555-7101-213

CallPilot

Installation and Configuration

Part 2: 200i Server Hardware Installation

Product release 1.07 | Standard 1.0 | May 2000

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CallPilot

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Publication history

May 2000 Standard 1.0 of *CallPilot Installation and Configuration, Part 2: 200i Server Hardware Installation* is released.

Contents

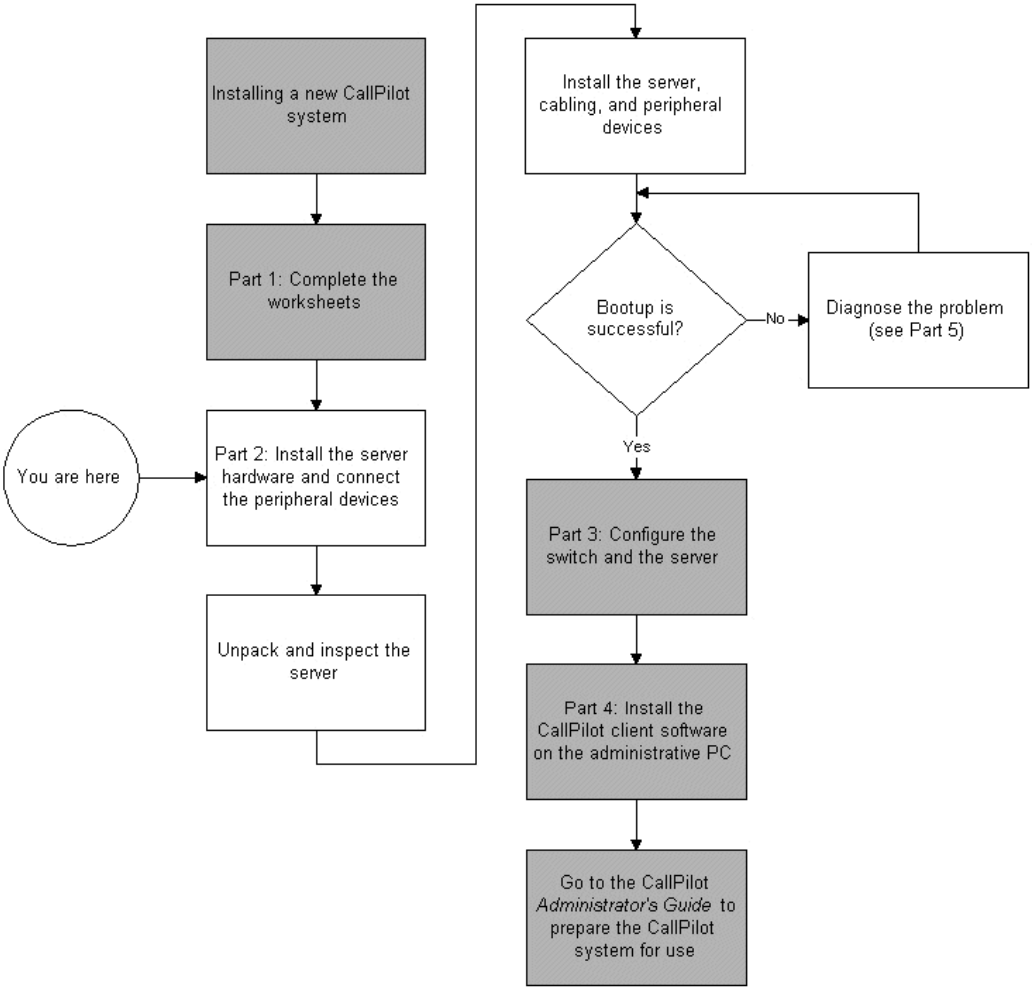
Chapter 1

Before you begin

In this chapter

Installation flowchart

The following flowchart shows the steps to complete in Part 2 of the CallPilot installation.



Installation steps for the 200i server

Installation steps

1. Complete the server hardware installation as described in this part (Part 2 of this binder).
2. Program the switch as described in Part 3 of this binder.
3. Skip the chapters in Part 3 of this binder that discuss connecting the server to the switch or to the CLAN (this is done in Part 2).
4. Follow the steps in the chapter “Configuring the server software-common dialog boxes for all switch types” in Part 3 of this binder.
5. Follow the steps in the section for Meridian 1 in the chapter “Configuring the server software-switch-specific dialog boxes” in Part 3 of this binder.
6. Change the default passwords as described in Part 3 of this binder.
7. Configure Remote Access Service as described in Part 3 of this binder.
8. Configure pcANYWHERE as described in Part 3 of this binder.
9. Verify that CallPilot can receive calls as described in Part 3 of this binder.
10. Install the Administration client software as described in Part 4 of this binder.

Site inspection checklist

Check	Description
	Ensure that the area is clean and clear of any debris.
	Ensure that there is adequate space for all equipment.
	Ensure that there is a desk, shelf, or table available for server VGA monitor, keyboard, mouse, and modem.
	Ensure that there is adequate air-flow room around the peripheral equipment for ventilation.
	Ensure that there are no heat sources near the peripheral equipment.
	Ensure that an analog phone line is available for the modem.
	Ensure that the area is isolated from strong electromagnetic fields and electrical noise sources (such as air conditioners, large fans, motors, radio or TV transmitters, or high-frequency security devices).
	Ensure that there is a sufficient number of adequate grounded electrical outlets or power bars for all equipment. There should be one outlet for each of the following items: ■ VGA monitor (for temporary connection) ■ modem ■ CD-ROM drive ■ tape drive (optional) ■ ELAN hub power cord ■ administration PC and monitor ■ customer-supplied network equipment (if required)

Check	Description
	Ensure that jacks and cables are ready for all required connections.
	Obtain the following items for all equipment on both the CLAN and the ELAN: ■ unique computer names ■ IP addresses ■ subnet masks

Customer-supplied equipment checklist

Use this checklist to ensure that you have the required equipment to be supplied by the customer.

Check	Description
	A PC that can be used as an Administration Client PC. Refer to Part 4 of this binder for details on the Administration Client PC.
	A web server PC if the customer has purchased Web Messaging. Refer to the Web Messaging documentation for details.
	For the Desktop Messaging feature, a TCP/IP-based CLAN is required that can connect Desktop Messaging users to the server.
	A hub for the CLAN if a CLAN is present (or appropriate alternative).
	Jacks and a cable ready to connect the server to the CLAN. A CLAN is optional.
	Ethernet connections ready at the Meridian 1 switch (cables and Ethernet transceivers/MAUs).
	A TCP/IP-based ELAN that connects the switch and the server. The administrative PC can also be on the ELAN or the CLAN.
	A hub for the ELAN if applicable (or appropriate alternative).
	An ELAN hub power cord.
	(Optional) A cable ready to connect the ELAN to the customer WAN.

Required tools and additional materials

Use this checklist for the tools and materials you might need to perform installation and maintenance tasks.

Check	Description
	Phillips cross-head screwdriver
	Standard slot-head screwdriver (1/4" and 1/2")
	Set of hex nut drivers
	Sidecutters
	Jumper removal tool
	Tape measure for determining cable lengths
	Tweezers
	Antistatic ESD wrist strap (recommended)
	Pen or pencil for writing notes, cable lengths, and cable identifications
	Flashlight for examining interior of chassis
	Cable tie wraps
	Pen or pencil for noting cable lengths and labeling cables
	Cable identification labels
	Equipment log. This is used to record the model and serial number of the system, all installed options, and other information.
	Null modem serial cable (it can be useful for troubleshooting)

Check	Description
	Laptop computer and CD-ROM drive (to read documentation on CD and to connect directly to the server for troubleshooting)

Preinstalled software

What is installed at the factory

The following software is installed at the factory before the server ships:

- Windows NT 4.0 Server operating system
- Windows NT Service Pack 5, with specific configuration
- SNMP and Remote Access Service (RAS)
- software for the switch-connectivity hardware
- CallPilot software
- SQL Anywhere database
- pcANYWHERE32 version 8.0

CAUTION

Do not activate screen saver

Do not activate screen savers on CallPilot servers. Screen savers consume significant CPU and impact CallPilot's response time.

CAUTION

Do not install additional software on the CallPilot server

Only the software that comes with CallPilot is supported on the CallPilot server. If you install additional software, you can cause CallPilot to function improperly.

Nortel Networks supplied software media

Introduction

The following software media is supplied with the 200i server. Store this media in a safe place and use when instructed in the documentation. CallPilot server software is preinstalled at the factory, so you might not be asked to use some of these CDs unless you are performing recovery procedures, reinstallation, or an upgrade.

Software media		Part number
	Win NT 4.0 OS Recovery CD	NTRH8027
	Application Server Master Driver CD Bootable	NTRH8101
	CallPilot 1.07 Server S/W CD	NTUB40AC
	CallPilot 1.07 Admin Client CD	NTUB41AC
	CallPilot 1.07 Desktop Messaging CD	NTUB42AC
	CallPilot 1.07 Global PEP S/W CD	NTUB43AC
	CallPilot 1.07 Language Prompts CD set (3)	NTUB44BC
	CallPilot 1.07 Web Messaging CD	NTUB45AC

Chapter 2

Safe handling of CallPilot components

In this chapter

General safety

Introduction

If you need to replace or upgrade any system parts, follow Nortel Networks safety guidelines to prevent personal injury and damage to the server or replacement parts.

WARNING

Risk of personal injury and equipment damage

Field maintenance must always be performed by fully qualified, trained personnel.

Nortel Networks recommends the following safety guidelines for performing installation and maintenance procedures:

- Plug peripheral devices into properly grounded power sources to prevent electric shock.
- Use a surge protector or uninterruptible power supply to protect your system from sudden increases and decreases in electrical power.
- Ensure that nothing rests on peripheral cables, and that cables will not be tripped over or stepped on.
- Do not push foreign objects into any server opening.
- Protect the server from electrostatic discharge by wearing an antistatic wrist strap attached to any unpainted metal surface on the switch when handling components.

Cooling and airflow

For proper cooling and airflow, always install the chassis top cover before turning on the system. You risk damaging system parts if you operate the system without the cover in place.

Precautionary messages

This guide provides warnings when risks related to hardware installation and handling are known.

Do not ignore these warnings.

Handling components

Introduction

Electrostatic discharge (ESD) affects the performance and decreases the useful life of system components. ESD can seriously damage component parts such as hard disks.

