555-7101-220

CallPilot

Installation and Configuration
Part 2: 201i Server Hardware Installation

Product release 1.07 | Standard 1.0 | October 2000

NORTEL NETWORKS™

P0916258

CallPilot

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Publication number:	555-7101-220
Product release:	1.07
Document release:	Standard 1.0
Date:	October 2000

Publication history

October 2000

Standard 1.0 of *CallPilot Part 2: 201i Server Hardware Installation Part 2: 201i Server Hardware Installation* is released for CallPilot 1.07 general availability.

Contents

Chapter 1

Before you begin

In this chapter

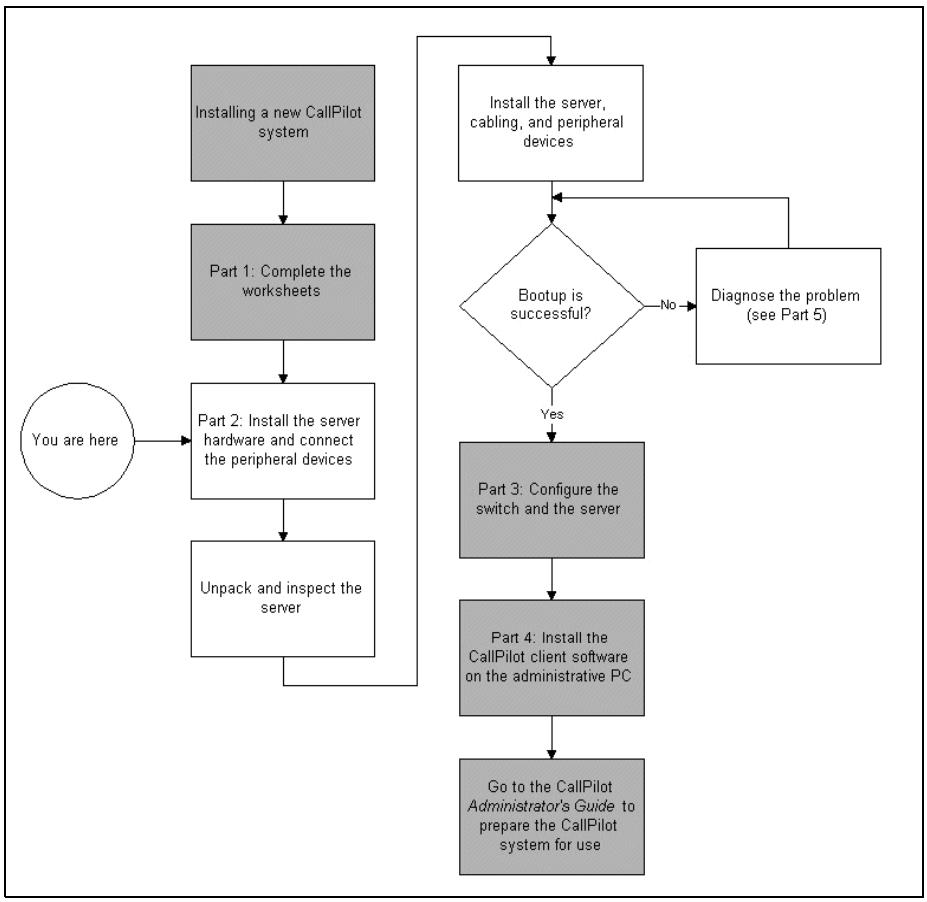
Installation overview

Introduction

This section briefly describes what the CallPilot installation process involves.

Installation flowchart

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



201i server installation steps

1. Inspect and install the server hardware as described in this guide (Part 2 of this binder).
2. Program the switch.

   See “Switch programming” in Part 3 of this binder.

   Note: Skip the following chapters in Part 3 of this binder:

   - “Connecting the server to the switch”
   - “Connecting the server to the CLAN”

   The tasks described there are discussed in this guide (Part 2 of this binder).
3. Configure the CallPilot server.

   See “Configuring the server software” in Part 3 of this binder.
4. Configure the Remote Access Service.

   See “Configuring Remote Access Service” in Part 3 of this binder.
5. Configure pcANYWHERE32.

   See “Preparing the server for remote access with pcANYWHERE32” in Part 3 of this binder.
6. Verify that CallPilot is connected to the switch and can receive calls.

   See “Verifying that CallPilot can receive calls” in Part 3 of this binder.
7. Install the administration client software.

   See Part 4 of this binder.

Site inspection checklist

Before you perform hardware installation, complete the following 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 the 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: ■ monitor (for temporary connection) ■ modem ■ CD-ROM drive ■ tape drive (optional) ■ embedded LAN (ELAN) hub ■ administration PC and monitor ■ customer-supplied network equipment (if required)
❒	Ensure that jacks and cables are ready for all required connections.
❒	Obtain the following for all equipment on both the CLAN and the ELAN: ■ unique computer names ■ IP addresses ■ subnet masks

Customer-supplied equipment checklist

Ensure that the customer has supplied the equipment identified in the following checklist:

Check	Description
❒	PC that can be used as an administration client PC. The administration PC can be on the CLAN or the ELAN. Refer to Part 4 of this binder for details on the administration client PC.
❒	Hub for the CLAN (optional) or appropriate alternative.
❒	Jacks and a cable for connecting the server to the CLAN (optional).
❒	TCP/IP-based ELAN that connects the switch and the server.
❒	A hub for the ELAN (or appropriate alternative) and power cord.
❒	Ethernet connections ready at the Meridian 1 or Option 11C switch (cables and Ethernet transceivers/MAUs).
❒	Web server PC if the customer has purchased Web Messaging. Refer to “CallPilot Web Messaging” in the *Desktop Messaging Software Installation Guide* (NTP 555-7101-505) for details.

Required tools and materials

Ensure that the tools and materials identified in the following checklist are available. You might need to use them to perform installation tasks:

Check	Description
❒	Antistatic ESD wrist strap (recommended)
❒	Two Phillips cross-head screwdrivers (No. 1 and No. 2)
❒	Standard slot-head screwdriver (1/4" and 1/2")
❒	Sidecutters
❒	Jumper removal tool or needle-nosed pliers
❒	Tweezers
❒	Tape measure for determining cable lengths
❒	Pen for writing notes, cable lengths, and cable identifications
❒	Cable tie wraps
❒	Cable identification labels
❒	Equipment log The equipment log 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)
❒	Laptop computer and CD-ROM drive (to read documentation on CD-ROM and to connect to the network on which the server is located 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
- SNMP and Remote Access Service (RAS)
- software for the switch-connectivity hardware
- CallPilot software
- SQL Anywhere database
- pcANYWHERE32 version 8.0

Cautions

CAUTION

Risk of reduced system performance

Screen savers should not be activated on CallPilot servers. Screen savers consume significant CPU resources and, therefore, impact CallPilot's response time.

CAUTION

Risk of software malfunction

Only software that comes with CallPilot is supported on the CallPilot server. Installing additional software can cause CallPilot to malfunction.

Nortel Networks-supplied software media

Introduction

This section identifies the software media that is supplied with the 201i server.

When to use the software media

Store the software media in a safe place and use it when instructed in the documentation. CallPilot server software is preinstalled at the factory, so you might not be asked to use some of these CD-ROMs unless you are performing recovery procedures, reinstallation, or an upgrade.

Supplied software media

Software media		Part number
❒	Win NT 4.0 OS Recovery CD-ROM	NTRH8027
❒	Application Server Master Driver CD-ROM **Note:** The bootable feature of the Application Server Master Driver CD-ROM is not supported by the 201i.	NTRH8101
❒	CallPilot 1.07 Server CD-ROM	NTUB40AC
❒	CallPilot 1.07 Admin Client CD-ROM	NTUB41AC
❒	CallPilot 1.07 Desktop Messaging CD-ROM	NTUB42AC
❒	CallPilot 1.07 Global PEP CD-ROM	NTUB43AC
❒	CallPilot 1.07 Language Prompts CD-ROM set (3)	NTUB44BC
❒	CallPilot 1.07 Web Messaging CD-ROM	NTUB45AC

Environmental specifications

Introduction

This section identifies the 201i server's environmental specifications.

Temperatures

Recommended temperature	15°C (59°F) to 30°C (86°F)
Absolute temperature	10°C (50°F) to 45°C (113°F)
Long-term storage temperature	–20°C (-4°F) to 60°C (140°F)
Short-term storage temperature	–40°C (-40°F) to 70°C (158°F) (less than 72 hours)
Change rate temperature	Less than 1°C (34°F) per three minutes

Relative humidity

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

Chapter 2

Safe handling of CallPilot components

In this chapter

General safety

Introduction

When installing, replacing, or upgrading 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.

Precautionary messages

This guide provides warnings when risks related to hardware installation and handling are known. Do not ignore these warnings.

Note: For a description of the potential impact that the warnings in this guide might have if they are ignored, refer to “Symbols and conventions” in Part 1 of this binder.

General precautions

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

- Plug the peripheral devices only 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 you cannot trip over or step on the cables.
- Do not push any foreign objects into any server opening.
- When handling components, protect the server from electrostatic discharge by wearing an antistatic wrist strap attached to any unpainted metal surface on the switch.

Avoiding electrostatic discharge

Introduction

Electrostatic discharge (ESD) can seriously damage component parts, such as boards, disk drives, and other parts.

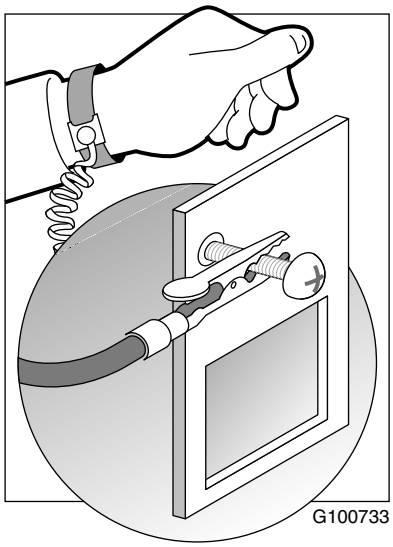
ATTENTION

Nortel Networks recommends performing all hardware installation and maintenance procedures at an ESD workstation whenever possible.

Antistatic wrist strap

If an ESD workstation is not available, provide some ESD protection by wearing 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 a chassis.



To discharge static

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

Precautions for handling components

Nortel Networks recommends the following precautions 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, use antistatic floor pads and workbench pads as well.
- 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 drives

Introduction

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

Avoid vibration or physical shock

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

Handle hard drives with care

After removing a hard drive 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 drive 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 drive. Refer to Part 5 of this binder for detailed instructions.

ATTENTION

You must shut down the 201i server and then remove it from the IPE shelf before you can remove the hard drive.

Store hard drives carefully

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

Handling CD-ROMs

Introduction

When removing a CD-ROM from its protective case or loading it to a drive, hold it by its center hole and outer edge. Avoid touching the CD-ROM's data surface (the non-labeled side).

To protect the CD-ROM against scratches and dirt when not in use, keep it in its protective case.

To load a CD-ROM

1. Press the eject button on the CD-ROM drive to eject the disk tray.
2. Place the CD-ROM on the tray with its labeled side facing up.
3. Press the eject button or gently press the front of the disk tray to retract the tray back into the drive.

To eject a CD-ROM

1. Press the eject button on the CD-ROM drive to eject the disk tray.
2. Remove the CD-ROM from the tray and put it in its protective case.
3. Press the eject button or gently press the front of the disk tray to retract the tray back into the drive.

Chapter 3

About the 201i server

In this chapter

Overview

Introduction

The 201i 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 201i 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. Server maintenance and diagnostics are also provided at the server (LEDs, HEX display, and so on) or using system utilities and Windows NT. These are discussed in Part 5 of this binder.

