrypt the keycode, you are prompted to reenter the keycode or abort the procedure. If the problem persists, the system aborts the procedure and prompts you to contact your Nortel service representative.

If the keycode is decrypted successfully, the system continues with the following:

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

Option                                  Setting

------                                  -------

Serial Number                  :        #####

Platform                       :        xxx*
```

Note: (The "xxx" could be SNN, SNN-E, IPE, or IPE-E.)

```
Number of Serial Ports         :        40

Max. Position IDs              :        1200

LAN Supervisor Sessions        :        25

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

MSL-1 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

Are the options correct? (y/n)
```

This configuration is an example. Your system options may differ.

Note that for an SNN/SNN-E system, the total number of configured, directly connected workstations plus the number of connected LAN supervisor sessions cannot exceed 60. For an IPE/IPE-E system, the number cannot exceed 20.

15 The system then prompts you to confirm your system configuration. If the options are incorrect, enter **n**. The system prompts you to reenter the keycode or abort the procedure.

If the system configuration is correct, enter **y**. The system continues.

```
***>    Copying more files from tape to disk; also unpacking them.
        To do this will take about 10 minutes... (TIME)

        Creating the System database – please wait... (TIME)

***>    System database created.

***>    Loading MAX 9 system data files...

        Extracting previous system data files...

        Loading more MAX 9 system data files...

        Data files loaded
```

16 The system displays the language options installed on your system. The language options listed below are provided as an example only. Your system language options may differ.

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

                Default:        English

                Secondary:      French

--->    Would you like to change your secondary language
        (y/n)?
```

17 If the language options displayed by the system are correct and you do not want to change them, enter **n**, followed by **{RETURN}.** Go to Step 21.

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

18 The system displays 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:
```

19 Enter the number associated with the secondary language option you want to install, followed by **{RETURN}**.

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

```
--->    Are the language options correct (y/n)?
```

20 If the language options displayed are not correct and you want to change them, enter **n**, followed by **{RETURN}**. Go to Step 18.

If the language options displayed are correct, enter **y**, followed by **{RETURN}.**

21

```
Upgrade of Meridian MAX software has been completed.

You may now remove the tape from the tape drive.