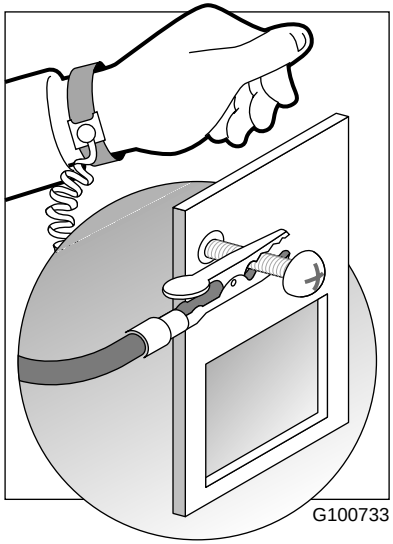
ATTENTION

Nortel Networks recommends performing maintenance procedures at an ESD workstation whenever possible.

Antistatic wrist strap

If an ESD workstation is not available, wear an antistatic wrist strap. Ground the ESD wrist strap by attaching it to any unpainted metal surface on the switch.

This diagram shows the lead from the ESD wrist strap clipped to an exposed screw on the chassis.



Discharging static

When working with server components, periodically touch a nearby unpainted surface to discharge any accumulated static.

Precautions for handling components

These precautions are recommended for any procedure that includes handling component boards.

- After removing a board from its protective wrapper or from the server, place the board component-side up on a conductive foam pad. If possible, also use antistatic floor pads and workbench pads.
- Do not slide a board over any surface.
- Do not touch board components or gold-edge connectors on the board.
- Hold a board by the top edge or by the side edges.

Handling hard disks

Introduction

Hard disks are extremely sensitive to vibration and physical shock. To protect equipment and prolong the useful life of hard drives, Nortel Networks recommends taking the following precautions.

Avoid vibration or physical shock

Hard disks are susceptible to even slight vibrations. A hard disk can be damaged if it is placed on a table that is accidently knocked or moved. Use caution when handling hard disks to prevent damage.

Handle hard disks with care

After removing a hard disk from its protective wrapper or from the server, place it on an antistatic, padded workbench or workstation to avoid movement or jarring.

Check for shipping damage

If a replacement hard disk is shipped alone as an upgrade or replacement, note any dents or damage on the padded container and packaging. Keep the container as proof that the part was damaged during shipping and handling.

Precautions when removing the hard drive

Perform a proper system shutdown, and then remove the hard drive. Refer to Part 5 of this binder for detailed instructions.

Store hard disks carefully

Store hard disks in their original padded containers. Store the packaged disks away from places where they can be moved, jarred, or damaged by the environment.

Chapter 3

About the 200i server

In this chapter

Overview

Introduction

The 200i server is a flexible, multimedia telephony server designed to integrate with Nortel Networks PBX products. You install the server on Intelligent Peripheral Equipment (IPE) shelves at the resident switch.

Integration with the switch

The 200i server occupies two slots of an IPE shelf. When the server is installed in the IPE shelf, its connector mates with the backplane of the switch, which provides power and communications links.

Server power

The server powers up automatically when it is locked into position on the IPE shelf. Powering up the server does not affect switch operation.

Maintenance and diagnostics

Server maintenance and diagnostics are performed remotely through the administration PC.

What this chapter contains

This chapter describes the following 200i server components:

- 200i server motherboard, daughterboard, and faceplate
- environmental specifications
- I/O breakout panel
- supported peripheral devices

Introducing the 200i server

Introduction

The section describes the following 200i server components:

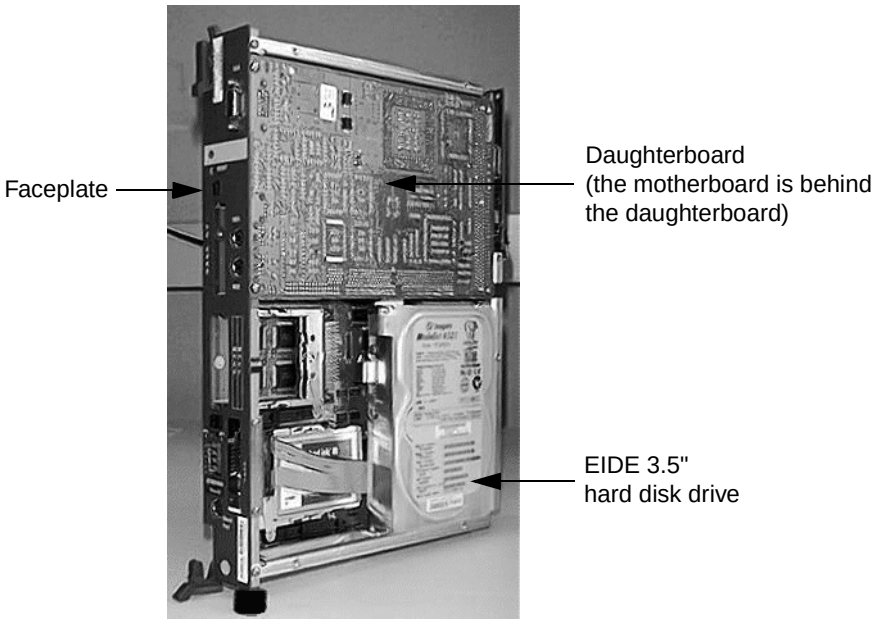
- motherboard
- daughterboard
- faceplate

This section also provides environmental specifications.

Primary components

The server is made up of a motherboard and a processor daughterboard. The two boards communicate through a small interconnect board. The faceplate provides LED displays, PC card slots, and connectors for peripheral devices.

The following picture shows the 200i server.



Motherboard

The motherboard of the 200i server acts as a base for the processor daughterboard, providing it with power and access to peripheral interfaces. The motherboard also houses the interfaces needed to communicate with the switch and to facilitate data communications.

The following devices are on the motherboard:

- one Type III PC card slot, accessible through the faceplate
- one Type III PC card slot, in-board
- two Nortel Networks Multimedia Processing Card (MPC) slots accessible through the faceplate
- one 3.5" EIDE hard drive
- one embedded Multimedia Processor, supporting up to eight voice channels
- one Nortel Networks software feature key (dongle) socket
- one PCI expansion socket for the SCSI paddleboard
- one embedded 10 Mbit/s Ethernet controller

Daughterboard

The daughterboard of the 200i server is a high-performance, embedded computing platform based on an x86 class processor with MMX technology.

The daughterboard contains internal connections for the following items:

- EIDE hard disk
- one DIMM slot
- 200i server motherboard interface

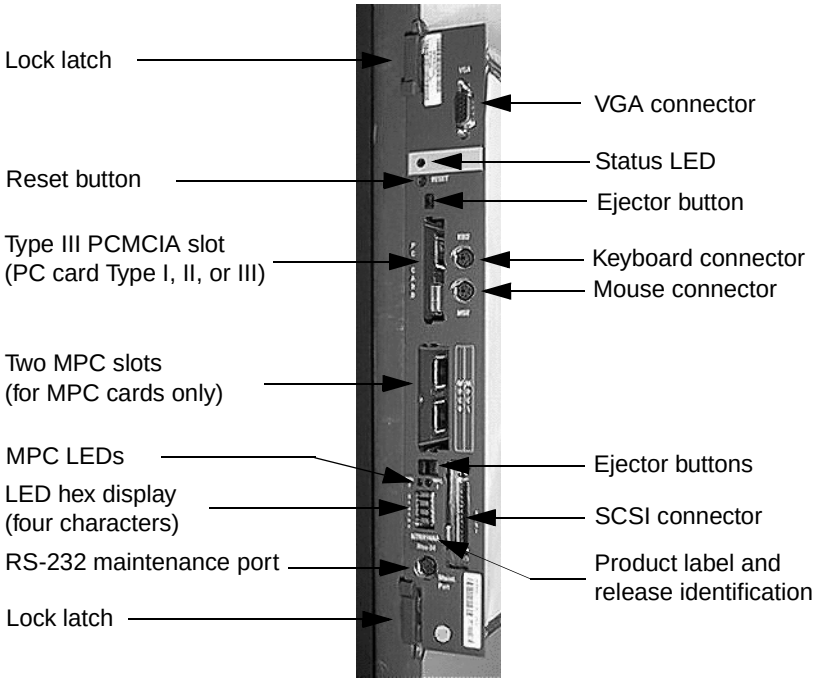
The daughterboard contains external connectors (accessible through the faceplate) for the following peripheral devices:

- SVGA monitor
- standard PS/2 two-button mouse
- standard 101 keyboard

Faceplate

The faceplate of the 200i server provides features and connectors for external peripherals.

The following picture of the server faceplate shows interface connections and features.



A description of each faceplate feature follows:

Faceplate feature	Description
Lock latches	Lock latches secure the server to the IPE shelf.
VGA connector	The VGA connector is a standard, high-density 15-pin D-type female connector coming from the daughterboard.

Faceplate feature	Description
Status LED	The LED indicates two server states: ■ the completion of self-test diagnostics ■ when it is safe to remove the server from the switch
Reset button	The reset button allows an operator to manually reboot the 200i server without removing it from the IPE shelf.
Ejector buttons	There is one ejector button for each MPC card slot, and one for the PC card slot. Press the button to eject the card from its slot. When you insert the card, the associated ejector button pops back out.
PC card slots	There are two PC card slots on the 200i server. One is accessible through the faceplate, and one is located internally on the motherboard.
	**CAUTION** **Risk of equipment damage** Do not put MPC cards into the PC card slots.
Keyboard connector	The keyboard connector is a standard PS/2 connector. If the keyboard is attached during bootup, then the keyboard is hot-pluggable. That is, you can disconnect the keyboard after you finish configuring CallPilot and reconnect it later if needed for server maintenance.
Mouse connector	The mouse connector is a standard PS/2 connector. If the mouse is attached during bootup, then the mouse is hot-pluggable. That is, you can disconnect the mouse after you finish configuring CallPilot and reconnect it later if necessary for server maintenance.

Faceplate feature	Description
MPC card slots	You can install up to two MPC cards on the 200i server. Both slots are faceplate-accessible. MPC cards house DSP units and are used for multimedia telephony processing.
	**CAUTION** **Risk of equipment damage** Do not put PC cards into the MPC slots.
MPC slot LEDs	There is an LED for each MPC card slot. The following descriptions outline each LED status: ■ Off: The MPC card is not receiving power. It is safe to remove the card. ■ On: The MPC card is in use. It is *not* safe to remove the card. ■ Off, then on: The MPC card has been recognized by the 200i server software and has been powered up. ■ On, then off: The MPC card has been successfully powered down. It is safe to remove the card.
LED hex display	The four-character LED-based display provides feedback on the current status of the server, including fault conditions.
SCSI connector	This connector connects SCSI devices to the 200i server (for example, a CD-ROM or tape drive). Press the button latches to lock or unlock a cable from the connector.
RS-232 maintenance port	This port is for manufacturing use only.