What this chapter contains

This chapter describes the following 201i server components:

- 201i server motherboard and faceplate (see page 27)
- network connectivity (see page 32)
- supported peripheral devices (see page 34)

Introducing the 201i server

Introduction

This section describes the following 201i server components:

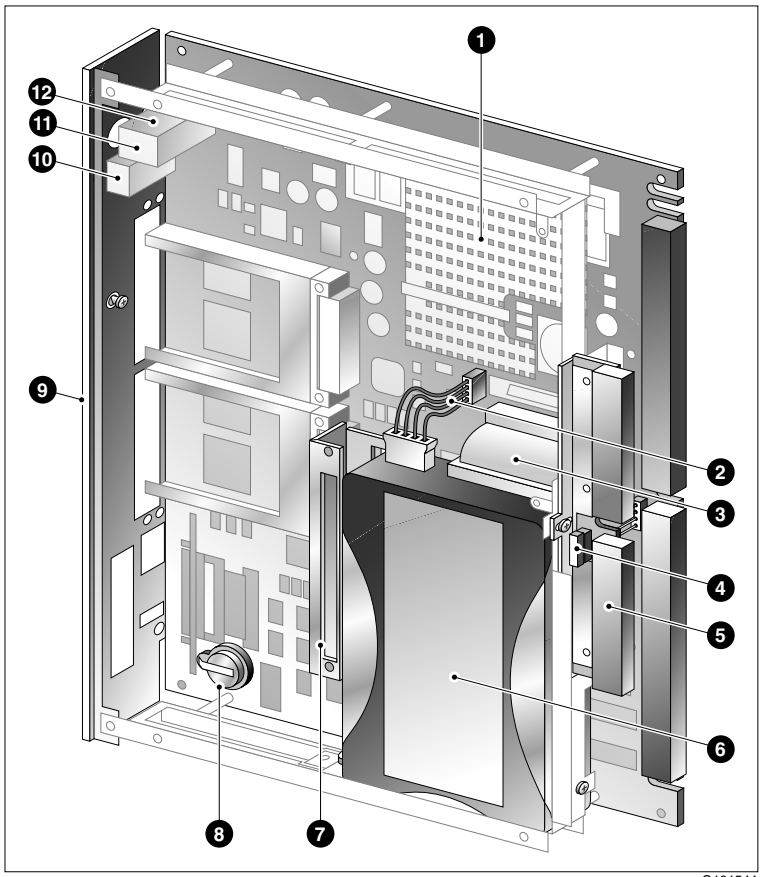
- motherboard
- faceplate

Primary components

The 201i server's motherboard houses the interfaces needed to communicate with the Meridian 1, Option 11C, or Option 11C Mini switch, and to facilitate data communications on Ethernet networks.

Ethernet capability is provided by two Ethernet controllers on the 201i server's motherboard. These controllers provide the network interfaces for both the ELAN and CLAN.

The following diagram identifies the 201i server components:

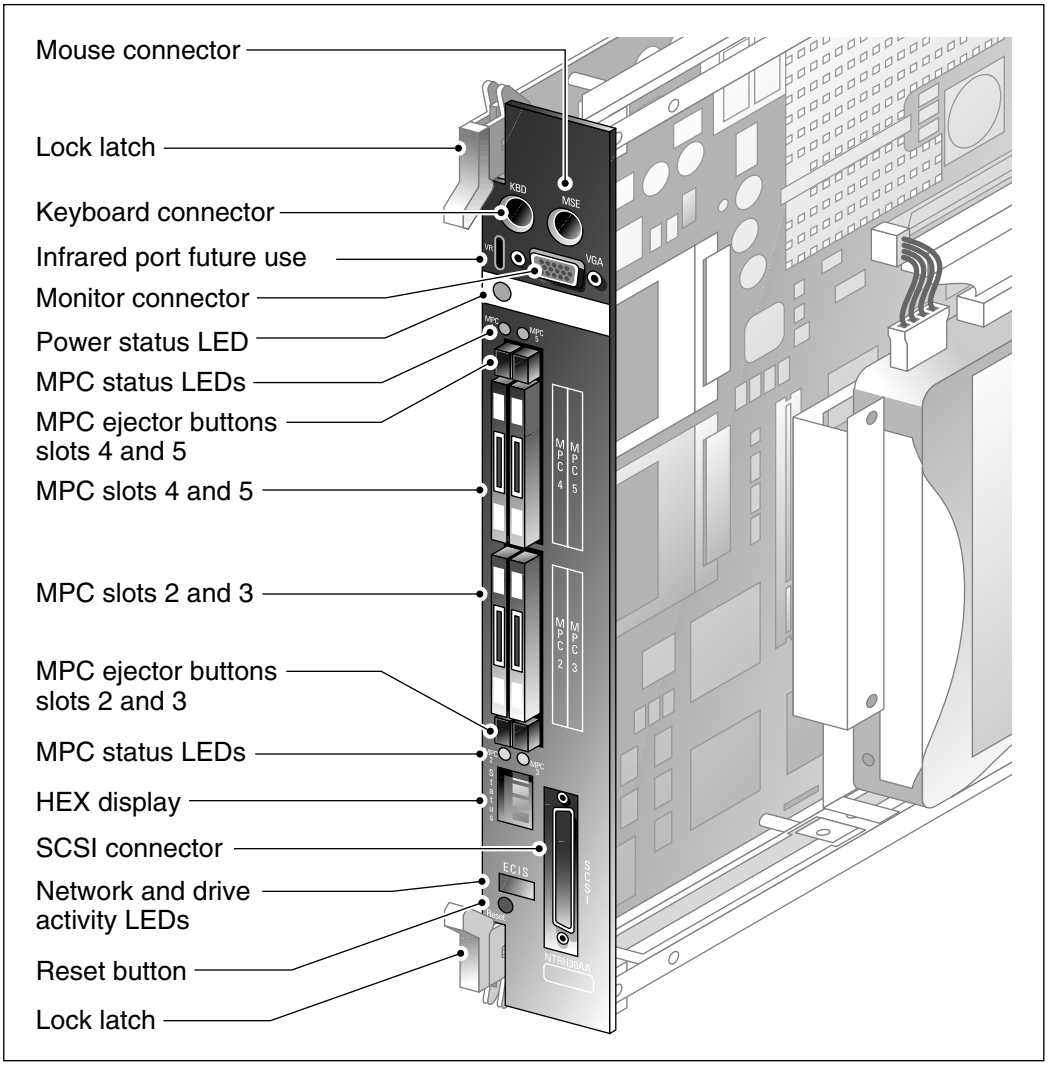


Legend

Item	Description
1	Heat sink
2	Hard drive power cable
3	Hard drive data cable
4	Secondary backplane connector pin
5	Secondary backplane connector
6	3.5" IDE hard drive
7	Hard drive mounting bracket
8	Software feature key
9	Faceplate
10	Monitor connector
11	Mouse connector
12	Keyboard connector

Faceplate

The following diagram shows the 201i server's faceplate. The faceplate provides LEDs, MPC slots, and connectors for peripheral devices:



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The following table describes each faceplate feature:

Faceplate feature	Description
Mouse connector	The mouse connector is a standard PS/2 connector and is hot-pluggable.
Lock latches	Lock latches at the top and bottom of the faceplate secure the server to the IPE shelf.
Keyboard connector	The keyboard connector is a standard PS/2 connector and is hot-pluggable.

Faceplate feature	Description
Infrared port	For future use.
Monitor connector	The monitor connector is a standard, high-density 15-pin female connector.
Power 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
MPC status LEDs	There is an LED for each MPC slot. The following describes each LED status: ■ Off: The MPC is not receiving power. It is safe to remove the card. ■ On: The MPC is in use. It is *not* safe to remove the card. ■ Off, then on: The MPC has been recognized by the 201i server software and has been powered up. ■ On, then off: The MPC has been successfully powered down. It is safe to remove the card.
MPC ejector buttons	There is one ejector button for each MPC slot. When you insert the card, the associated ejector button pops out. Press the button to eject the card from its slot.
MPC slots	MPCs house DSP units and are used for multimedia telephony processing. Up to four MPCs can be installed on the 201i server. The 201i is shipped with MPC-8 cards installed. All slots are faceplate-accessible. The MPCs are numbered as follows: ■ top row of slots: MPCs 4 and 5 ■ bottom row of slots: MPCs 2 and 3 **Note:** MPC 1 is embedded on the motherboard.
Hexadecimal (HEX) display	The four-digit LED-based display provides feedback on the current status of the server, including fault conditions.
SCSI connector	This connector connects SCSI devices to the 201i server (for example, a CD-ROM or tape drive). Press the button latches to lock or unlock a cable from the connector.

Faceplate feature	Description
Network and drive activity LEDs (labeled as ECIS)	The E and C LEDs indicate the presence of network activity for both the ELAN and CLAN interfaces (respectively). When they are lit, they indicate that the interfaces are properly attached to their respective hubs. When the LEDs are blinking, there is network activity. When the I and S LEDs are lit, it means that the IDE hard drive and SCSI device are being accessed.
Reset button	The reset button allows you to manually restart the 201i server without removing it from the IPE shelf. **ATTENTION** Before you press the reset button, you must shut down Windows NT. Press the reset button while Windows NT is running *only* when you cannot shut down Windows NT normally because of a system lockup.

Network connectivity

Introduction

This section describes how the 201i server obtains its connections to the network.

Supported network protocols

The 201i server supports the following network protocols:

- CLAN: 10- or 100Base-T Ethernet

  Ethernet CLAN capability is provided through a built-in Ethernet controller on the 201i server's motherboard.

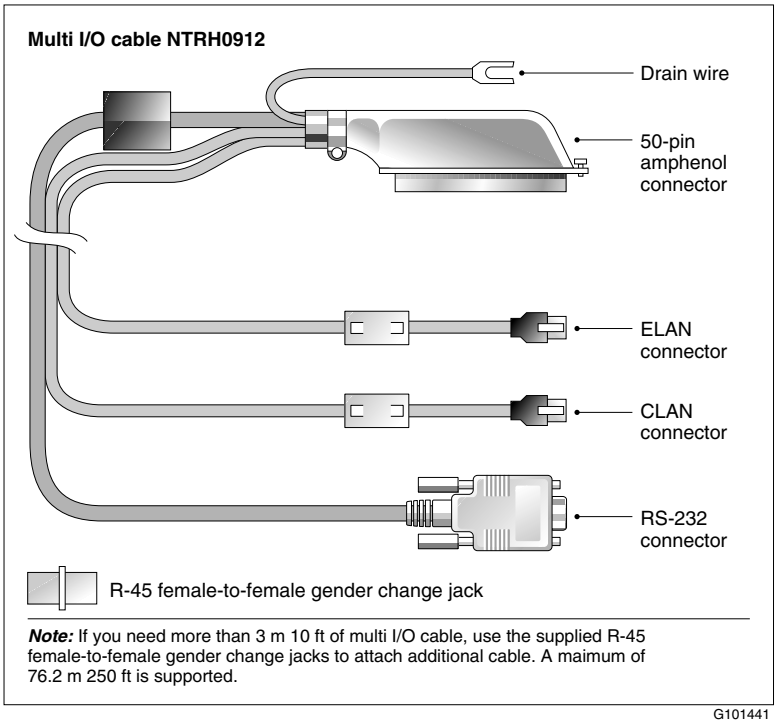
- ELAN: 10Base-T Ethernet

  This is provided through a built-in Ethernet controller on the 201i server's motherboard.

The CLAN and ELAN connections are established by using a multi I/O cable.

Multi I/O cable description

The multi I/O cable contains four connectors, and is approximately 3 m (10 ft) in length. See the following diagram:



The following table describes the connectors provided by the NTRH0912 multi I/O cable:

Connector type	Purpose
50-pin amphenol	201i server connection to the switch
10- or 100Base-T (RJ-45)	CLAN interface
10Base-T (RJ-45)	ELAN interface
RS-232 COM 1 (male DB-9)	Remote Access Service (RAS) modem

Note: Labels on the RJ-45 cables distinguish the CLAN and ELAN connectors.

Multi I/O cable ELAN connector

The ELAN connector on the multi I/O cable provides a 10 Mbit/s Ethernet connection between the 201i server and the 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.

Multi I/O cable CLAN connector

The 10 Mbit/s Ethernet CLAN connector provides the following:

- the connection to an existing network for connectivity to users' desktop computers
- a path for LAN-based server administration

ATTENTION

If you need Ethernet 100BaseT operation at 100 Mbit/s on large Meridian 1 systems (such as Option 51), you must install the NTRH3501 backplane (tip and ring) cable.

Multi I/O cable RS-232 connector

The RS-232 connector on the multi I/O cable provides the connection to an external high-speed modem. The modem allows administrators and technical support personnel to administer the 201i server from a remote location.

Peripheral connectivity

Introduction

Peripheral equipment is attached to the 201i server on the server faceplate.

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
- MPC card (permanent connection)
- SCSI cable (permanent connection)

Monitor, keyboard, and mouse

You need the monitor, keyboard, and mouse to install the operating system on the 201i server. All three peripheral components are hot-pluggable.

MPC-8 card

The MPC-8 card looks like a Type II PC card, and supports the multimedia telephony services on the 201i server. Four specially designed card slots are available for the MPC-8. All of them are located on the 201i server faceplate.

Note: For this release, only two slots are supported.

SCSI connections

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

The following table describes how the SCSI connection is achieved:

Switch platform	Description
Large Meridian 1 systems	For large Meridian 1 systems (such as Option 51), the intermediate SCSI cable is routed to the I/O panel on the rear of the IPE shelf housing the server. Another cable coming from the I/O panel establishes the connection to the SCSI devices. This is described in "Installing Meridian 1 hardware and cables" on page 47.
Option 11C	When the 201i server is installed in an Option 11C cabinet, an intermediate SCSI cable is routed through the wiring channel to a 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 "Installing Option 11C cables" on page 65.
Option 11C Mini	When the 201i server is installed in an Option 11C Mini cabinet, the SCSI cable is routed from the 201i server faceplate directly to the SCSI device. If the Option 11C Mini is equipped with a Fiber Routing Guide, you must remove it before you can install the SCSI cable. This is described in "Installing Option 11C Mini cables" on page 71.