Press ENTER to return to menu.
```

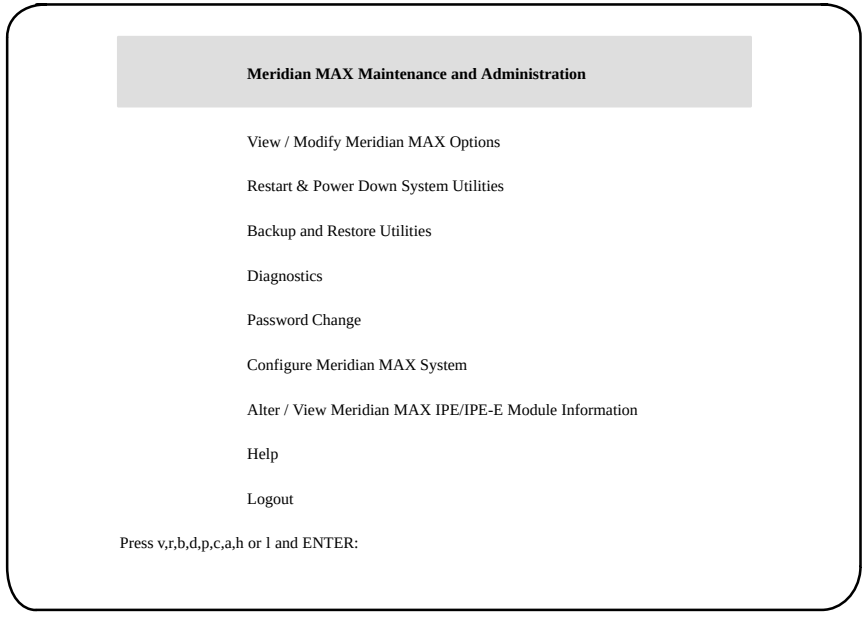
22 Press **{RETURN}**.

The system returns to the Backup and Restore Utilities screen.

Remove the cassette tape containing the Meridian MAX software from the tape drive.

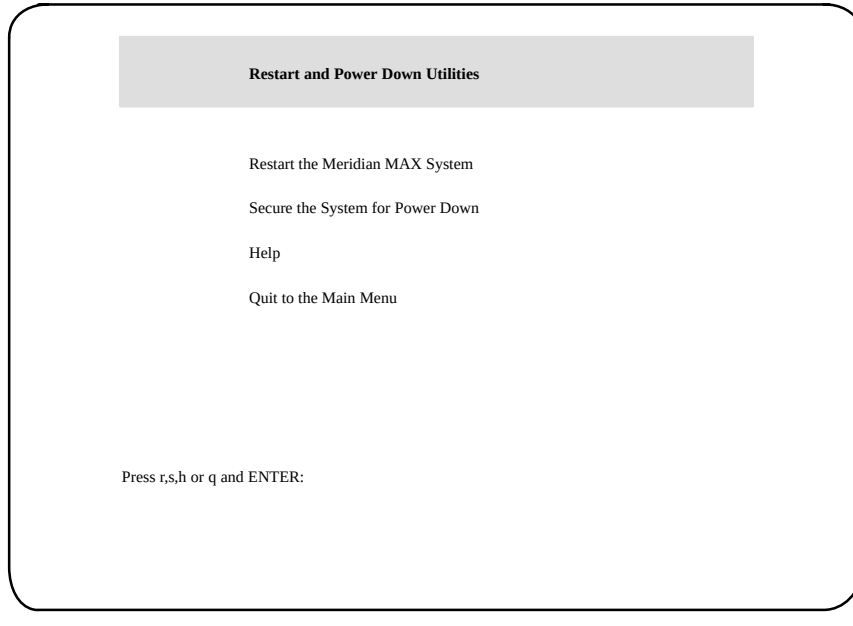
23 Enter **q**, followed by **{RETURN}**, to quit the menu and return to the system-inactive Maintenance and Administration menu.

Figure 6-4
Maintenance and Administration menu—system shutdown



24 Enter **r**, followed by **{RETURN}**, to select the Restart and Power Down System Utilities menu.

Figure 6-5
Restart and Power Down Utilities menu



25 Enter **r**, followed by **{RETURN}**, to restart the system.

The system clears the screen and displays the following prompt:

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

26 Enter **y**, followed by **{RETURN}**, to confirm that you want to restart the system.

The system displays the following messages:

```
The operating system will shut down and restart, and then
MAX will restart. Please wait for the system to reboot.

INIT: New run level: 6

The system is coming down. Please wait.

System services are now being stopped.

NFS shutdown: [NFS Shutdown Complete]

The system is down.
```

```
NOTICE: System Reboot Requested (0)
```

The system displays the copyright and hardware configuration information. Your system messages may differ.

```
Copyright Motorola Inc. 1988 – 1995, All Rights Reserved

xxxxxxx Debugger/Diagnostics Release Version 1.2 – 02/28/95
```

***Note*:** (The “xxxxxxx” will be MVME177 for SNN-E, MVME167 for SNN, and M4120 for IPE/IPE-E.)

```
COLD Start

Local Memory Found =02000000 (&33554432)

MPU Clock Speed =xxxxx
```

***Note*:** (The “xxxxx” will be 50 Mhz for SNN-E, 33 Mhz for SNN, and 25 Mhz for IPE/IPE-E.)

```
Autoboot in progress... To abort hit <BREAK>

Booting from: xxxxxx, Controller 0, Drive 0
```

***Note*:** (The “xxxxxx” will be VME177 for SNN-E, VME167 for SNN, and M4120 for IPE/IPE-E.)