Environmental specifications

The following tables show environmental specifications for the 200i server.

Temperatures

Recommended temperature	15 degrees C to 30 degrees C
Absolute temperature	10 degrees C to 45 degrees C
Long-term storage temperature	–20 degrees C to 60 degrees C
Short-term storage temperature	–40 degrees C to 70 degrees C (less than 72 hours)
Change rate temperature	Less than 1 degree C per three minutes

Relative humidity

Recommended relative humidity	20 percent to 55 percent RH (noncondensing)
Absolute relative humidity	20 percent to 80 percent RH (noncondensing)
Long-term storage relative humidity	5 percent to 95 percent RH (at –40 degrees C to 70 degrees C respectively) (noncondensing)

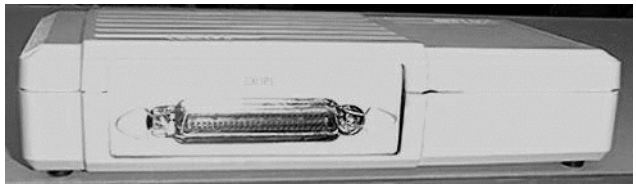
I/O breakout panel

Introduction

The I/O breakout panel is an external cabling device that provides cable outlets for network, communication, and serial ports.

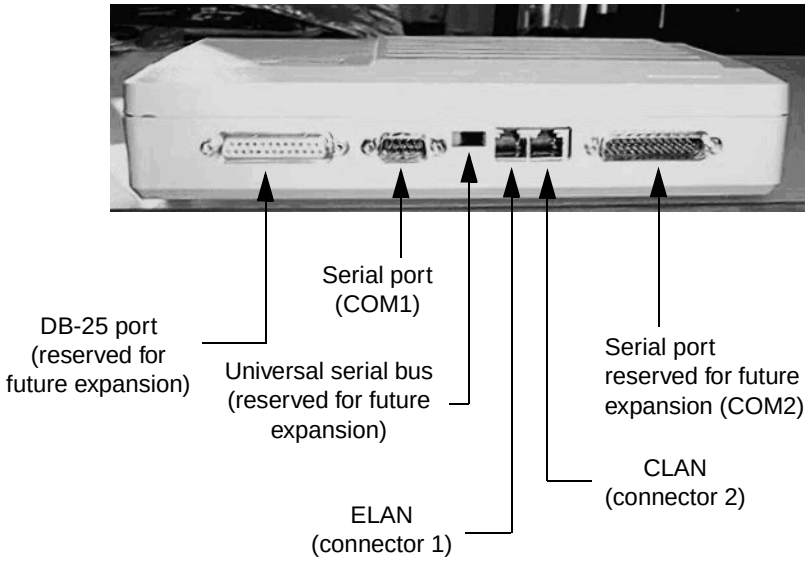
Front and rear panels

The following picture shows the front of the I/O breakout panel. The front panel contains one connector to provide cabling to the 200i server through a cable attached to the connector panel on the Option 11C or the I/O panel on the Meridian 1 IPE shelf on which the server is installed.



The rear panel provides connectors for attaching external peripherals and network cables to the server. The following illustration shows the I/O breakout panel of the 200i server with

- one DB-25 connector (reserved for future expansion)
- one nine-pin serial port (COM1)
- one universal serial bus (reserved for future expansion)
- one RJ-45 10 Mbit/s 10BaseT Ethernet ELAN network connector
- one RJ-45 CLAN network connector (requires an optional Ethernet or Token Ring CLAN NIC)
- one 25-pin serial port (COM2); COM2 is reserved for future expansion



Install location

For 200i server installations on a Meridian Option 11C switch, the I/O breakout panel can be wall-mounted. For Meridian 1 installations, you must ensure that an appropriate location is available for the I/O breakout panel.

Peripheral connectivity

Introduction

Peripheral equipment is attached to the 200i server in two locations:

- the server faceplate
- the external I/O breakout panel

Faceplate connections

ATTENTION

Connections made to the faceplate (with the exceptions noted below) are temporary only, since you must remove the cabinet cover to make these connections. The system does not meet specifications for radiated EMI if you remove the cabinet cover.

The following peripheral devices are connected to the faceplate:

- monitor (SVGA)
- keyboard
- mouse
- PC card
- MPC card (permanent)
- SCSI cable (permanent)

Monitor, keyboard, and mouse

You need the monitor, keyboard, and mouse to install the operating system on the 200i server. The monitor is always hot-pluggable. If the keyboard and mouse are attached during bootup, then the keyboard and mouse are hot-pluggable. That is, you can disconnect them after you finish configuring CallPilot and reconnect them later if needed for server maintenance.

PC card

The faceplate-accessible PC card slot is used for system recovery procedures (restoring a system after a catastrophic hard drive failure).

MPC-8 card

The Nortel Networks MPC-8 card supports multimedia telephony services on the 200i server. Two specially designed card slots are available for the MPC-8. Both are located on the 200i server faceplate.

The MPC-8 card looks like a Type II PC card, but it uses different technology and is not compatible with standard PC card slots.

SCSI connections

The SCSI connection is the only permanent faceplate connection. This connection uses a SCSI cable with a low-profile right-angle connector that allows the cable to be attached with the cabinet covers on.

Switch platform	Description
Meridian 1 Option 11C	When the 200i server is installed in a Meridian 1 Option 11C cabinet, an intermediate SCSI cable is routed through the wiring channel to the bracket assembly that is attached to the base of the cabinet cover. The SCSI device connects to the SCSI connector on the bracket assembly. This is described in Chapter 4, "Installing the server, cables, and peripheral devices."
Large Meridian 1 systems	For larger Meridian 1 systems, such as Option 51, the intermediate SCSI cable is routed to an I/O panel connector on the rear of the IPE shelf housing the server. This is described in Chapter 4, "Installing the server, cables, and peripheral devices."

ATTENTION

Because of a Windows NT restriction, you must connect external SCSI devices before the 200i server is booted. External SCSI devices cannot be disconnected while the 200i server is powered up.

If a SCSI device is not connected when the 200i server is booted, or a device is disconnected after booting, you must reconnect the device and reboot the system.

I/O breakout panel connections

The following peripheral connections are available on the I/O breakout panel:

- ELAN (Ethernet)
- CLAN (Ethernet or Token Ring)
- COM1

ELAN

The ELAN connector provides a 10 Mbit/s Ethernet port to connect the 200i server to the Meridian 1 switch. This connection allows the exchange of call control information between the server and the switch.

ATTENTION

When internetworked with the switch, high-traffic operations such as operational measurements, downloading, or network-based backups should not be scheduled during high call traffic periods.

CLAN

The CLAN connector provides a 10 Mbit/s Ethernet port or a 4/16 Mbit/s Token Ring port. This port allows a connection to an existing network for connectivity to users' desktop computers, and provides a path for LAN-based server administration. For this connection to work, you must purchase an optional PCMCIA CLAN NIC and install it on the motherboard of the 200i server.

ATTENTION

Token Ring operation @ 16Mbit/s for Meridian 1 configurations (except Option 11C) is currently not supported.

COM1

COM1 is used to connect an external high-speed modem. The modem allows administrators and technical support personnel to administer the 200i server from a remote location.

Supported peripheral devices

Device	Description
CD-ROM (NTRH9037)	An external CD-ROM drive is used to install and upgrade the server. The drive connects to the server with an intermediate SCSI cable that connects to the SCSI connector on the faceplate. Because the CD-ROM drive is an external device, it also requires a 120 V power source. Set the SCSI ID for the CD-ROM drive to 3. If you are connecting more than one SCSI device to the server (such as a tape drive), those devices must be daisy-chained. **Note:** The CD-ROM drive is not hot-pluggable. You must power off the server to connect or disconnect the drive.
Tape drive (NTRH9038)	An external SCSI tape drive is used to back up and restore data. The device connects to the server by an intermediate SCSI cable that connects to the SCSI connector on the faceplate. Because the tape drive is an external device, it also requires a 120 V power source. Set the SCSI ID for the tape drive to 5. If you are connecting more than one SCSI device to the server (such as a CD-ROM drive), those devices must be daisy-chained. **Note:** The tape drive is not hot-pluggable. You must power off the server to connect or disconnect the drive.
Modem (NTRH9016)	An external high-speed modem provides remote access to the 200i server. The modem connects to the COM1 connector on the I/O breakout panel.

Device	Description
CLAN network adapters (CLAN NIC)	One of the following CLAN NICs can be used: ■ 10 Mbit/s Ethernet (NTRH9039) ■ 4/16 Mbit/s Token Ring (NTRH9040) Both cards are industry-standard adapters packaged in the PCMCIA form factor. Neither card is hot-pluggable. You must power down the server to insert or remove the CLAN NIC. You can install only one CLAN NIC in the 200i server at any time. The CLAN NIC installs in an internal PCMCIA card slot on the motherboard and connects to the local network through the CLAN RJ-45 connector on the I/O breakout panel.
PCMCIA flash ATA card (NTRH9055)	The PCMCIA flash ATA memory card acts as a 40 Mbyte removable hard drive on the 200i server. This card contains the software necessary to install MS-DOS and prepare for Windows NT installation.
Monitor, keyboard, and mouse	Keyboard: NTRH9013 Monitor: ■ 14" monitor: NTRH9011 ■ 17" monitor: NTRH9012 Mouse: NTRH9014

Chapter 4

Installing the server, cables, and peripheral devices

In this chapter

Overview

Introduction

This section provides checklists and information for installing the 200i server.

Prerequisites

If you have a LAN, the LAN must be configured and the appropriate networking equipment must be available.

If the LAN is to be networked with the 200i server, you need a network specialist to ensure proper configuration.

To install the 200i server

1. Unpack the 200i server.
2. Inspect the 200i server for possible damage.
3. Insert the 200i server into an available slot on the switch shelf.
4. Connect the intermediate SCSI cable. This cable is used to connect the external CD-ROM or tape drive.
5. Set the following items on the CD-ROM and tape drives:
   - SCSI IDs on the CD-ROM and tape drives
   - DIP switches on the CD-ROM drive
6. Set the DIP switches on the modem.
7. Connect devices as follows:
   - Connect the monitor, keyboard, and mouse to the 200i server faceplate.
   - Install the MPC cards.
   - Connect the CD-ROM and tape drive to the intermediate SCSI cable.
   - Connect the modem and ELAN/CLAN cables to the I/O breakout panel.
   - Connect the power cords for all devices.
   - Power up the devices.