ATTENTION

Due to a Windows NT restriction, you must connect external SCSI devices before the 201i server is started. External SCSI devices cannot be disconnected while the 201i server is powered on.

If a SCSI device is not connected before the 201i server is started, or a device is disconnected after the 201i server is started, you must reconnect the device and restart the system.

Supported peripheral devices

The following table describes the 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. Since the CD-ROM drive is an external device, it requires an AC 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. Since the tape drive is an external device, it requires an AC 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 201i server. The modem connects to the RS-232 COM1 connector on the multi I/O cable. Since the modem is an external device, it requires an AC power source.
Monitor, keyboard, and mouse	Keyboard: NTRH9013 14" monitor: NTRH9011 Since the monitor is an external device, it requires an AC power source. Mouse: NTRH9014

Chapter 4

Installing the server and connecting the peripherals

In this chapter

Overview

Introduction

This section provides a high-level overview of the requirements and procedure for installing the 201i server.

Prerequisites

Switch slot requirements

The 201i server occupies physical and electrical slots. The 201i server must be installed in two peripheral equipment slots as follows:

- Option 11C: in slots 1 through 9 in any Option 11C cabinet
- Option 11C Mini: in a pair of consecutive slots in any cabinet

  The 201i server cannot be installed in slots 0 or 4 because these slots are dedicated to other cards. For more information about cards and slots, refer to the Option 11C Mini documentation.
- Meridian 1 tiered systems: in slots 0 through 14

  Ensure that both slots have electrical backplane connectivity.

Meridian 1 I/O panel connections

On the Meridian 1, the 201i server requires two connections from the IPE slots to the I/O panel on the rear of the switch, as follows:

- One connection is for the multi I/O cable.

  This connection corresponds to the left slot (when viewing the front of the Meridian 1 switch).
- The other connection is for the external SCSI device.

  This connection corresponds to the right slot (when viewing the front of the Meridian 1 switch).

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

Local area network

If you have a LAN (for example, CLAN or ELAN), the LAN must be configured and the appropriate networking equipment must be available.

If the LAN is to be networked with the 201i server, you need a network specialist to ensure proper configuration.

Inspect the site

Complete the “Site inspection checklist” on page 12 before installing the 201i server.

Installation overview

1. Unpack the 201i server (see page 44).
2. Inspect the 201i server for possible damage (see page 45).
3. If you are installing the 201i server into a Meridian 1 tiered system, do the following:
   - Change the location of the secondary backplane (DS30x) connector on the 201i server (see page 50).
   - Replace the existing backplane (tip and ring) cable on the Meridian 1 with the one supplied with the 201i server (NTRH3501) (see page 57).
4. Install the intermediate SCSI cable. This cable is used to connect the external CD-ROM or tape drive.

For	See
Meridian 1	page 60. Two cables are required to complete the connection between the 201i server and the SCSI device: NTRH1408 and NTRH1410.
Option 11C	page 66. Two cables are required to complete the connection between the 201i server and the SCSI device: NTRH1407 and NTRH3502.
Option 11C Mini	page 73. Only one cable is required to complete the connection between the 201i server and the SCSI device: the NTRH3502 cable that is provided in the CD-ROM and tape drive kits.

5. Set the DIP switches on the modem (see page 89).
6. Set the following:
   - SCSI IDs on the CD-ROM and tape drives (see pages 91 and 93)
   - DIP switches on the CD-ROM drive (see page 92)
   - device termination on the CD-ROM and tape drives (see page 95)
7. Insert the 201i server into an available position on the switch shelf (see page 98).

   Note: The 201i server occupies two peripheral equipment slots.

8. Install the MPC cards (see page 103).
9. Connect the 201i server and devices as follows:
   - Connect the monitor, keyboard, and mouse to the 201i server faceplate (see page 105).
   - Connect the CD-ROM and tape drives to the intermediate SCSI cable (see page 106).
   - Connect the multi I/O cable to the ELAN and CLAN network hubs (see page 110).

     Note: If more than 3 m (10 ft) of multi I/O cable is required, use the supplied RJ-45 female-to-female gender change jacks to attach additional cable. Up to 76.2 m (250 ft) of cable length is supported.
   - Connect the modem to the multi I/O cable (see page 113).
   - Connect the power cords for all devices.
   - Power up the devices.
10. Complete the installation of the 201i server as follows:
    - Connect the intermediate SCSI cable to the 201i server faceplate.
    - Close the lock latches on the 201i server.
    - Boot the 201i server to Windows NT.

    See page 115.

When you are finished, continue with Part 3 of this binder.

About the ELAN

Introduction

The ELAN is

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

The ELAN's primary purpose is to provide data connectivity for AML call control messaging between the switch and the CallPilot server.

Desktop client PCs and the ELAN

ATTENTION

Desktop client PCs should not use the ELAN. Each Option 11C and Option 11C Mini (including expansion cabinets) and Meridian 1 tiered 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.

System performance and the ELAN

CAUTION

Risk of reduced system performance

Based 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 technical support representative.

System administration and the ELAN

In addition to its primary purpose of carrying call control information, the ELAN facilitates network-based management by allowing for local onsite administration of CallPilot servers and Meridian switches using ELAN-based administration client PCs. CallPilot administration 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 adversely affects the call processing abilities of ELAN-based Meridian switches and CallPilot servers.

Inspecting the 201i server

Introduction

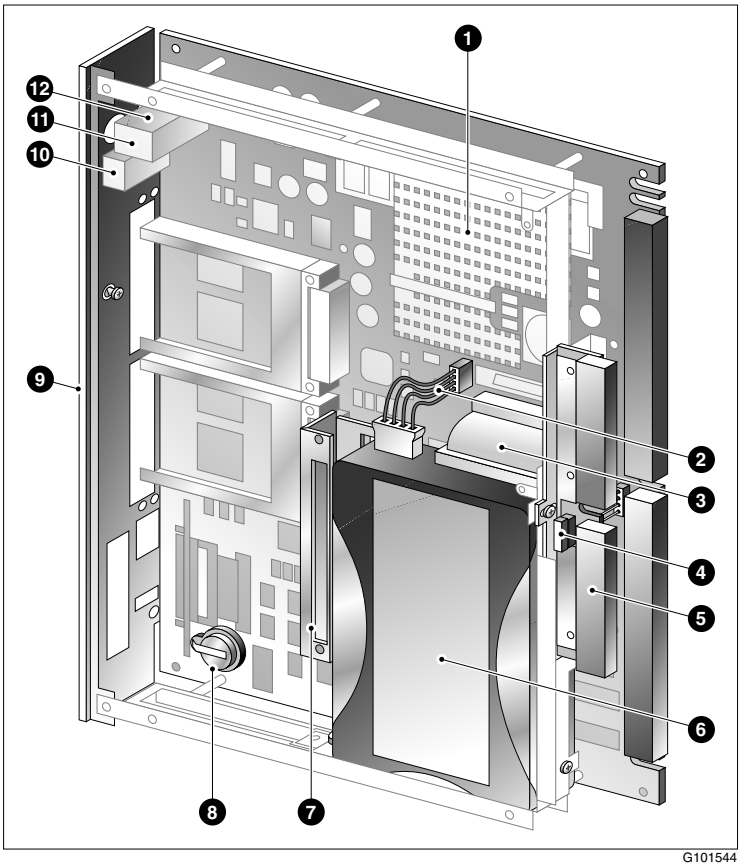
This section describes how to inspect the 201i server for damage. It also describes what to do if you determine that the 201i server is faulty.

To unpack the 201i server

1. Remove the 201i server from its packaging.
2. Remove the 201i server from the antistatic bag.
3. Place the 201i server on an antistatic surface.
4. Perform a visual inspection of the 201i server (see page 45).
5. Verify the components received against shipping documents.

201i server description

The following diagram and table show where major components are located on the 201i server:



Legend

Item	Description
1	Heat sink
2	Hard drive power cable
3	Hard drive data cable
4	Secondary backplane connector pin
5	Secondary backplane connector
6	3.5" IDE hard drive
7	Hard drive mounting bracket
8	Software feature key
9	Faceplate
10	Monitor connector
11	Mouse connector
12	Keyboard connector

To inspect the 201i server for shipping damage

Before proceeding with the installation, visually inspect the 201i server for any damage that might have incurred during shipping. Ensure also that the items in the following checklists are secure:

Item	Yes	No
Is the software feature key securely seated in its bracket?	❒	❒
Is the hard drive and bracket interface secure?	❒	❒
Are all cables securely seated?		
■ hard drive power cable	❒	❒
■ hard drive data cable	❒	❒

Do the following:

IF	THEN
you observe any damage	contact your Nortel Networks technical support representative.

IF	THEN
components have become loose	secure them. Refer to the procedures in Part 5 of this binder.
you are satisfied that the 201i server has arrived at your site undamaged	continue with one of the following sections: ■ “Installing Meridian 1 hardware and cables” on page 47 ■ “Installing Option 11C cables” on page 65 ■ “Installing Option 11C Mini cables” on page 71

Section A: Installing Meridian 1 hardware and cables

In this section

Overview

Introduction

This section describes what you must do if you are installing the 201i server in a Meridian 1 switch.

Note: If you are installing the 201i server in an Option 11C, go to page 65. For Option 11C Mini, go to page 71.

Meridian 1 I/O panel connections

On the Meridian 1, the 201i server requires two connections from the IPE slots to the I/O panel on the rear of the switch, as follows:

- One connection is for the multi I/O cable.

  This connection corresponds to the left slot (when viewing the front of the Meridian 1 switch).
- The other connection is for the external SCSI device.

  This connection corresponds to the right slot (when viewing the front of the Meridian 1 switch).

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

Secondary backplane connector

The secondary backplane (DS30x) connector on the 201i server connects the server to the second slot on the IPE shelf, thereby providing access to the voice channels provided by that slot.

CAUTION

Risk of equipment damage

The 201i server ships ready for installation into an Option 11C switch. Before you install the 201i server in a larger Meridian 1 switch (for example, Option 51C), you must move the secondary backplane (DS30x) connector to the correct position.

ATTENTION

A yellow warning label over the top lock latch on the 201i server prevents you from securing the 201i server in a slot. This label serves as a reminder to move the secondary backplane connector to the Meridian 1 position, if required, before installing the 201i server into the slot.

Backplane (tip and ring) cable

The backplane (tip and ring) cable supplied with the 201i server (NTRH3501) provides 100Base-T Ethernet CLAN operation. This cable offers more network throughput than the cable that is already installed on the Meridian 1.

When installed, this cable completes the connection between the left slot, the I/O panel on the rear of the switch, and the multi I/O cable on the 201i server.

SCSI cables

Before you can connect a CD-ROM or tape drive to the 201i server, you must install the SCSI cables. Two cables are required to route the SCSI connection away from the 201i server faceplate so that an external SCSI device can remain permanently connected.

Repositioning the secondary backplane connector

Introduction

The secondary backplane (DS30x) connector on the 201i server connects the server to the second slot on the IPE shelf, thereby providing access to the voice channels provided by that slot.

CAUTION

Risk of equipment damage

The 201i server ships ready for installation into an Option 11C or Option 11C Mini switch. Before you install the 201i server in a larger Meridian 1 switch (for example, Option 51C), you must move the secondary backplane (DS30x) connector to the correct position.

Why you must move the connector

There is an approximate difference of 2 mm between slots on a Meridian 1 tiered system and an Option 11C or Option 11C Mini system. As a result, the secondary backplane (DS30x) connector on the 201i server must be in the correct position before a successful connection with the switch backplane can be established.

ATTENTION

A yellow warning label over the top lock latch on the 201i server prevents you from securing the 201i server in a slot. This label serves as a reminder to move the secondary backplane connector to the Meridian 1 position, if required, before installing the 201i server into the slot.