```
Loading: Operating System

Volume: $00000000

IPL loaded at: $001F0000

VME Disk IPL Version 52.2

***

erase = DEL  kill = ^u  intr = ^c  quit = ^x

***
```

Note: The previous message indicates that the keys **{CONTROL}** **{C}** pressed simultaneously cause a system interruption which terminates the current process. The **{DEL}** key deletes and backspaces one character.

```
xxx SCSI configuration
```

***Note*:** (The “xxx” will be 177 with SNN-E, and 167 with SNN or IPE/IPE-E.)

```
Device  Addr    Vers    Revision   Serial#      Blocks  Size    Vendor Description
------  ----    ----    --------   -------      -------  ----    ------------------
Disk     00     0002    8770...    .......      2054325 0512    SEAGATE ST11200N
Tape     40     0001    RV J...    .......      0000000 0000    TEAC    MT-2ST/F50B
```

This configuration is only an example. Your system may differ.

```
Enter <CR> to pause in a single user shell before init.
Default boot sequence continuing...
The system is coming up. Please wait.
Node name set to xxxxxx.
```

Note: (The "xxxxxx" is the name of the system that was defined in the Meridian MAX System Parameters screen. For more information, refer to the "Meridian MAX system configuration" chapter.)

```
mount -f S51K /dev/usr /usr
Checking for system dump messages...
Checking for system dump.
Expreserve notification performed.
Downloading MVME332XT Line Disciplines.
```

Note: (The previous prompt appears only on SNN/SNN-E platforms.)

```
Error logging started.
OSM Logging started.
port_hold started.
Transport Provider daemon started.
Internet services provided.
portmap started.
Stream Error logging started.
netspec "tcpip" not set up.
Network Commands: rwalld
routed started.
NFS Startup...
```