8. Complete the installation of the 200i server as follows:
   - Connect the I/O breakout panel to the switch.
   - Lock the 200i server into position in the switch slot.
   - Boot the 200i server to Windows NT.

When you finish, continue with Part 3 of this binder.

About the Equipment LAN

Introduction

The equipment local area network (ELAN) is a dedicated, segregated, 10Base-T Ethernet network. The ELAN's primary purpose is to provide communication (data connectivity for AML call control messaging) between CallPilot servers and Meridian 1 switches.

The ELAN is

- a dedicated network that carries IP traffic over Ethernet
- a segregated network that carries traffic only between CallPilot servers, a Meridian 1 switch, and a limited number of connected administration client PCs

ATTENTION

Desktop client PCs should not use the ELAN. Each Meridian 1 Option 11C (with up to two expansion cabinets) and Meridian 1 four-tier switch should have its own dedicated ELAN. The ELAN cannot support high volumes or intensive IP traffic originating within the local ELAN or from external interconnected networks.

CAUTION

Risk of reduced system performance

Depending on the size and required administrative operations of an external network, you might want to internetwork the ELAN using routers, bridges, or switches.

Direct connection of the ELAN to external networks (such as the CLAN), or improper router, bridge, or switch device selection or configuration can adversely affect the call processing abilities of ELAN-based Meridian switches and CallPilot servers.

As a result, router and switching technologies applied to the ELAN are not recommended. If you require such connections, contact your Nortel Networks customer support representative.

In addition to its primary purpose of carrying call control information, the ELAN facilitates network-based management by allowing for local, on-site administration of CallPilot servers and Meridian switches using ELAN-based administration client PCs. CallPilot Administrative PCs are typically located on the CLAN if a CLAN is available

CAUTION

Risk of reduced system performance

Since the ELAN carries critical real-time traffic between the CallPilot server and Meridian switch, bandwidth-intensive OA&M activities on the ELAN are prohibited while CallPilot call processing is in progress. These activities include remote control, large file transfers, backup and restore operations, printing, and other traffic-intensive tasks. Failure to adhere to this guideline will adversely affect the call processing abilities of ELAN-based Meridian switches and CallPilot servers.

Starting the installation

To prepare the 200i server for installation

1. Remove the 200i server from its packaging.
2. Remove the 200i server from the antistatic bag.
3. Place the 200i server on an antistatic surface.
4. Do a visual inspection of the 200i server, as outlined below.

To inspect the 200i server for shipping damage

Before proceeding with the installation, visually inspect the 200i server for any damage it might have incurred during shipping.

- Has the daughterboard become loose?
- Are all cables securely seated?
- Is the hard drive bracket secure?

Once you are satisfied that the 200i server has arrived at your site undamaged, continue with "Positioning the 200i server on the switch shelf" on page 49.

If components are damaged

Dead On Arrival (DOA) policy

DOA equipment is new product identified within 90 days of shipment as inoperable at the time of initial installation. DOA items have obvious material defects that are detected when the item is unpacked, or they have electronic failures that are discovered when (or before) the item is placed in service. Nortel Networks repairs or replaces DOAs.

DOAs reported within 90 days from the original ship date are replaced with new products and given priority shipment.

DOAs reported after 90 days are handled under normal warranty coverage. See "Repair warranty" under the "Return Policies and Procedures" section.

If any DOA-replaced equipment is not returned within 45 days to the Repair and Distribution center in Nashville, the distributor is invoiced for the replacement equipment at the current NDP of the equipment. Returns received after invoicing has occurred are subject to a minimum 15 percent restocking charge.

In the event of a DOA, distributors should contact the Santa Clara Customer Response Center. Please identify the DOA equipment when requesting a replacement.

DOA procedure

1 To report a DOA, contact the Customer Response Center at 1-800-321-2649, and select option #3.

2 Provide the following information:

- ordering code
- item description
- original P0 number (or NTI number)
- the address where the equipment is to be shipped
- distributor bill to number or address
- P0 number for the DOA replacement shipment

3 Upon arrival of the DOA replacement equipment at the requested site, immediately return the defective equipment to the following address:

Nortel Networks
Repair and Distribution Center
640 Massman Drive
Nashville, TN 37210
Attn: RA#_____
1-800-321-2649

4 In all shipments, include a packing slip from the distributor that includes the following:

- the distributor's address
- DOA RA#
- the quantity of items to be returned
- the ordering code of items being returned
- the P0 number

5 Return the Advance-replacement DOA equipment in the original packaging.

If the parts or components are missing, or if equipment appears to be used, distributors are invoiced. If the advance replacement is an upgrade or update, distributors are responsible for proper packaging. Improper packaging resulting in obvious damage to the equipment causes the warranty to be voided.

If such damage occurs, return the equipment to the distributor. Contact a repair representative at 1-800-321-2649 if you need new packaging materials.

If components are missing

Notify your distributor purchasing group to place a shipping discrepancy order with Nortel Networks customer care center IE COM, Santa Clara, or Nashville.

Shipment/Order discrepancies

An order discrepancy exists when Nortel Networks shipping documents or the equipment received, or both, do not agree with the distributor's receiving documents (including references to back orders). File any discrepancies with the appropriate Customer Response Center Representative within 30 days of the distributor's receipt of shipment. To resolve order discrepancies, provide the P0 number or Nortel Networks reference number.

Proof-of-delivery

Proof-of-delivery (POD) is provided upon request. Nortel Networks accepts distributors' POD requests up to 90 days from the initial shipping date. No POD requests are considered after the 90-day period.

Both orders require the original purchase order so that the specific processing and criteria can be applied.

Positioning the 200i server on the switch shelf

Introduction

On an Option 11C, the 200i server cannot be placed in slots 11 or 12 (marked MM2 and MM3).

Note: The 200i server can be placed in slot 10 (marked MM1) only if the 200i server is NTRH14AA Release 12 or later. (The release is identified on the sticker located below the RS-232 maintenance port on the 200i server faceplate.)

The 200i server physically occupies two slots. However, for the purposes of connectivity, the 200i server is considered to be in the first slot.

To position the 200i server on the switch shelf

1. Ensure that no cables are connected to the slot in which you are installing the 200i server.
2. Open the lock latches at the top and bottom of the 200i server faceplate.
3. Slide the 200i server into an unoccupied slot. At this time, do not push the 200i server into place against the backplane. If you do, the server powers up, and it should not be powered up at this time.

   Note: The 200i server requires two consecutive unoccupied slots on the shelf. Ensure that the 200i server is positioned correctly between the parallel slots.
4. Connect the intermediate SCSI cable.

   Note: See “Connecting the intermediate SCSI cable” on page 50.
5. Connect the peripheral devices.

   Note: See “Connecting peripheral devices to the 200i server” on page 67.

Connecting the intermediate SCSI cable

Introduction

Before you can connect a CD-ROM or tape drive to the 200i server, you must install the intermediate SCSI cable. Different cables are used for the Option 11 and Meridian 1. Therefore, part codes and installation procedures are different.

Part numbers

The following table gives the intermediate SCSI cable part codes for your switch:

Switch type	Intermediate SCSI cable part code
Option 11	NTRH1407 (with bracket assembly)
Meridian 1	Two cables are required: ■ NTRH1408 (for connecting the 200i server to the Meridian 1 I/O panel) ■ NTRH1409 (for connecting the Meridian 1 I/O panel to an external SCSI device)

To connect the cable for Option 11

On the Option 11, the intermediate SCSI cable bracket assembly is installed below the card cage.

1 Remove the front panel of the Option 11.

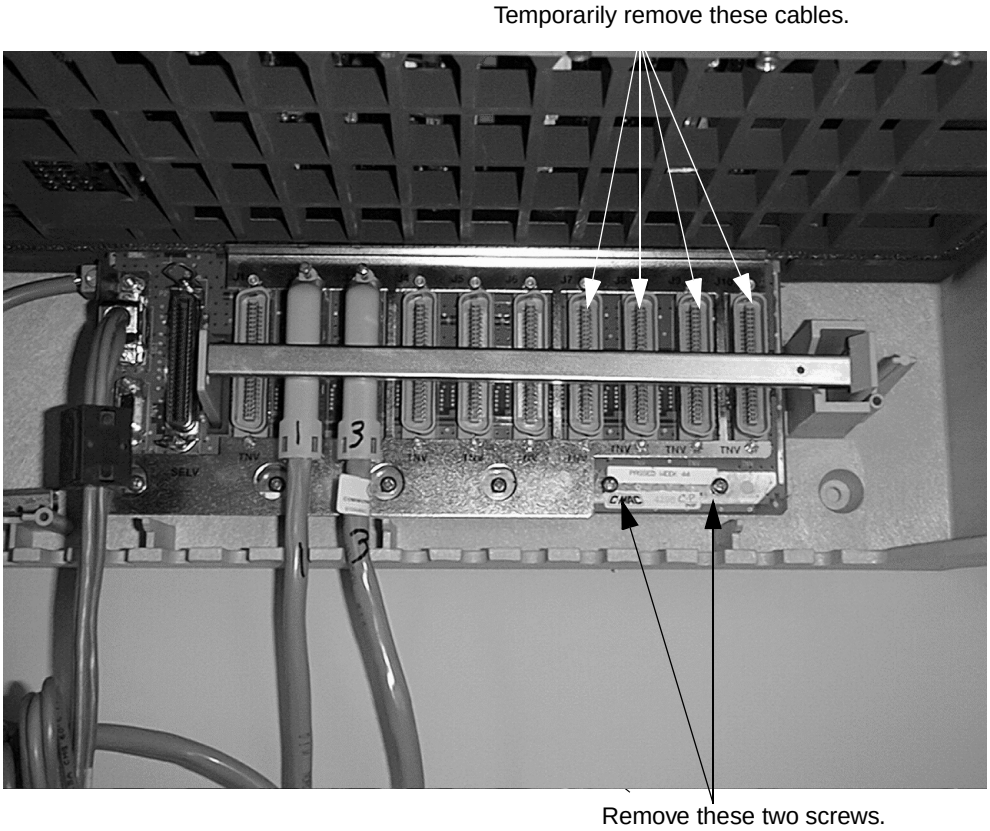
2 Below the card cage, temporarily remove any cabling that might interfere with the installation of the intermediate SCSI cable bracket assembly.

ATTENTION

Services related to any telephony equipment associated with the cabling should be taken out of service before the cables are disconnected.