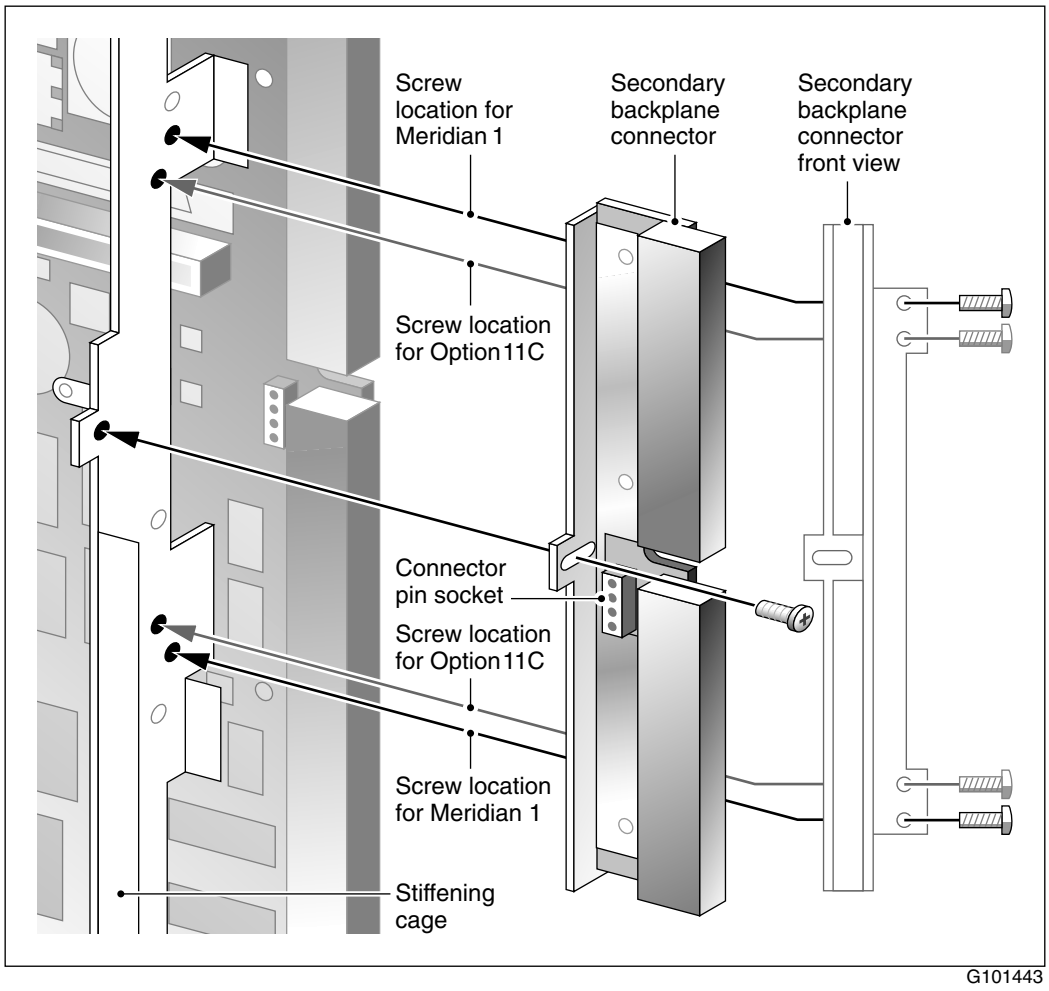
Secondary backplane connector description

The secondary backplane connector is attached to the backplane edge of the 201i server. It consists of the following items:

- connector
- screws
- connector pin (with four pins)

Two pairs of screw holes are provided for connecting the secondary backplane connector to the 201i server's stiffening cage. The outside pair provides the Meridian 1 spacing. The inside pair provides the Option 11C or Option 11C Mini spacing.

See the following diagram:



Required equipment

To move the secondary backplane connector, you need a Phillips No. 1 screwdriver. A pair of needle-nosed pliers can also be helpful for removing the connector pin.

To prepare the 201i server for installation in a Meridian 1 switch

1 Remove the secondary backplane connector pin.

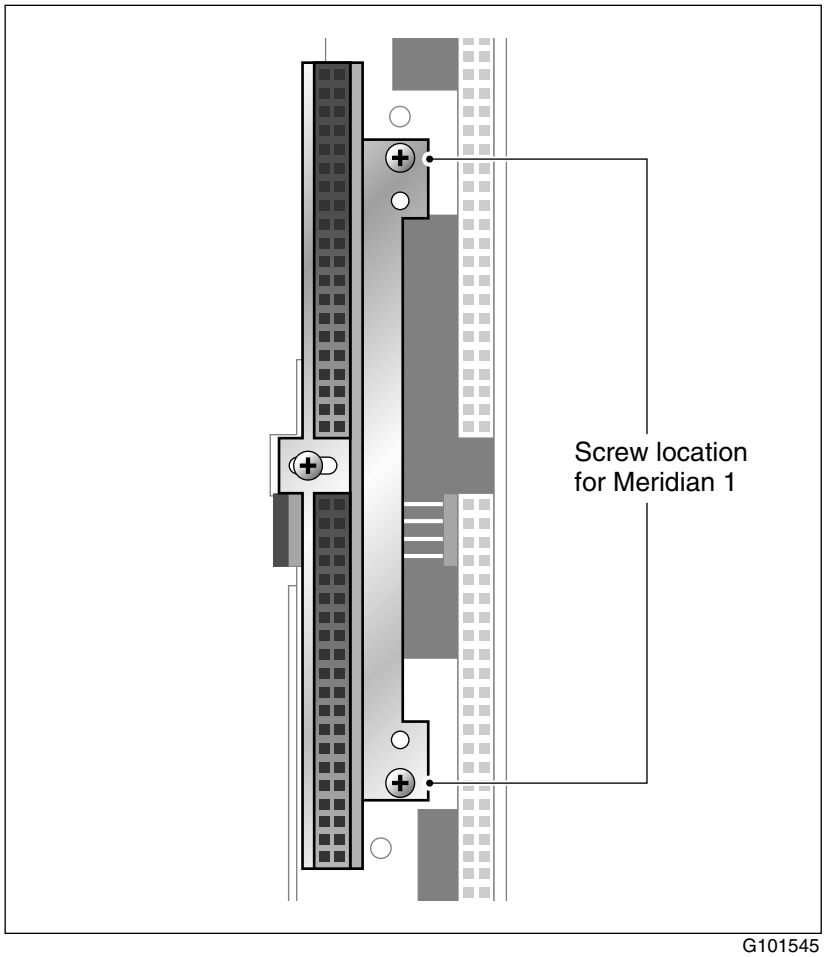
The connector pin has four pins. If necessary, use needle-nosed pliers to remove it.

2 Remove the three screws that hold the secondary backplane connector in place on the stiffening cage.

3 Align the outside pair of screw holes on the bracket with the matching pair on the stiffening cage.

4 Replace and alternately tighten the screws until the connector is evenly and securely fastened.

See the following diagram:



G101545

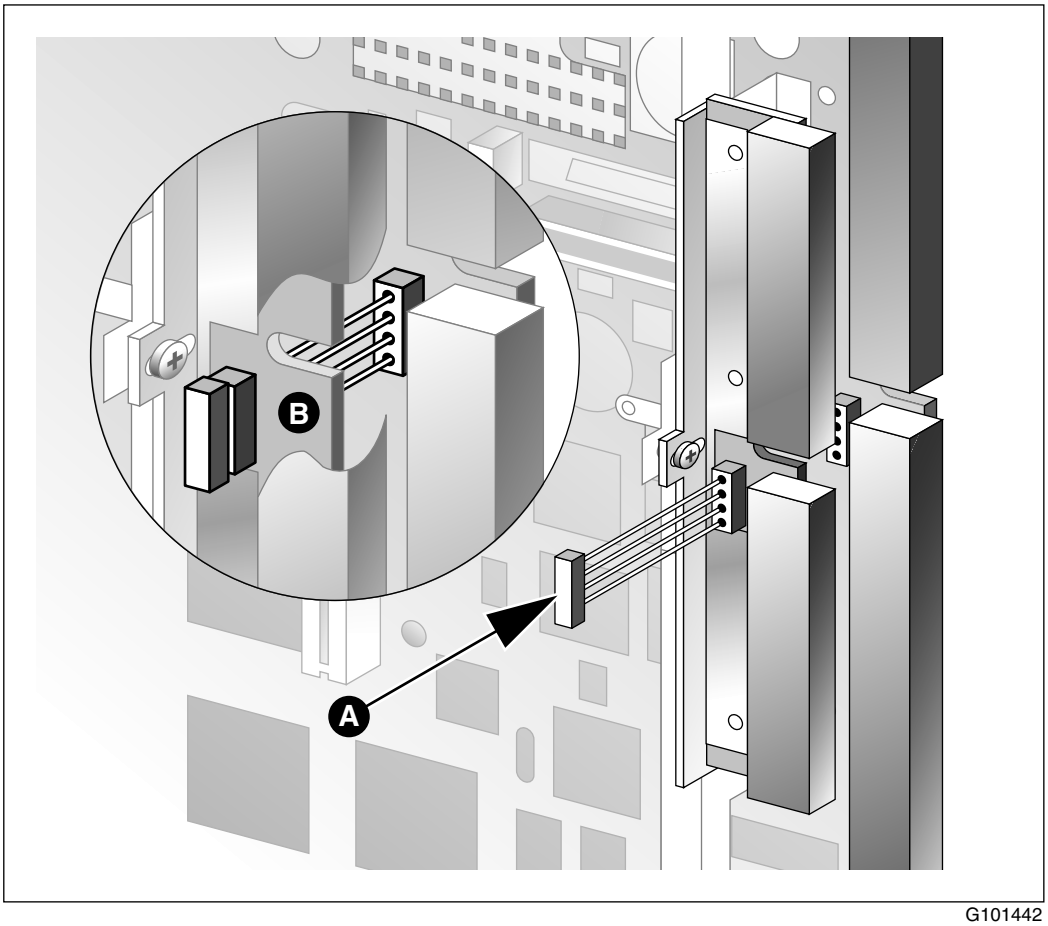
5 Replace the connector pin so the pins protrude through both connectors.

Ensure that the connectors are correctly aligned as shown in the diagram below.

CAUTION

Risk of equipment damage

If the connectors are not correctly aligned when the connector pin is pressed into the socket, the pins might bend.



G101442

6 Gently press the connector pin into the socket until it is fully seated.

7 Remove the yellow backplane warning label from the top lock latch on the 201i server.

Removing the backplane (tip and ring) cables

Introduction

The backplane (tip and ring) cables associated with the slots in which the 201i server is installed must be removed so that you can install the following:

- NTRH3501 backplane (tip and ring) cable

  The NTRH3501 cable offers more network throughput than the cable that is already installed on the Meridian 1. This cable is connected to the backplane connectors and I/O panel slot associated with the left slot.

- NTRH1408 intermediate SCSI cable

  The NTRH1408 intermediate SCSI cable routes the SCSI device connection away from the 201i server faceplate so that an external SCSI device can remain permanently connected. This cable is connected to the I/O panel only. The backplane connectors associated with the right slot are left vacant.

To remove the backplane cables

DANGER

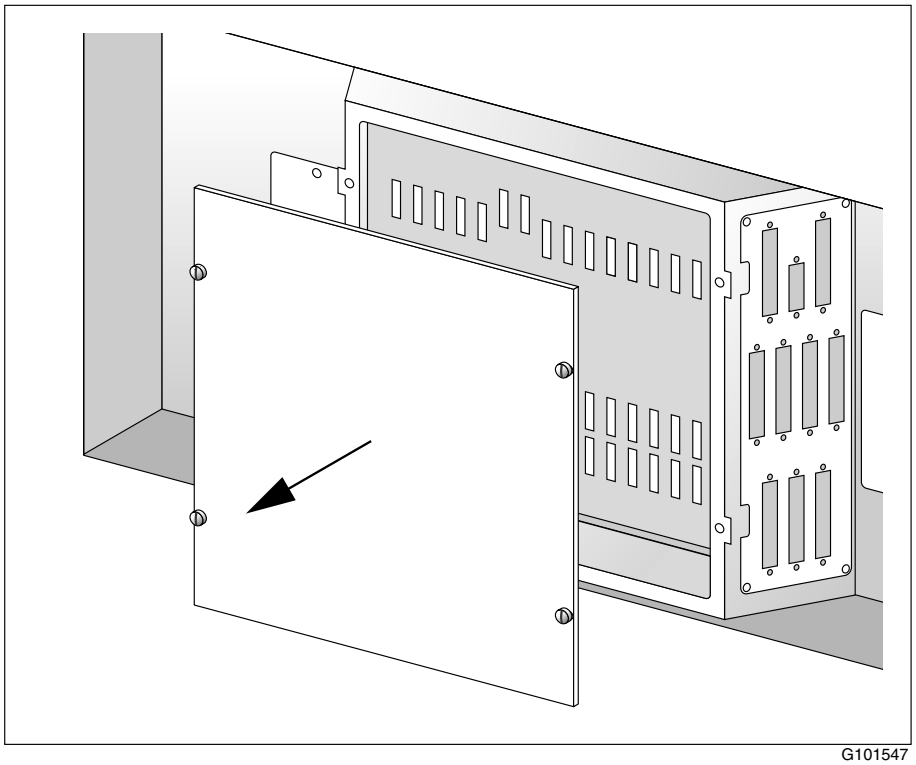
Risk of electrical shock

Before beginning this procedure, ensure that the shelf is powered off.

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

1 Remove the I/O panel cover from the rear of the Meridian 1 switch.

2 Remove the protective plate from the rear of the Meridian 1 switch.



3 Remove the existing backplane cable, including the I/O filter assembly (NT8D81xx) and mounting hardware for the left slot as follows:

a. Remove the external cable attached to the outside of the I/O panel.

b. Disconnect the UP 1, UP 2, and UP 3 cable connectors from the backplane.

Remove the tie wraps where applicable to free the cable.