```
ONC daemons:
NFS daemons:
Lock manager:
NFS Startup complete.
Line printer scheduler started.
Loading System Language Strings ...
Loading System Language Strings completed.
Starting MAX OSM Logger, Please Wait ...
OSM Logging Stopped.
MAX OSM Logging Started.
Meridian MAX release 09.xx
The system is ready.
Console Login:
```

Chapter 7: Meridian MAX power-down procedure

The Meridian MAX is designed to work most effectively when the system is left on at all times. If there is no overruling, site-specific reason for turning off the Meridian MAX, it is recommended that the system be left on.

CAUTION
Risk of data corruption
Do not power off a module without first performing the system shutdown procedure.

The Meridian MAX must not be powered off 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 7-1
Powering down the system

1. Log on as “maint” and enter the maintenance password as required.
2. Select **s** to shut down the Meridian MAX software.
3. Select the *“Restart & Power Down System Utilities”* option from the main maintenance menu.

4. At the Restart and Power Down Utilities submenu, select *"Secure the system for Power Down"* option.
5. Once the system displays "`NOTICE: System secured for powering down`," turn off the power to the Meridian MAX module.

Chapter 8: List of terms

ACD

Automatic call distribution (ACD) provides a means of automatically distributing a company 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 they arrive and distributed so that the workload at each answering position is approximately equal.

ACD configuration

The ACD configuration includes the assignments in the Meridian MAX system of agents to queues, of queues to a supervisor, of trunks to routes, and of routes to queues. It also includes the parameters that control recorded announcements, call overflow and interflow, and night service.

ACD-DN

An Automatic Call Distribution - Directory Number (ACD-DN) is the queue where incoming calls wait until they are answered. Calls are answered in the order in which they entered the queue.

Agent

An agent is a person who answers ACD calls. An agent should be able to provide all the information needed for an ACD call.

AM

The application module (AM) is the card cage that resides within the Application Equipment Module (AEM). The AM support VME-based application products, such as Meridian MAX. Two AMs can fit into each AEM. Each AM has its own power supply.

Application layer

This is 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 hardware or the operating system.

CDN

A Control Directory Number (CDN) is a special directory number (DN) configured in a Meridian 1 system to which no agents are assigned.

Configuration Control

The Configuration Control feature enables a system administrator to make changes to the configuration of the ACD system so that it works more efficiently.

Configuration Control Link

See Load Management Link.

Data link layer

This is a layer within a network communication model. It takes application layer messages and sends them over the network.

DID

Direct Inward Dialed

DNIS number

In situations where customers can dial one of several telephone numbers, the dialed number information service (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. 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

An installation upgrade is a Meridian MAX upgrade that changes the Meridian MAX hardware or software, or both. For example, if you change from a Meridian MAX 4 single-module system to a Meridian MAX 9 SNN, both hardware and software change. If you perform an installation upgrade from a Meridian MAX 6 SNN system to a Meridian MAX 9 SNN system, only the software needs to be upgraded.

IPE

A Meridian MAX 9 hardware platform. The Intelligent Peripheral Equipment (IPE) module consists of the following components:

- SMM167 CPU card
- 180 Mbyte or 240 Mbyte hard disk drive
- 155 Mbyte or 600 Mbyte cassette tape drive

IPE-E

A hardware platform introduced in Meridian MAX 8. The Intelligent Peripheral Equipment-Enhanced (IPE-E) module consists of the following components:

- SMM167 CPU card
- 1 Gbyte hard disk drive
- 600 Mbyte cassette tape drive

IPE/IPE-E

A combination of abbreviations to indicate that the feature being described applies to both the IPE platform and the IPE-E platform.

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 release your system is installed with updates its software, you can perform a “load new software release” procedure. For example, if you are currently running Meridian MAX 9 SNN Release 09.21 and you need to upgrade to Meridian MAX 9 SNN Release 09.25, you can perform this procedure.

MAX

Micro-auxiliary processor

MEI

MAX Event Interface (MEI) 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 wishing to route calls through the public switched network and MEI-Observe for applications wishing to ensure that agents are adhering to specified standards.

Meridian 1

Meridian 1 is 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 (MQA) allows agents to service up to five queues simultaneously. At login, agents can define priorities within the queues and assign themselves to a specific supervisor. They are also able to log in to any telephone set, allowing workstations to be shared and changed between agents.

MSI

MAX Status Interface (MSI) 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 (MTE) software is a terminal emulator package designed to run on IBM, or 100 percent compatible AT or higher, PCs. MTE contains all the functionality of Reflection 4+. 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.

MVME

Motorola Versa-Module Eurocard

NAC

Network Administration Center (NAC) is 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 (NACD) is 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.

SDA

Supervisor Display Access (SDA) allows you to access another supervisor display through the system console port or remote diagnostics modem port.

SEE system

A Meridian MAX hardware platform consisting of

- Single application module
- Existing MVME147SA–1 CPU card
- Existing mass storage unit (MSU) containing a 172 Mbyte or 240 Mbyte hard disk and a 155 Mbyte cassette tape drive

Note: Meridian MAX 9 does not support the SEE hardware platform.

SNN

A Meridian MAX 9 hardware platform. The SNN module consists of the following components:

- Single-module system
- New MVME167-34 CPU card
- New mass Storage Unit (MSU) containing a 1 Gbyte hard disk and a 600 Mbyte cassette drive

SNN-E

A new SNN-Enhanced platform introduced in Meridian MAX 8. The SNN-E module consists of the following components:

- Single-module system
- MVME177-005 CPU card
- Mass Storage Unit (MSU) containing a 2 Gbyte hard disk and a 600 Mbyte cassette drive

SNN/SNN-E

A combination of abbreviations to indicate that the feature being described applies to both the SNN platform and the SNN-E platform.

Subnet mask

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 an internet address. An improper subnet mask can result in high collision rates and reduced network efficiency.

Supervisor

The supervisor is the person who manages agent and queue performance.

System administrator

The system administrator is 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 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.

VME

Versa-Module Eurocard

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