3 Remove the two screws on the right side of the Option 11 backplane, as shown in the following illustration.

Result: The Option 11 backplane looks similar to the following picture:



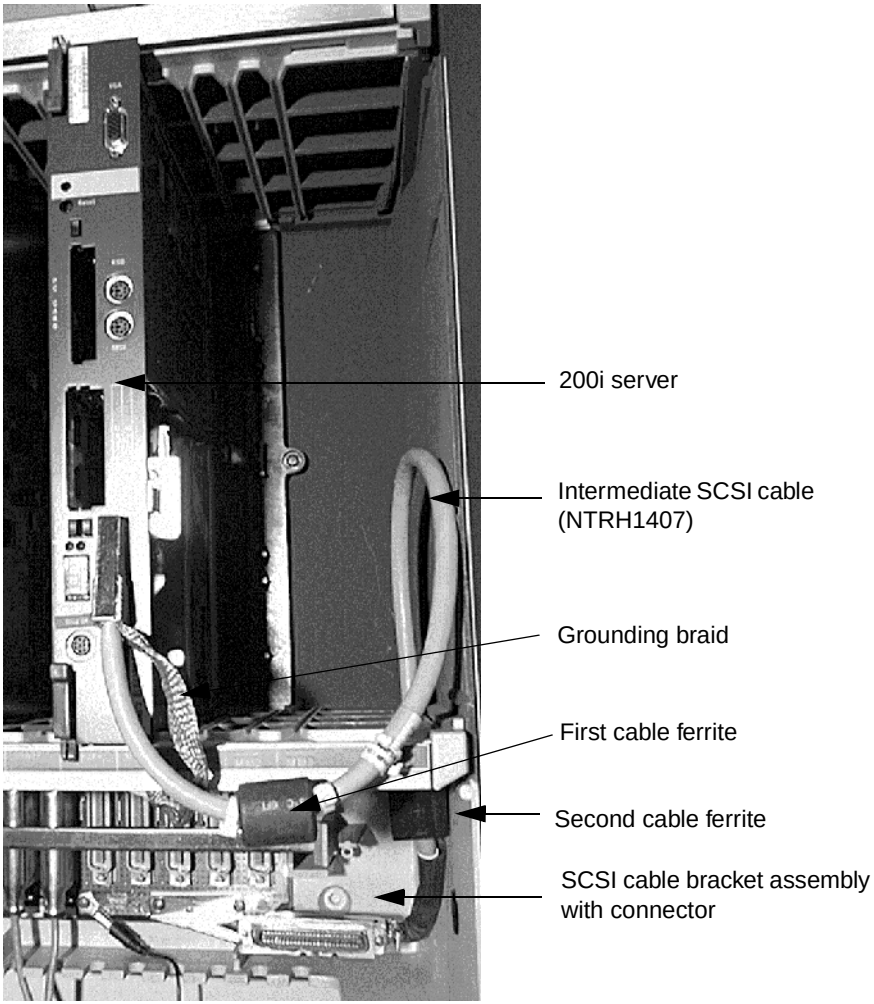
4 Guide the connector of the intermediate SCSI cable (NTRH1407) up through the bottom right side of the card cage.

5 Connect this connector to the recessed SCSI connector on the 200i server faceplate.

6 Attach the bracket assembly, using the screws that were removed in step 3, so that the SCSI connector appears on the right side of the Option 11 cabinet.

Note: When routing the SCSI cable through the card cage, ensure the second cable ferrite is placed just below the card cage, as shown in the following illustration.

Result: The installed intermediate SCSI cable looks similar to the following:



7. Attach the grounding braid on the SCSI cable to the card cage, and tighten the screw.
8. Replace all cabling removed in step 2.
9. Restore any services you took out of service in step 2.
10. Connect the CD-ROM drive or tape drive as described in "Connecting peripheral devices to the 200i server" on page 67.

To connect the cable for Meridian 1

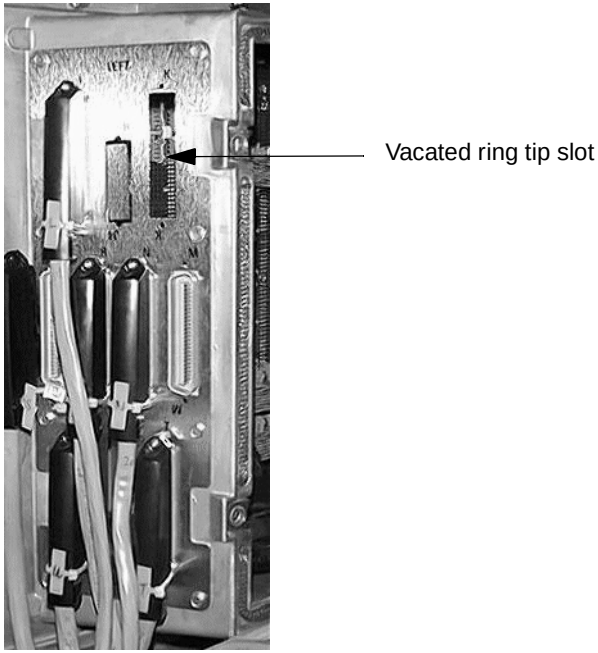
On the Meridian 1, the intermediate SCSI cable is connected to the Meridian 1 I/O panel.

1 Remove the I/O panel cover from the back of the Meridian 1 cabinet.

2 Remove the ring tip assembly for the right-most slot of the 200i server position.

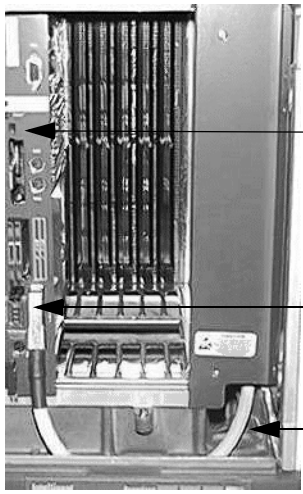
Example: If slots 11 and 12 contain the 200i server, remove the cable assembly for slot 12.

Note: For information about slot and rear bulkhead wiring, refer to the *Meridian 1 System Installation and Maintenance Guide* (NTP 553-3001-210).



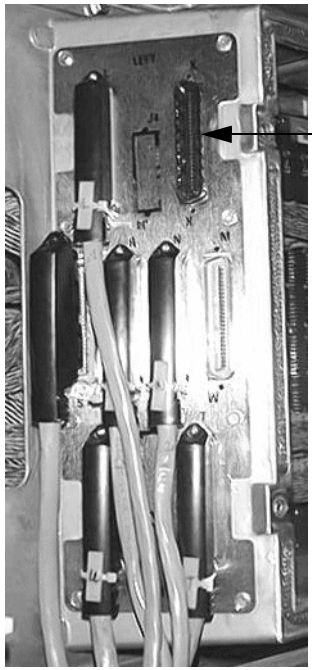
3 Connect the connector of the 200i server-to-Meridian 1 I/O panel SCSI cable (NTRH1408) to the recessed connector on the 200i server faceplate.

4 Thread the intermediate SCSI cable from the faceplate connector along the bottom of the shelf to either the left or the right access channel.

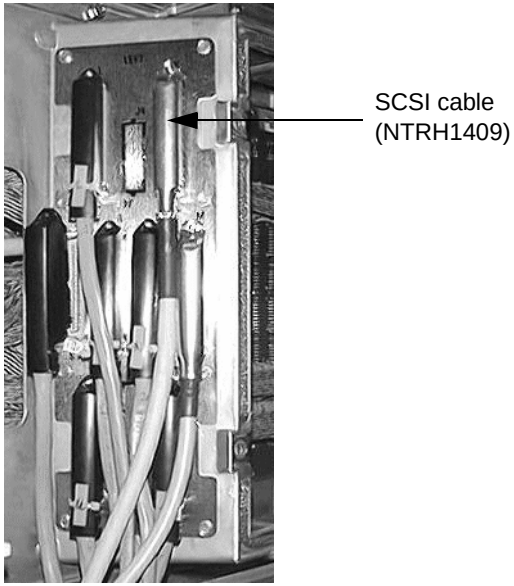


5 Thread the cable through the access channel to the back of the Meridian 1.

6 Attach the connector of the intermediate SCSI cable you threaded through the access channel to the vacated ring tip slot on the I/O panel.



7 Connect the Meridian 1 I/O panel-to-external devices SCSI cable (NTRH1409) to the NTRH1408 SCSI cable connector on the I/O panel.



8 Thread the NTRH1409 cable through the shelves below and out through the bottom of the Meridian 1 tower.

9 Replace the I/O panel cover.

10 Connect the CD-ROM drive or tape drive as described in "Connecting peripheral devices to the 200i server" on page 67.

Preparing SCSI devices for connection

Introduction

You can connect one or more SCSI peripherals to the SCSI connector on the 200i server. If there is more than one SCSI device, the devices are daisy-chained together. Each device on the SCSI bus must have a unique SCSI ID, and only the last device in the chain is terminated.

Supported SCSI devices

An external CD-ROM drive upgrades, reinstalls, and configures the 200i server. Because the CD-ROM drive is an external device, it requires its own 120 V power source.

An external SCSI tape drive backs up and restores data. Because the tape drive is an external device, it also requires its own 120 V power source.

ATTENTION

The CD-ROM and tape drives are not hot-pluggable. You must power down the 200i server to connect or disconnect either drive.

The following drives are discussed in this procedure:

- CD-ROM (NTRH9037): Plextor UltraPlex external SCSI CD-ROM drive
- tape drive (NTRH9038): Tandberg SLR5 tape drive

  Note: This is currently the only supported tape drive.

If your CD-ROM and tape drives are different, refer to the documentation for your drive for instructions on setting the SCSI ID and termination settings.