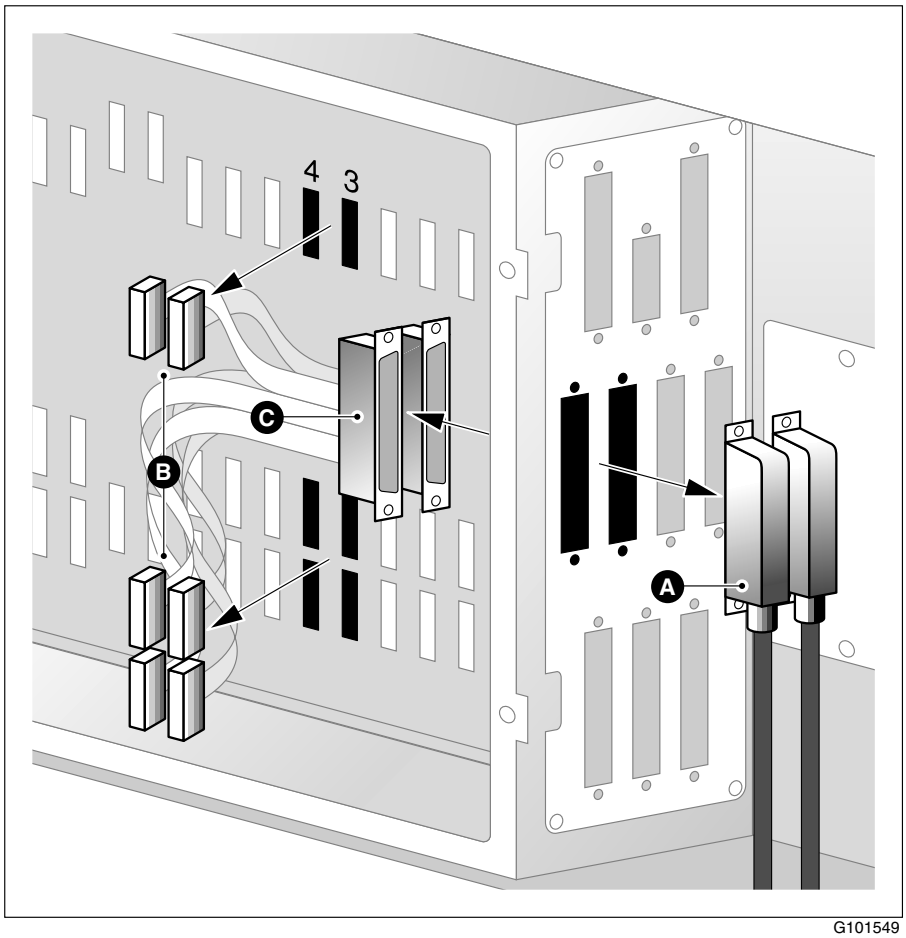
c. Remove the connector, I/O filter assembly, and all mounting hardware from the inside of the I/O panel so the slot is completely vacated.

Retain the mounting hardware (that is, screws, tie wrap base, standoffs, and so on). You will reuse this hardware to fasten the NTRH3501 cable.

4 Repeat step 3 to remove the existing backplane cable for the right slot.

Store the cable, I/O filter assembly, and mounting hardware for this cable with your Meridian 1 spares. You will not use them with the 201i server.

The following diagram shows an example using slots 3 and 4:



What's next?

Install the NTRH3501 backplane cable. See page 57.

Installing the NTRH3501 backplane cable

Introduction

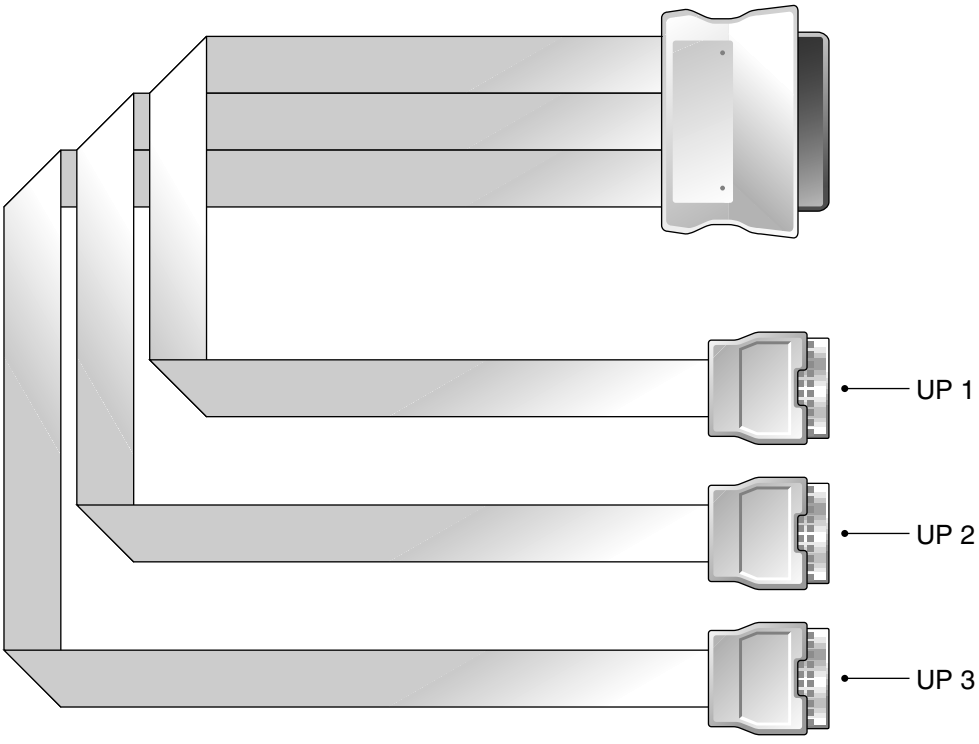
The backplane (tip and ring) cable supplied with the 201i server (NTRH3501) is required for 100Base-T Ethernet CLAN operation. This cable offers more network throughput than the cable you just removed from the Meridian 1.

When installed, this cable completes the connection between the left slot, the I/O panel on the rear of the switch, and the multi I/O cable on the 201i server.

Backplane (tip and ring) cable

The following diagram shows the NTRH3501 backplane (tip and ring) cable:

Backplane (tip and ring) cable NTRH3501



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To install the NTRH3501 backplane cable

1 Install and connect the NTRH3501 cable to the multi I/O cable as follows:

a. Attach the backplane connector of the NTRH3501 cable to the inside of the I/O panel slot associated with the 201i server's left slot.

Insert the original screw into the tie wrap base and fasten the screw into the lower position of the I/O panel slot.

b. Attach the three inner cables to the backplane connectors associated with the left slot as follows:

- UP 1 cable: to the top position
- UP 2 cable: to the middle position
- UP 3 cable: to the lower position

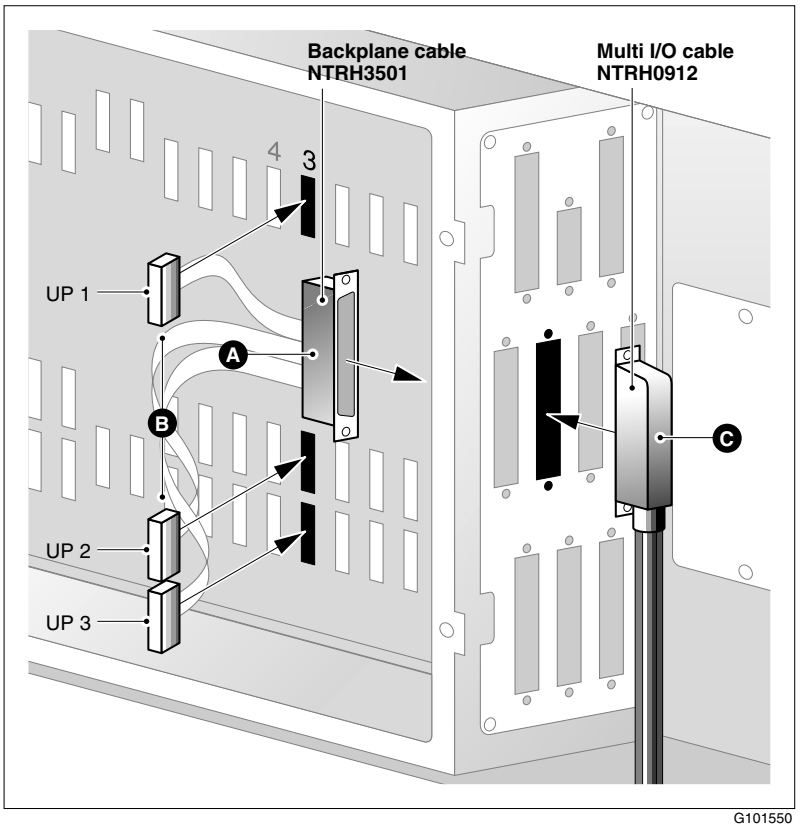
ATTENTION

The connectors are keyed and can only be inserted in one position.

Use tie wraps to position the cables as they were originally.

c. Connect the 50-pin amphenol connector on the multi I/O cable (NTRH0912) to the NTRH3501 backplane cable connector on the I/O panel.

See the following diagram:



What's next?

Install the SCSI cables. See page 60.

Installing the SCSI cables for Meridian 1

Introduction

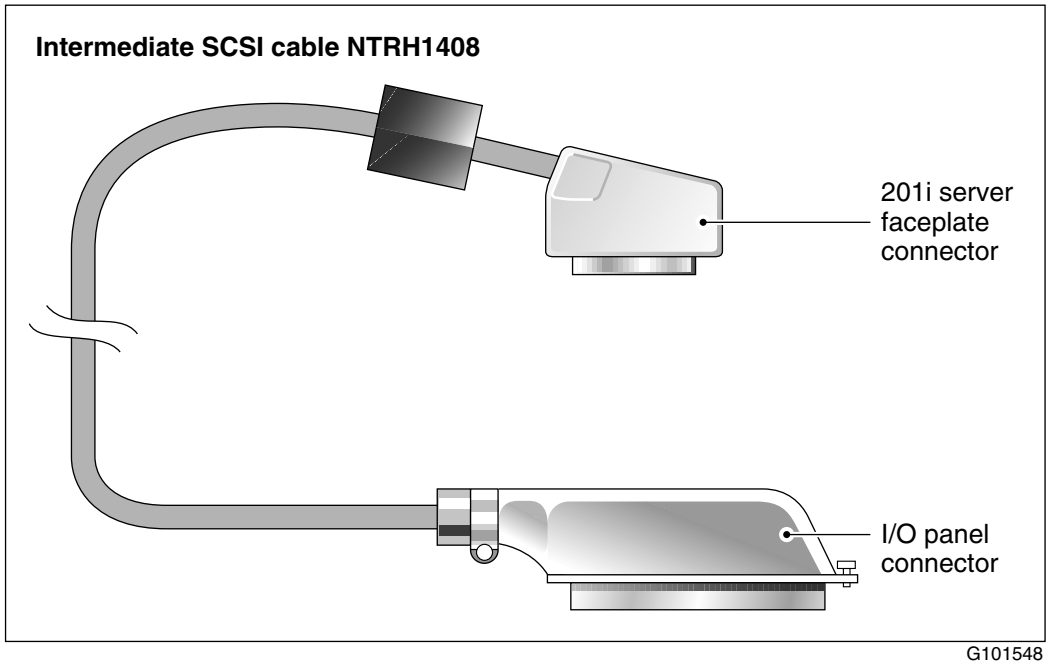
Before you can connect a CD-ROM or tape drive to the 201i server, you must install the SCSI cables. The SCSI cables route the SCSI connection away from the 201i server faceplate so that an external SCSI device can remain permanently connected.

Note: If you are installing the 201i server in an Option 11C, go to page 66. For Option 11C Mini, go to page 73.

Cables you need

Two cables are required:

- NTRH1408 (for connecting the 201i server to the Meridian 1 I/O panel)



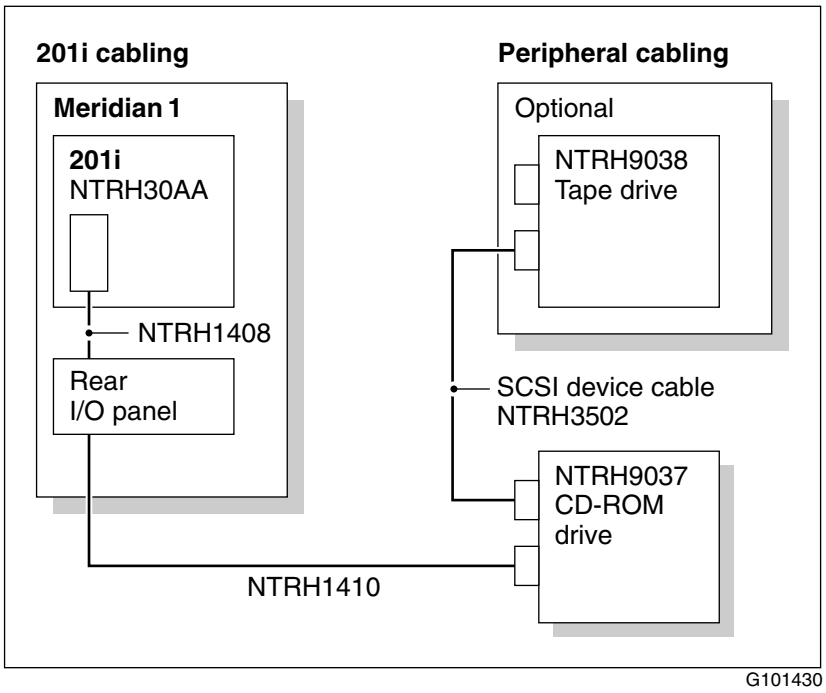
- NTRH1410 (for connecting an external SCSI device to the NTRH1408 connector on the Meridian 1 I/O panel)

  The total length of the cable from the I/O panel is 4.1 m (13.3 ft).

What the completed installation looks like

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

In this diagram, the CD-ROM drive is the first device and the tape drive is the last device:



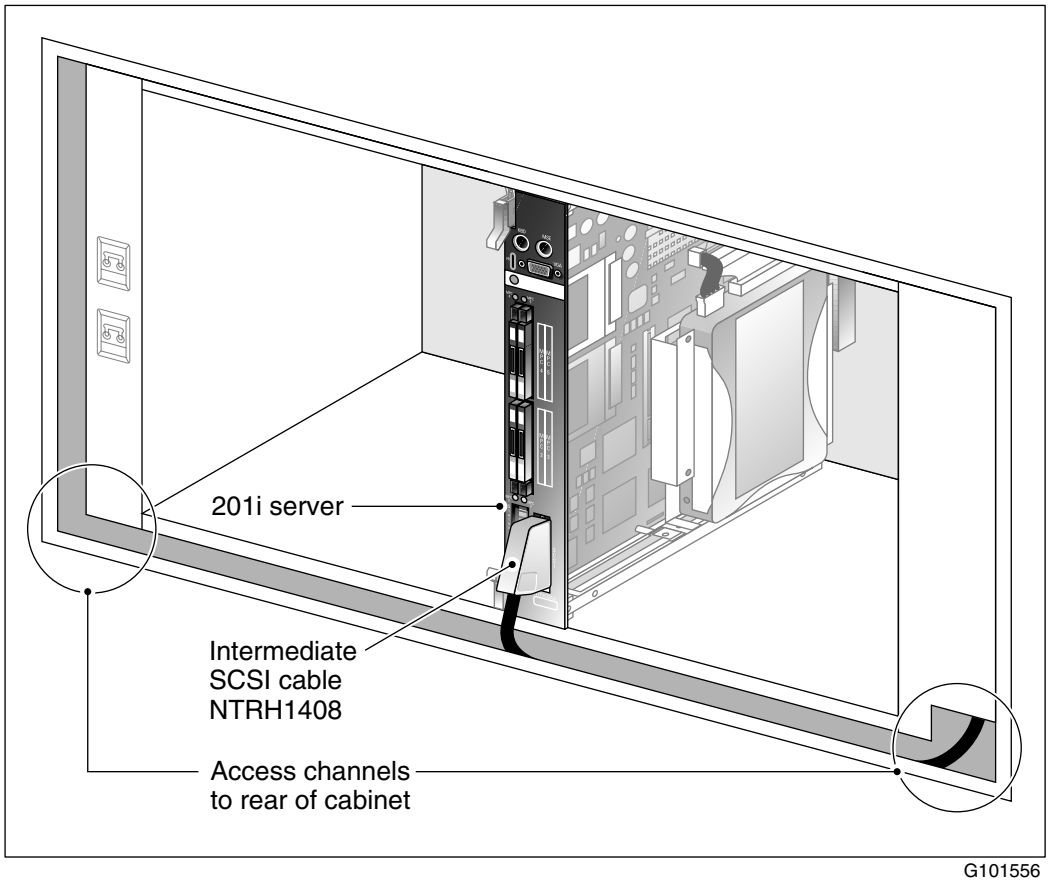
Note: Before you install the SCSI devices in a daisy chain, you must configure the SCSI device IDs and DIP switches. For instructions, refer to Section D: "Setting modem and SCSI device DIP switches and addresses," on page 87.

To install the SCSI cables for Meridian 1

1 Thread the SCSI connector end of the NTRH1408 cable from the front of the Meridian 1 along the bottom of the shelf to either the left or the right access channel.

2 Leave the low-profile right-angle SCSI connector hanging for now. You will connect it later to the 201i server faceplate.

Note: The following diagram shows what the connection looks like after the 201i server is installed in the slot and the cable is connected:



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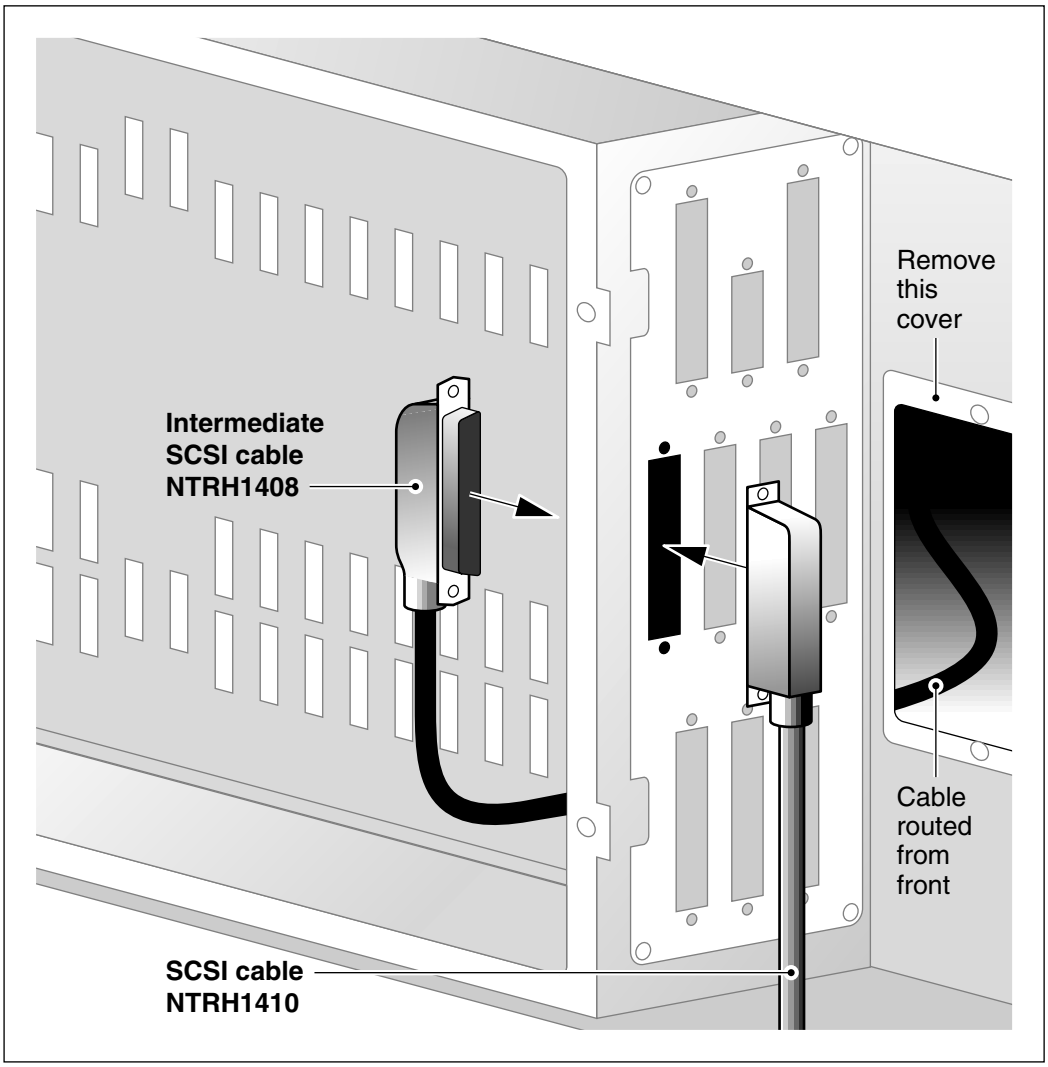
3 Thread the cable through the access channel to the back of the Meridian 1.

4 Attach the NTRH1408 cable to the inside of I/O panel slot associated with the 201i server's right slot.

5 Connect the NTRH1410 cable to the NTRH1408 cable connector on the I/O panel.

See the diagram on the next page.



Note: The backplane connectors for the right slot are not required, and, therefore, are left vacant.

6 Thread the NTRH1410 cable through the shelves below and out through the bottom of the Meridian 1 tower.

7 Replace the protective plate.

8 Replace the I/O panel cover.

9 Power up the shelf.

What's next?

Prepare the modem and SCSI devices for connection to the 201i server. See page 87.

Section B: Installing Option 11C cables

In this section

Installing the intermediate SCSI cable for Option 11C

Introduction

Before you can connect a CD-ROM or tape drive to the 201i server, you must install the intermediate SCSI cable. The intermediate SCSI cable routes the SCSI connection away from the 201i server faceplate so that an external SCSI device can remain permanently connected.

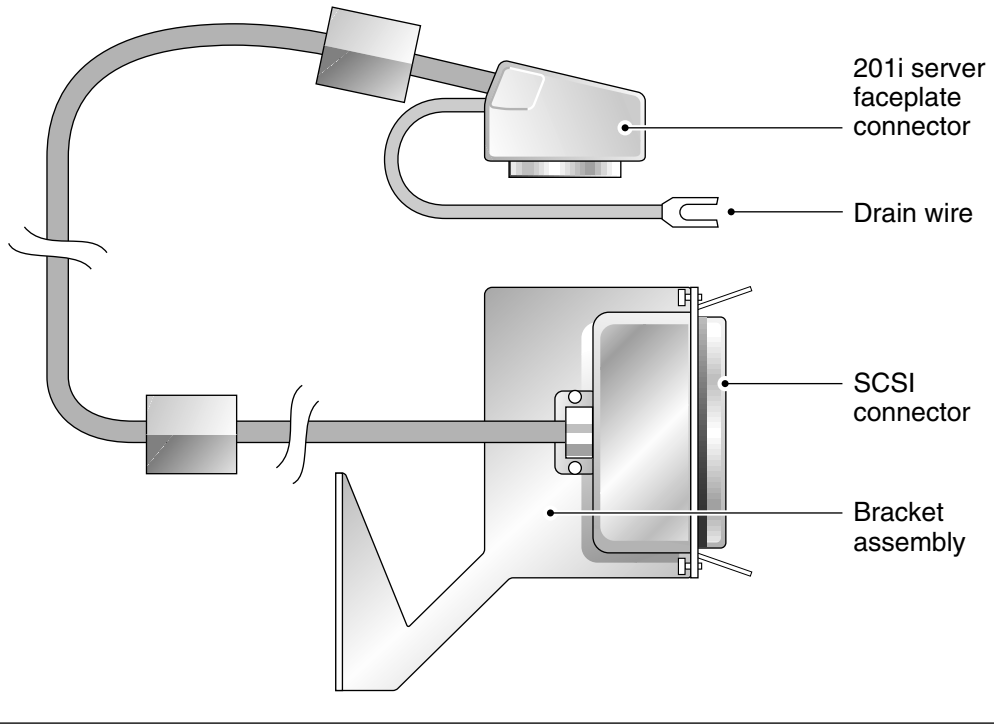
Note: If you are installing the 201i server in a Meridian 1, go to page 60. For Option 11C Mini, go to page 73.

Cable description

The connector on the intermediate SCSI cable that attaches to the 201i server faceplate is a low-profile right-angle connector. This allows the cable to be attached with the Option 11C cabinet covers on.

The SCSI device connector end is equipped with a bracket assembly. This bracket assembly is attached to the Option 11C below the card cage.

Option 11C SCSI cable NTRH1407



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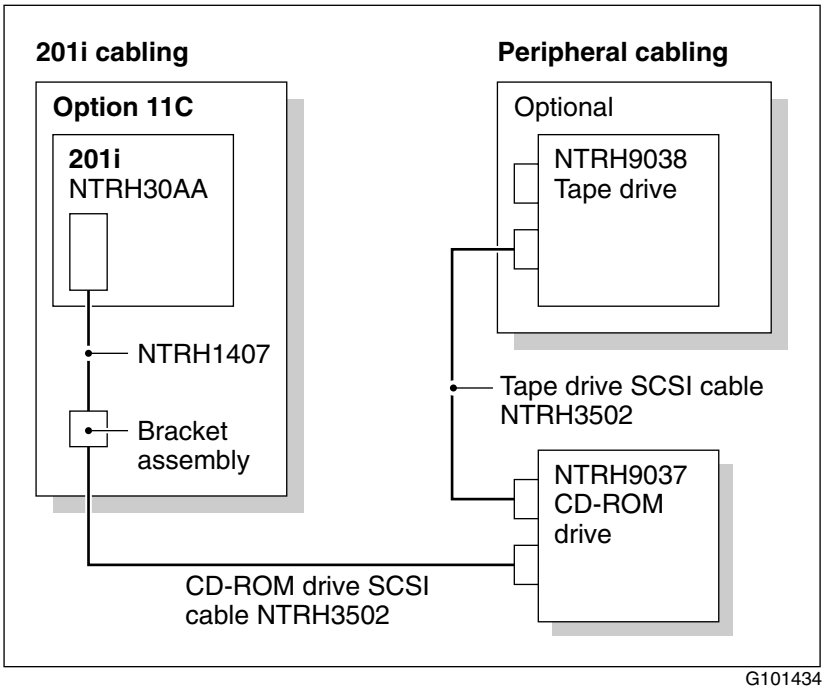
What the completed installation looks like

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

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



Note: Before you install the SCSI devices in a daisy chain, you must configure the SCSI device IDs and DIP switches. For instructions, refer to Section D: "Setting modem and SCSI device DIP switches and addresses," on page 87.