Supported daisy-chain connection scenarios

The first device in a SCSI device daisy chain can be either the tape drive or the CD-ROM drive. If you have a tape drive and a CD-ROM drive, then the tape drive must be the last device. The requirements for your daisy-chain scenario are based on the following items:

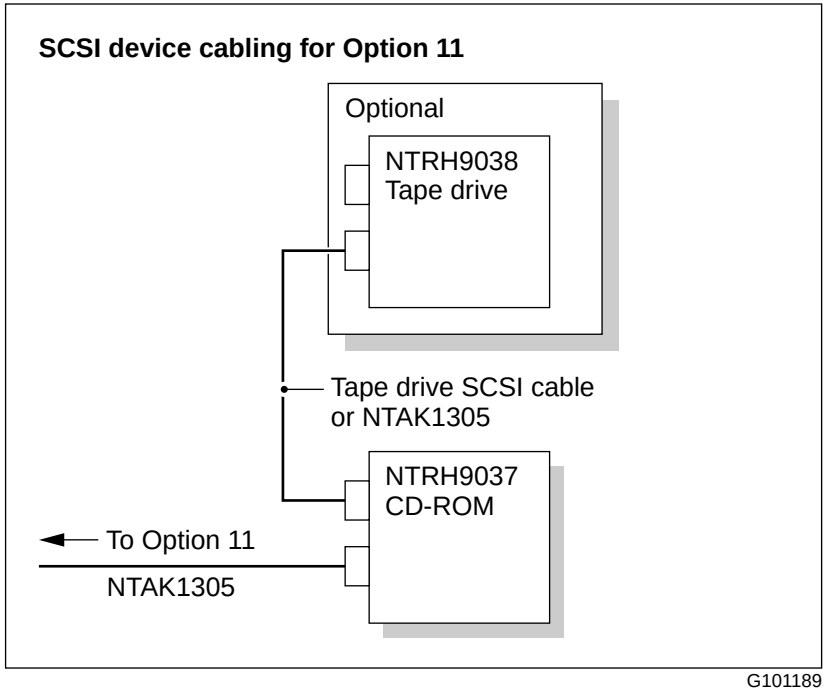
- the first device in the daisy chain
- the switch platform on which the 200i server is installed

Option 11

The following diagram shows the supported daisy-chain connection and cable requirements for the Option 11C.

Note: The tape drive does not require an external terminator. It is already internally terminated.

In this diagram, the CD-ROM drive is the first device in the daisy chain. The tape drive is the last device.

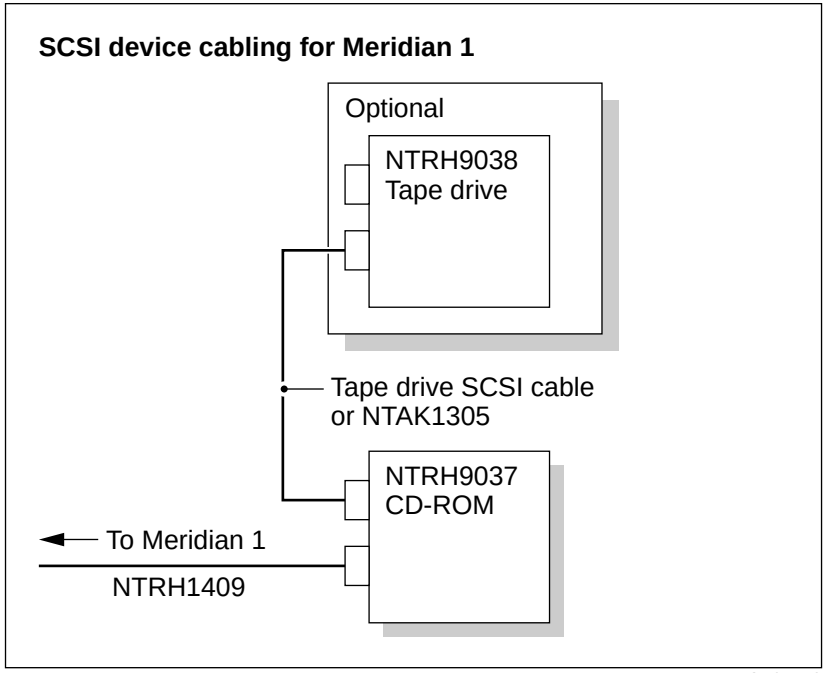


Meridian 1

The following diagram shows the supported daisy-chain connection scenario and cable requirements for the Meridian 1.

Note: The tape drive does not require an external terminator. It is already internally terminated.

In this diagram, the CD-ROM drive is the first device in the daisy chain. The tape drive is the last device.



Before you begin

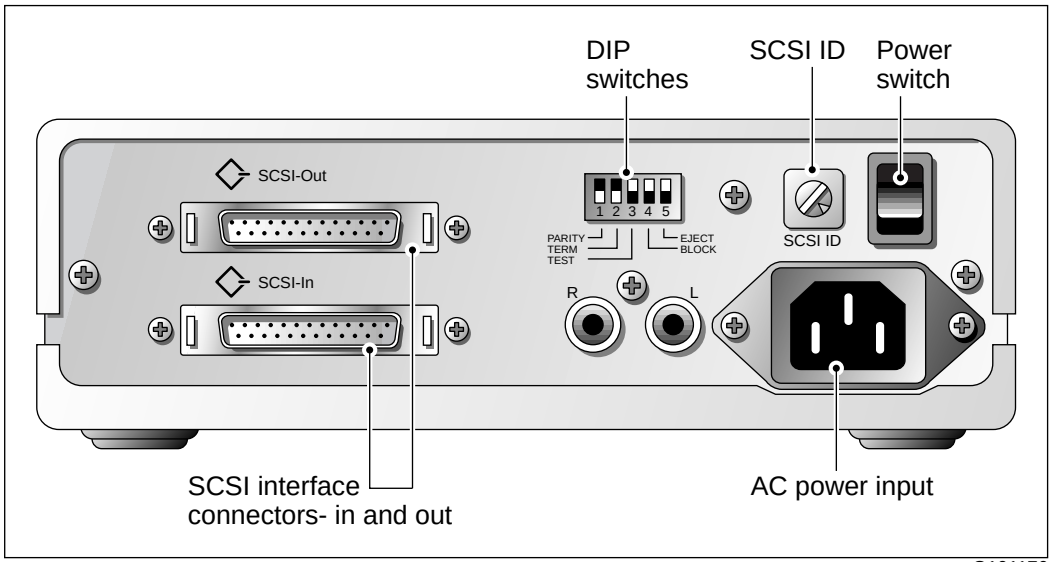
ATTENTION

To recognize the new settings, power down the CD-ROM and tape drives before changing the SCSI ID and DIP switches.

To set the CD-ROM drive SCSI ID

The SCSI ID setting is located on the back of the CD-ROM drive. (See the diagram that follows.)

To change the SCSI ID, use the blade of a screwdriver to rotate the SCSI ID dial's arrow to 3.



G101176

To set the CD-ROM drive DIP switches

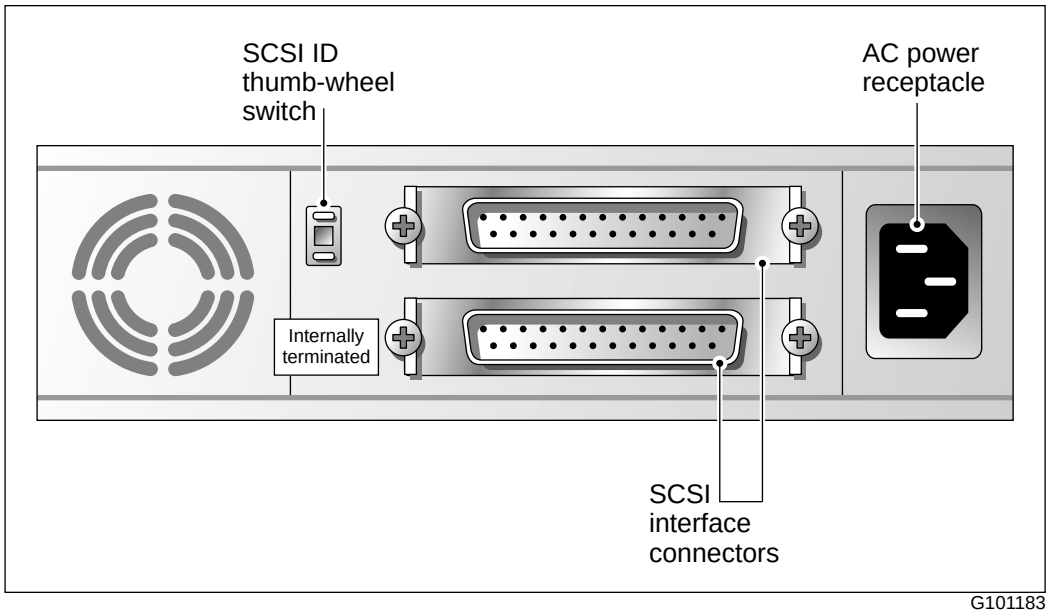
Set the CD-ROM drive DIP switches as described in the following table:

DIP switch	Description	Setting
1	Parity	ON
2	Termination	If the CD-ROM drive is the first and only device, set this switch to ON. If the CD-ROM drive is the first device and daisy chained with the tape drive, set this switch to OFF. For more details about setting this DIP switch, see "To set device termination" on page 63.
3	Test	OFF (this is for factory use only)
4	Block	OFF
5	Eject	OFF **Note:** If this switch is set to ON, the eject button on the CD-ROM drive is disabled. To eject the CD-ROM from the drive, a software eject command must be sent over the SCSI bus.

To set the Tape drive SCSI ID

The SCSI ID setting is located on the back of the tape drive. (See the diagram that follows.)

To change the SCSI ID, use the blade of a screwdriver to press either the + or the – button on the SCSI ID thumb-wheel switch. Set the SCSI ID to 5.



Note: The appearance and size of the tape drive cabinet is subject to change. However, the key components are shown in the above diagram.

To set device termination

Terminate the SCSI devices as described in the following table:

For this connection scenario	Do the following
CD-ROM drive only	Set DIP switch 2 on the back of the CD-ROM drive to ON. This terminates the drive.
Tape drive only	No external termination required. The drive is already internally terminated. This is indicated by a label on the back of the tape drive.
CD-ROM drive and tape drive (the tape drive is the last device)	■ Set DIP switch 2 on the back of the CD-ROM drive to OFF. ■ The tape drive is internally terminated. No external termination is required.

Preparing the modem for connection

Introduction

Before you can connect the modem to the 200i server, you must set the DIP switches. DIP switch 4 is particularly important. If DIP switch 4 is not set correctly, the 200i server will fail to boot.

Note: This topic applies only to the US Robotics 33.6 External Sportster fax modem. If your modem is different, refer to the documentation for your modem.

The following is a picture of the supported external fax modem.

Required equipment

To install the modem, you need the following items:

- analog external modem (NTRH9016) that includes
  - RJ-11 analog phone cord
  - power adapter cord
- 25-pin male to 9-pin female shielded serial cable (A0601464)
- analog line jack
- tweezers

To set the modem DIP switches

Use a pair of tweezers to set the DIP switches as described in the "Change to" column of the following table.

Note: The DIP switches are located on the back of the modem. ON is down. OFF is up.