To install the cable for Option 11C

1. Remove the front panel of the Option 11C.
2. Attach the bracket assembly and cable as follows:
   a. Below the card cage, temporarily remove the hardware that secures cable connections to the Option 11C.
   b. Temporarily remove any cabling that might interfere with the installation of the intermediate SCSI cable bracket assembly.

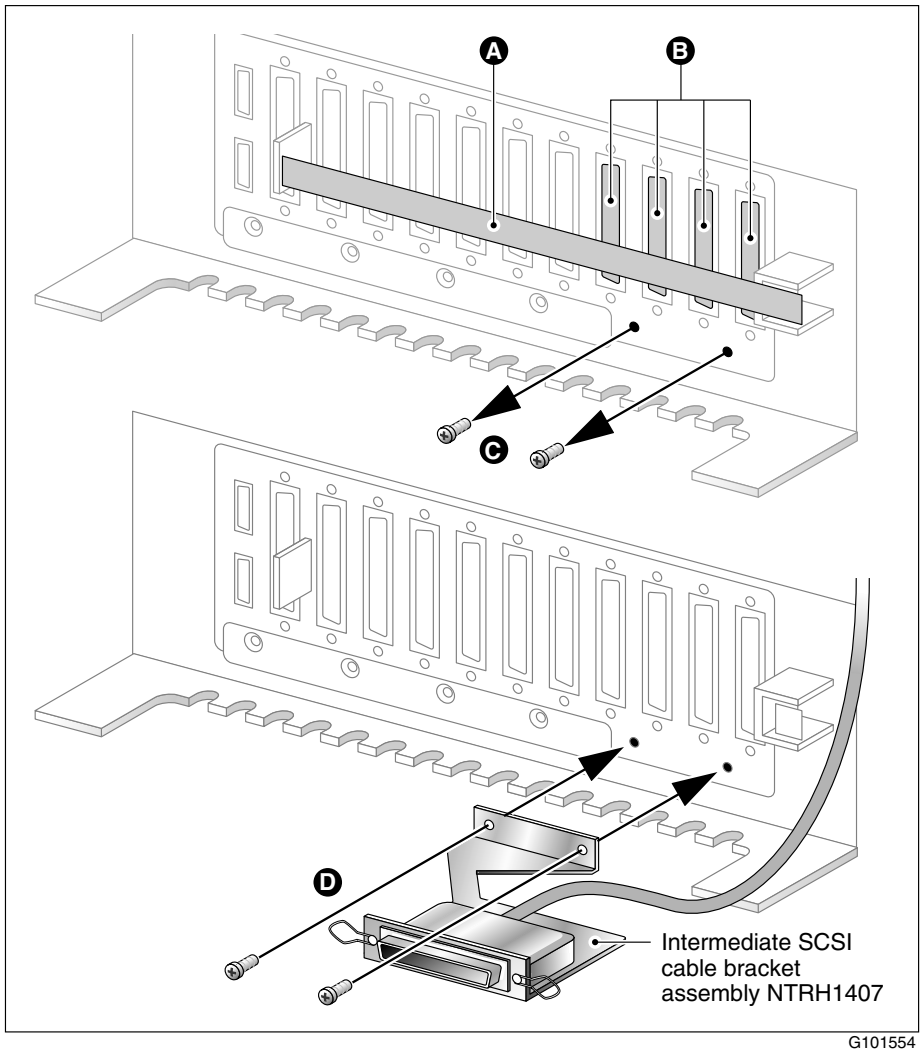
ATTENTION

Before you disconnect the cabling, you should take the telephony equipment services associated with the cabling out of service.

c. Remove the two screws on the right side of the Option 11C I/O panel.

d. Attach the intermediate SCSI cable bracket assembly, using the screws that were removed previously, so that the SCSI connector appears on the right side of the Option 11C cabinet.

See the following diagram:



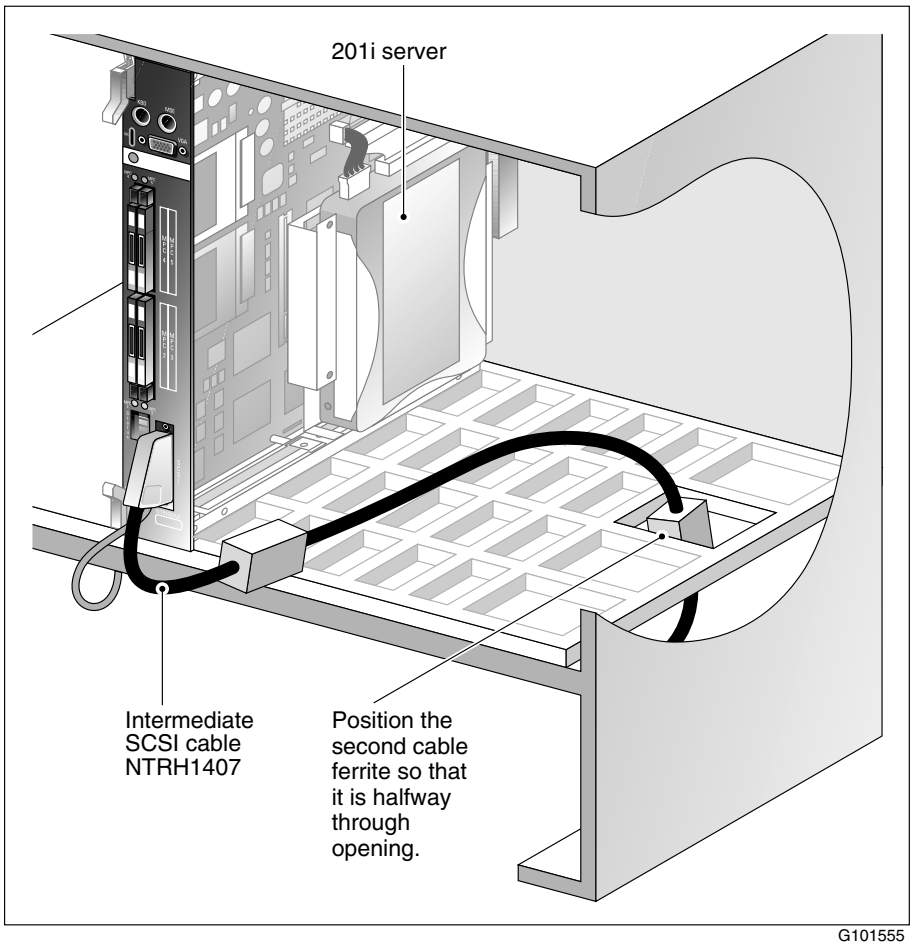
3 Thread the cable up through the card cage.

Note: When routing the SCSI cable through the card cage, ensure the second cable ferrite is placed halfway through the opening.

4 Connect the grounding braid on the intermediate SCSI cable to the card cage, and tighten the screw.

5 Leave the low-profile right-angle SCSI connector loose for now. You will connect it later to the 201i server faceplate.

Note: The following diagram shows what the connection looks like after the 201i server is installed in the slot and the cable is connected:



6 Replace all cabling and hardware that you removed in step 2.

7 Restore any services that you took out of service in step 2.

What's next?

Prepare the modem and SCSI devices for connection to the 201i server. See page 87.

Section C: Installing Option 11C Mini cables

In this section

Overview

Introduction

This section describes what you must do if you are installing the 201i server in an Option 11C Mini switch.

SCSI cable

Before you can connect a CD-ROM or tape drive to the 201i server, you must install the NTRH3502 SCSI cable. The NTRH3502 SCSI cable routes the SCSI connection away from the 201i server faceplate so that an external SCSI device can remain permanently connected.

To ensure that the Option 11C Mini meets electromagnetic compatibility (EMC) requirements, you must install two ferrites on the SCSI cable. See “EMC kit” below.

If your Option 11C Mini is equipped with a Fiber Routing Guide (consisting of a spool and mounting bracket), you must remove it before you can install the NTRH3502 SCSI cable, and then reinstall it when you are finished.

For detailed instructions on removing and installing the Fiber Routing Guide, refer to the *Option 11C and Option 11C Mini Expansion Guide* (NTP 553-3021-208).

Multi I/O cable and power cord

The following items are connected to the back of the Option 11C Mini cabinet:

- multi I/O cable (NTRH0912)
- power cord with two ferrites

You must connect the multi I/O cable first before connecting the power cord, because the power cord routes over the multi I/O cable connection.

To ensure that the Option 11C Mini meets EMC requirements, you must install two ferrites on the power cord. See “EMC kit” below.

EMC kit

Ensure that you have the Option 11C Mini EMC Kit (NTRH3503). The kit contains ferrites that must be installed on the NTRH3502 SCSI cable and Option 11C Mini’s power cord to maintain Option 11C Mini EMC requirements.

If you do not have the kit, contact your Nortel Networks distributor.

Installing the NTRH3502 SCSI cable for Option 11C Mini

Introduction

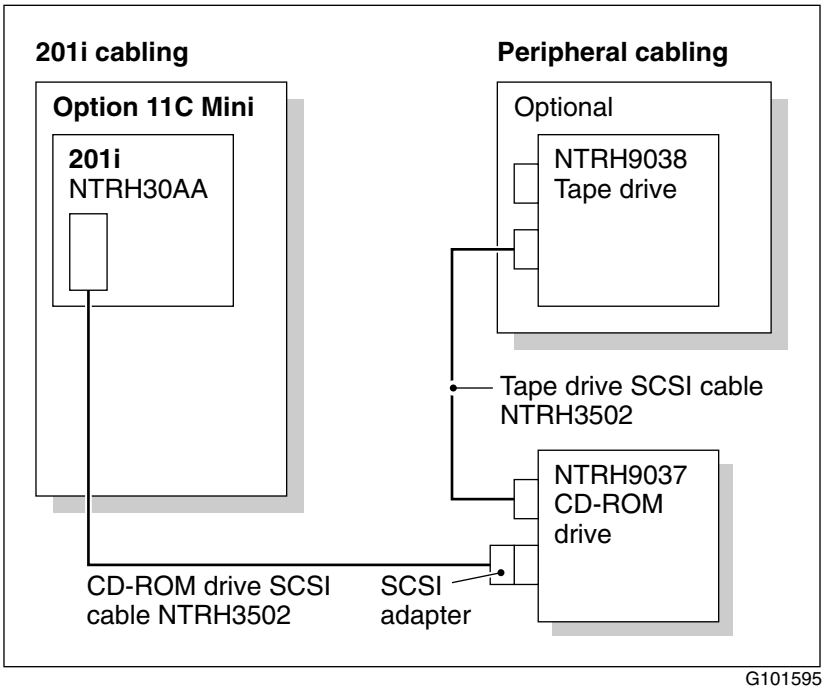
Before you can connect a CD-ROM or tape drive to the 201i server, you must install the NTRH3502 SCSI cable. The NTRH3502 SCSI cable routes the SCSI connection away from the 201i server faceplate so that an external SCSI device can remain permanently connected.

Note: If you are installing the 201i server in a Meridian 1, go to page 60. For Option 11C, go to page 66.

What the completed installation looks like

The following diagram shows how the intermediate SCSI cable and CD-ROM and tape drives are connected to the Option 11C Mini.

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



Note: Before you install the SCSI devices in a daisy chain, you must configure the SCSI device IDs and DIP switches. For instructions, refer to Section D: "Setting modem and SCSI device DIP switches and addresses," on page 87.

Option 11C Mini and Fiber Routing Guide

If your Option 11C Mini is equipped with a Fiber Routing Guide (consisting of a spool and mounting bracket), you must remove it before you can install the NTRH3502 SCSI cable. Reinstall the Fiber Routing Guide when you are finished.

For detailed instructions on removing and installing the Fiber Routing Guide, refer to the *Option 11C and Option 11C Mini Expansion Guide* (NTP 553-3021-208).

Before you begin

Ensure that you have the Option 11C Mini EMC Kit (NTRH3503). The kit contains ferrites that must be installed on the NTRH3502 SCSI cable to maintain Option 11C Mini EMC requirements.

If you do not have the kit, contact your Nortel Networks distributor.