DIP switch	Default setting	Change to	Function
1	OFF	OFF	Data Terminal Ready (DTR) override ■ OFF: Normal DTR operations (The computer must provide a DTR signal for the modem to accept commands. Dropping DTR terminates a call.) ■ ON: Modem ignores DTR (override)
2	OFF	OFF	Verbal/numeric result codes ■ OFF: Verbal (word) results ■ ON: Numeric results
3	ON	ON	Result code display ■ OFF: Suppresses result codes ■ ON: Enables result codes
4	OFF	ON	Command mode local echo suppression ■ OFF: Displays keyboard commands ■ ON: Suppresses echo
5	ON	ON	Auto answer suppression ■ OFF: Modem answers on first ring, or higher if specified in NVRAM ■ ON: Disables auto answer

DIP switch	Default setting	Change to	Function
6	OFF	OFF	Carrier Detect (CD) override ■ OFF: Modem sends CD signal when it connects with another modem; drops CD on disconnect ■ ON: CD is always ON (override)
7	OFF	OFF	Power-up and ATZ reset software defaults ■ OFF: Loads Y or Y1 configuration from user-defined nonvolatile memory (NVRAM) ■ ON: Loads &F0-Generic template from read-only memory (ROM)
8	ON	ON	AT command set recognition ■ OFF: Disables command recognition (dumb mode) ■ ON: Enables recognition (smart mode)

Connecting peripheral devices to the 200i server

Introduction

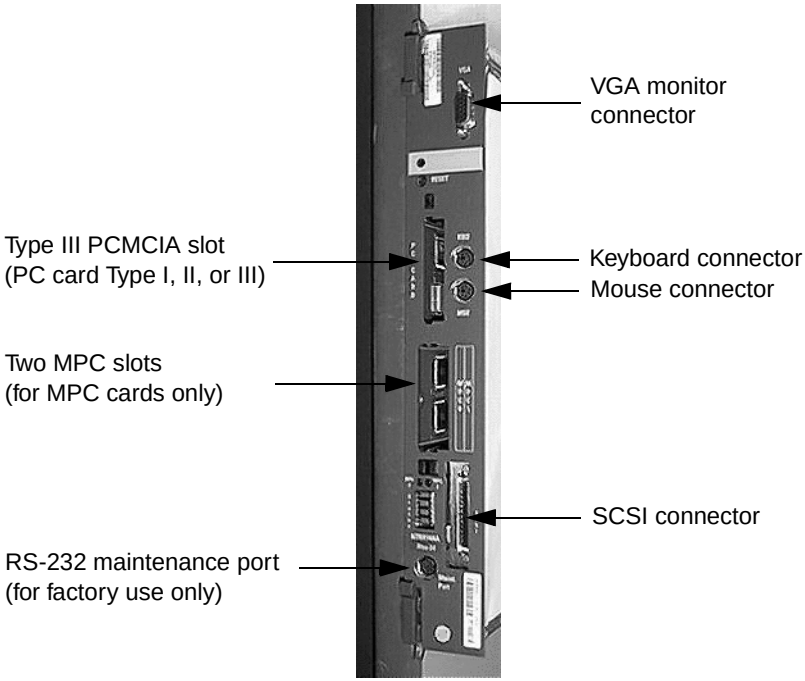
Continue installing the 200i server by adding all appropriate peripheral devices before securing the 200i server to the backplane.

Connection of peripheral devices consists of the following mini-procedures:

1. Connect the intermediate SCSI cable. See "Connecting the intermediate SCSI cable" on page 50.
2. Set the SCSI ID and termination setting for each SCSI device that will be connected. See "Preparing SCSI devices for connection" on page 57.
3. Set the DIP switches on the external fax modem. See "Preparing the modem for connection" on page 64.
4. Connect the peripheral devices to the 200i server. See the following procedures:
   - "To connect peripherals to the faceplate" on page 68
   - "To connect the CD-ROM and tape drives" on page 69
5. Connect the peripheral devices to the I/O breakout panel. See the following procedures:
   - "To connect peripherals to the I/O breakout panel" on page 71
   - "To connect the modem" on page 75

200i server faceplate and peripheral device connectors

The following picture identifies the peripheral device connectors and slots on the 200i server faceplate.



To connect peripherals to the faceplate

1. Insert MPC cards into the appropriate slots.

   Note: If cards are already installed, ensure that they are firmly seated in their slots.

2. Connect the monitor with a DB-15 cable connector.
3. Connect the keyboard and mouse using standard PS/2 connectors.

To connect the CD-ROM and tape drives

You can connect either the CD-ROM or tape drive to the intermediate SCSI cable that you connected to the 200i server faceplate earlier. For complete cabling diagrams, see the following sections:

- "Option 11 and CD-ROM and tape drive cabling" on page 70
- "Meridian 1 and CD-ROM and tape drive cabling" on page 71

1 Before you can connect the CD-ROM or tape drive, you must do the following tasks:

a. Install the intermediate SCSI cable. See "Connecting the intermediate SCSI cable" on page 50.

b. Set the SCSI ID and termination settings. See "Preparing SCSI devices for connection" on page 57.

2 Once you have completed the above tasks, connect the CD-ROM or tape drive to the switch as follows:

On the	Do the following
Option 11	■ CD-ROM drive: Connect the NTAK1305 SCSI cable from the CD-ROM to the SCSI connector located on the intermediate SCSI cable bracket assembly on the Option 11. ■ Tape drive: Attach the A0769312 SCSI adapter to the tape drive. Then connect the NTAK1305 SCSI cable from the adapter to the SCSI connector located on the intermediate SCSI cable bracket assembly on the Option 11.
Meridian 1	■ CD-ROM drive: Connect the CD-ROM drive to the NTRH1409 cable you connected earlier to the Meridian 1 I/O panel. ■ Tape drive: Attach the A0769312 SCSI adapter to the tape drive. Then connect the SCSI adapter to the NTRH1409 cable you connected earlier to the Meridian 1 I/O panel.

3 Connect additional devices in a daisy chain if required, using either the SCSI cable supplied with the tape drive or an NTAK1305 cable.

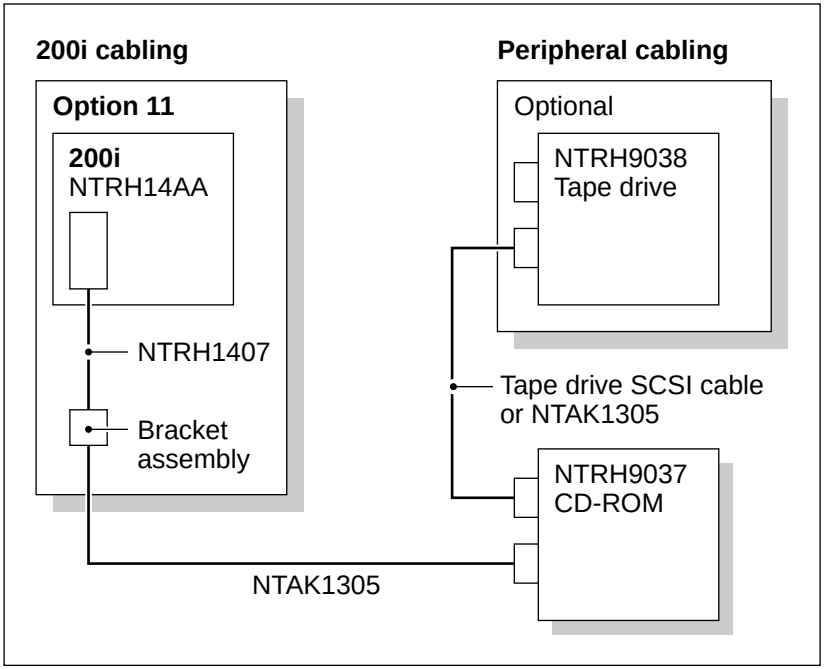
Note: For diagrams of how daisy-chain cabling is completed, see one of the following sections:

- "Option 11 and CD-ROM and tape drive cabling" (below)
- "Meridian 1 and CD-ROM and tape drive cabling" on page 71

Option 11 and CD-ROM and tape drive cabling

The following diagram shows how the SCSI cables and CD-ROM and tape drives are connected to the Option 11.

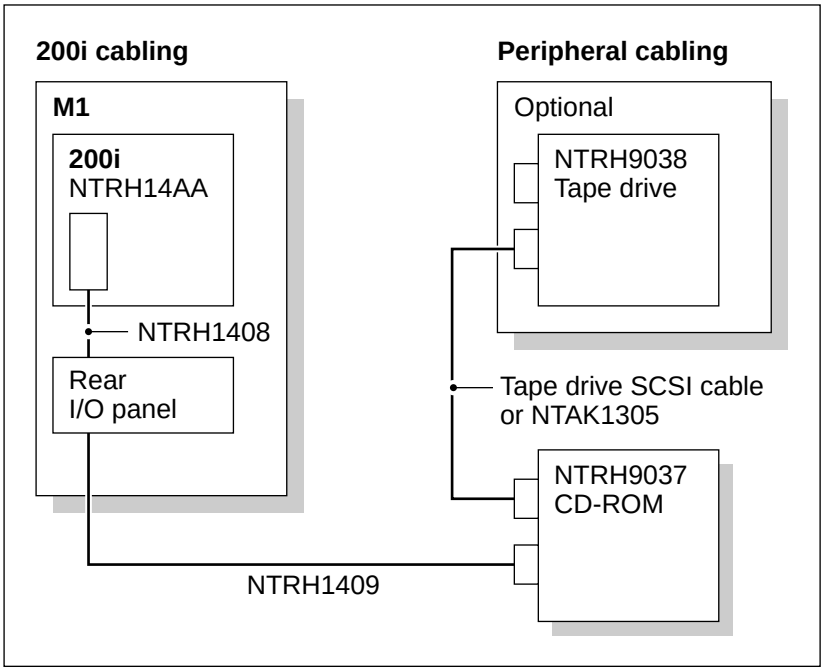
In this diagram, the CD-ROM drive is the first device. The tape drive is the last device.



Meridian 1 and CD-ROM and tape drive cabling

The following diagram shows how the SCSI cables and CD-ROM and tape drives are connected to the Meridian 1.

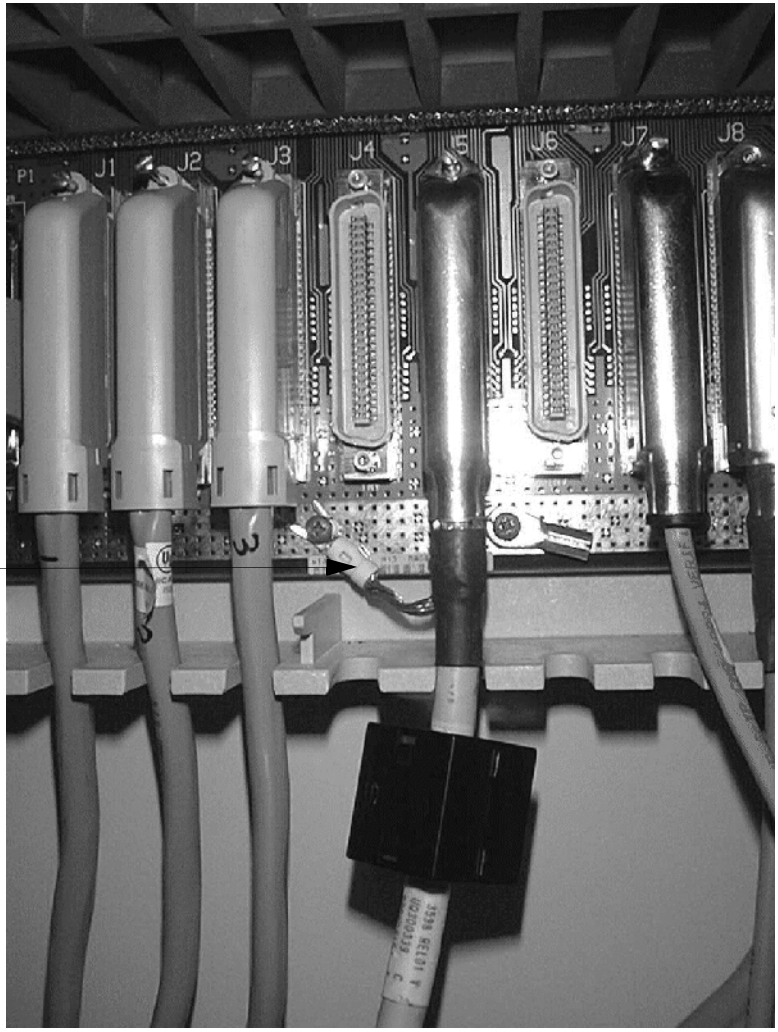
In this diagram, the CD-ROM drive is the first device. The tape drive is the last device.



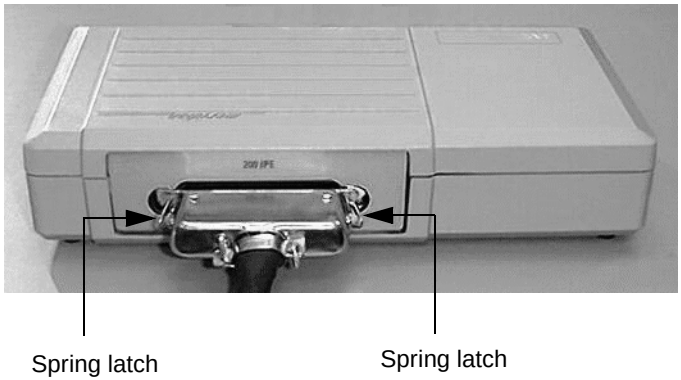
To connect peripherals to the I/O breakout panel

1 Connect the drain wire of the I/O breakout panel cable to the lower bolt of the associated ring tip connector on the switch.

Note: If you are connecting the I/O breakout panel to the Meridian 1, the ring tip connector is associated with the first slot position of the 200i server. The I/O breakout panel is shipped with a 1.8 m (6-foot) cable. You can purchase an optional 4.6 m (15-foot) breakout panel cable (NTRH0911) to simplify cabling.


Drain wire
P1
J1
J2
J3
J4
J5
J6
J7
J8

2 Connect the other end of the cable to the front of the I/O breakout panel.



Note: Ensure the spring latches are fastened.

3 If ELAN is present, connect the ELAN cable to the RJ-45 outlet on the left (connector 1).

Note: You must use a shielded twisted pair cable.

4 Connect the other end of the ELAN cable to your ELAN hub.

5 If you have a CLAN adapter installed, connect the CLAN cable to the RJ-45 outlet on the right (connector 2).

Note: You must use a shielded twisted pair cable. When the CLAN card is installed on your 200i server, the COM2 port is unavailable. COM2 is currently reserved for future use.

6 Connect the other end of the CLAN cable to your CLAN network hub (10Base-T compliance) or Token Ring MAU, router, or bridge.

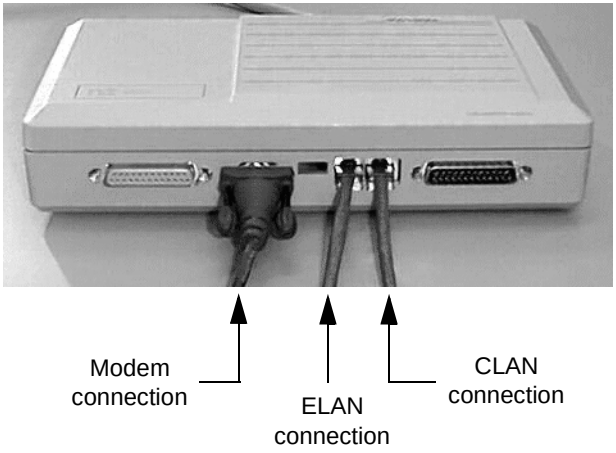
CAUTION

Risk of fire hazard if MAU is installed in an improper location

MAUs are not suitable for installation in ducts, plenums or other spaces used for environmental air. Do not install above a false ceiling or below a raised floor, unless it can be confirmed that these spaces are not used to convey environmental air.

7 Connect the modem as described in "To connect the modem" on page 75.

Result: The back of the I/O breakout panel appears as follows:



8 Connect the power cords for all peripherals.

9 Power on all peripherals as appropriate.

To connect the modem

1 Ensure the DIP switches are set as described in "Preparing the modem for connection" on page 64.

ATTENTION

Failure to set DIP switches properly can result in 200i server bootup failures.

2 Attach the 25-pin male end of the serial cable to the modem and the 9-pin female end to the COM1 port on the I/O breakout panel.

Note: Ensure that you secure the serial cable to the modem and I/O breakout panel using the serial cable connectors' built-in screws.

3 Connect one end of the RJ-11 phone cord to the telco jack closest to the edge of the modem and the other end to an analog jack.

CAUTION

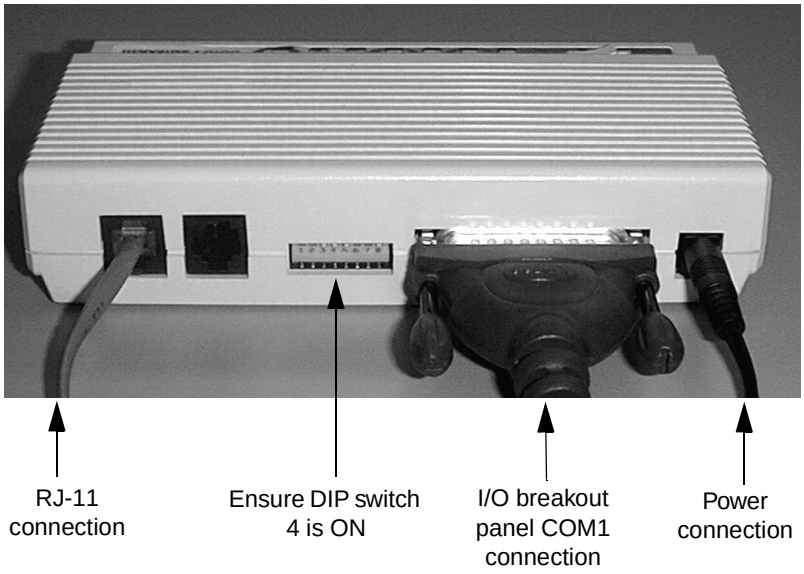
Risk of equipment damage

Connect the modem to an analog line only. Use of a non-analog line (for example, digital, PBX, Multiline) damages the modem.

4 Plug the power cord into an electrical outlet.

5 Plug the other end of the power cord into the modem's power adapter connector.

Result: The back of the modem appears as follows:



6 Power up the modem.

Note: Ensure that the modem is receiving power by checking that at least one LED on its front panel is lit.

7 Place the modem in an area where it cannot be accidentally damaged or where people cannot trip over attached cords.

8 Continue with "Completing the installation" on page 77.

Completing the installation

Introduction

To complete the installation of the 200i server, you must

- connect the I/O breakout panel to the switch
- push the 200i server into position
- boot the 200i server into Windows NT

LED hex display

ATTENTION

If the diagnostic codes on the LED hex display stop between T:18 and T:21 during the boot sequence, then the switch has not been programmed. After you complete the switch programming in Part 3 of this binder, press the Reset button on the 200i to reboot and to restart the diagnostics codes.

The LED hex display might show MIN, MAJ, or CRI warnings until you have run the Configuration Wizard in Part 3 of this binder.

To complete the installation and boot the 200i server

Note: Ensure that the shelf on which the 200i is installed is powered up.

1. Connect the I/O breakout panel cable to the high-density connector corresponding to the 200i server slot.

   Note: The 200i server occupies two slots on the shelf. Ensure that the cable screws are fastened.

2. Push the 200i server gently but firmly until it is flush with the backplane.
3. Close the lock latches to secure the 200i server to the backplane.
4. Ensure that the red LED power indicator is lit.
5. When the following menu appears, select option 1 to boot Windows NT:

```
Select one of the following:
---------------------------
1 Boot Windows NT (Default within 5 secs)
2 Re-Boot DOS
3 Exit to DOS

Choose an option[1,2,3]?1
```

Result: The Windows NT boot begins.

6 Ensure that the Windows NT logon window appears.

Note: If the Windows NT logon window does not appear, refer to Part 5 of this binder for troubleshooting instructions.

What's next?

Continue with Part 3 of this binder.

Restarting the server

Introduction

If it is necessary to restart the server, use the following procedure.

To restart the server

1. Press the Ctrl, Alt, and Delete keys simultaneously.

   Result: The Windows NT Security dialog box appears.

2. Click Shut Down... .

   Result: The Shutdown Computer dialog box appears.

3. Select Shutdown and Restart.

4. Click OK.

   Result: You might be informed that an SQLAnywhere service is running with connections, and asked if you want to end it.

5. Click Yes or End Task.

   Result: You might also be asked if you want to save ACD proxy changes.

6. Click No.

   Result: The server shuts down and powers down.

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CallPilot

Installation and Configuration

Part 2: 200i Server Hardware Installation

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