To install the NTRH3502 SCSI cable

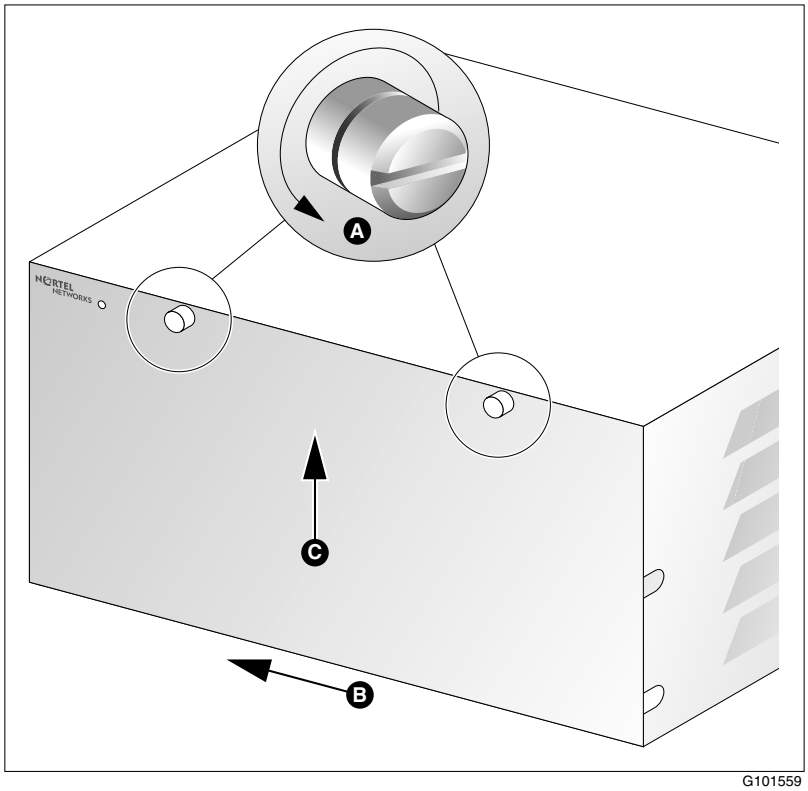
1 Remove the front cover from the Option 11C Mini as follows:

a. Loosen the spring-loaded clips.

b. Slide the cover to the left.

c. Pull the cover up to remove it from the cabinet.

See the following diagram:



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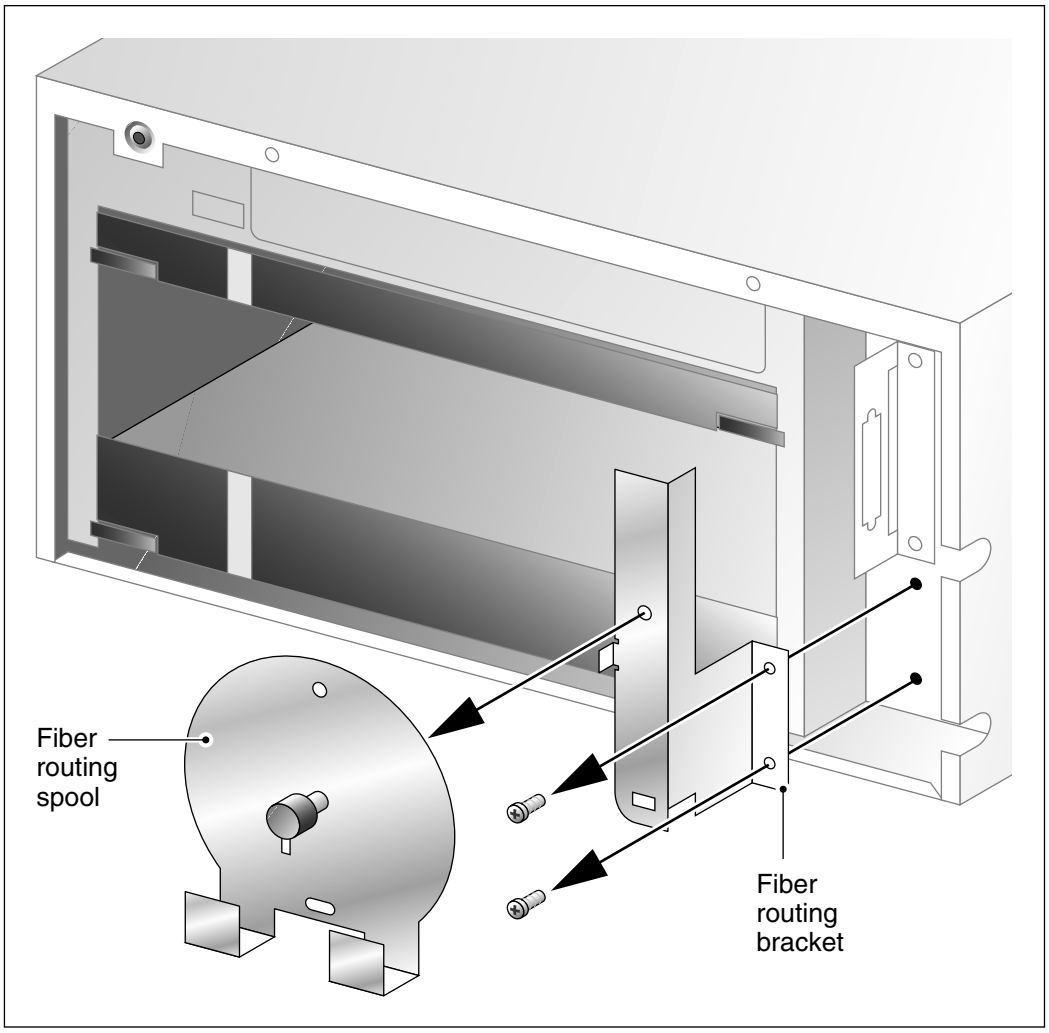
2 If the Fiber Routing Guide is installed, temporarily remove it.

Note: For detailed instructions, refer to the *Option 11C and Option 11C Mini Expansion Guide* (NTP 553-3021-208).

See the following diagram:



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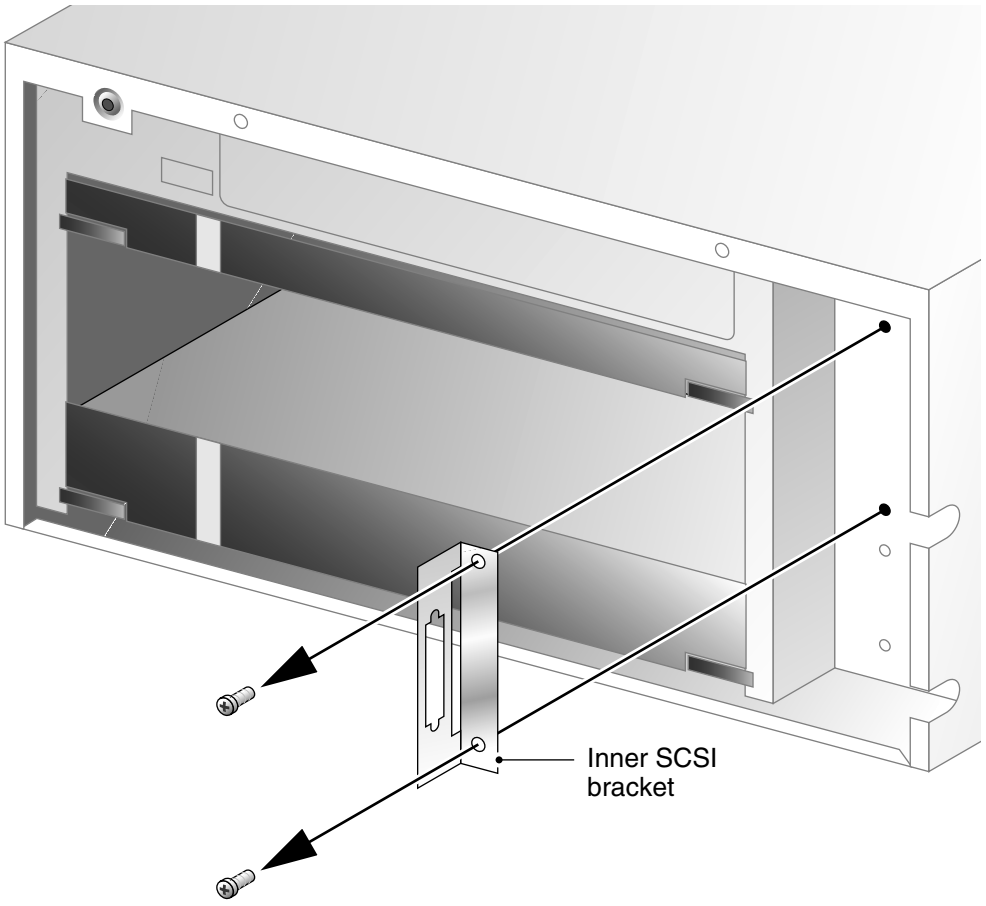
3 Remove the inner SCSI bracket from the inside of the cabinet.

See the following diagram:



Note: After you remove the bracket, refasten the screws in their original locations inside the cabinet.

G101587

4 Refasten the inner SCSI bracket screws in their original locations inside the cabinet.

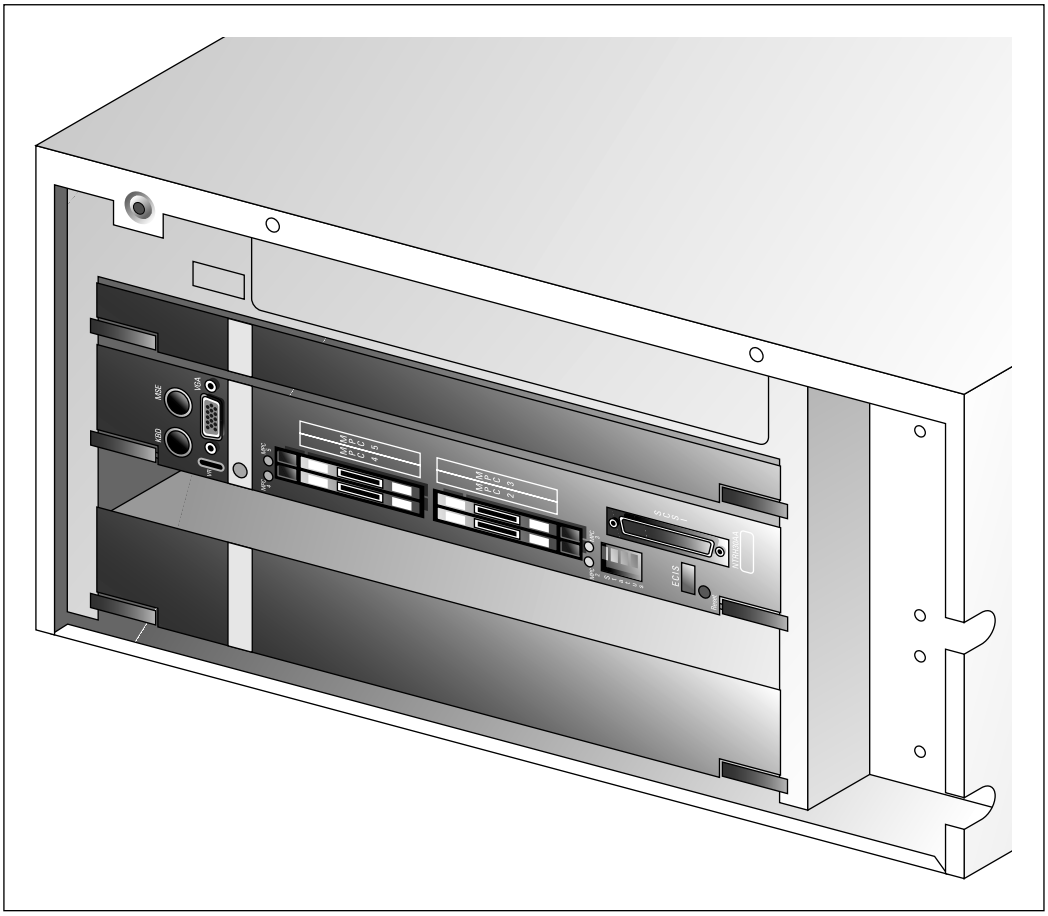
You will use the top screw later to fasten the NTRH3502 SCSI cable's drain wire.

5 Slide the 201i server into a pair of consecutive slots.

Notes:

- The 201i server cannot be installed in slots 0 or 4 because these slots are dedicated to other cards. For more information about cards and slots, refer to the Option 11C Mini documentation.

- When correctly inserted, the top of the 201i server is on the left. See the following diagram:



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ATTENTION

Do not push the 201i server into place against the backplane yet.

All peripheral devices (monitor, keyboard, mouse, and SCSI device) must be connected before the 201i server starts. If the Option 11C Mini is connected to a power source, the 201i server receives power and starts as soon as the 201i server is locked into position in the cabinet.

6 Connect the low-profile right-angle SCSI connector on the NTRH3502 cable to the SCSI connector on the 201i server faceplate.

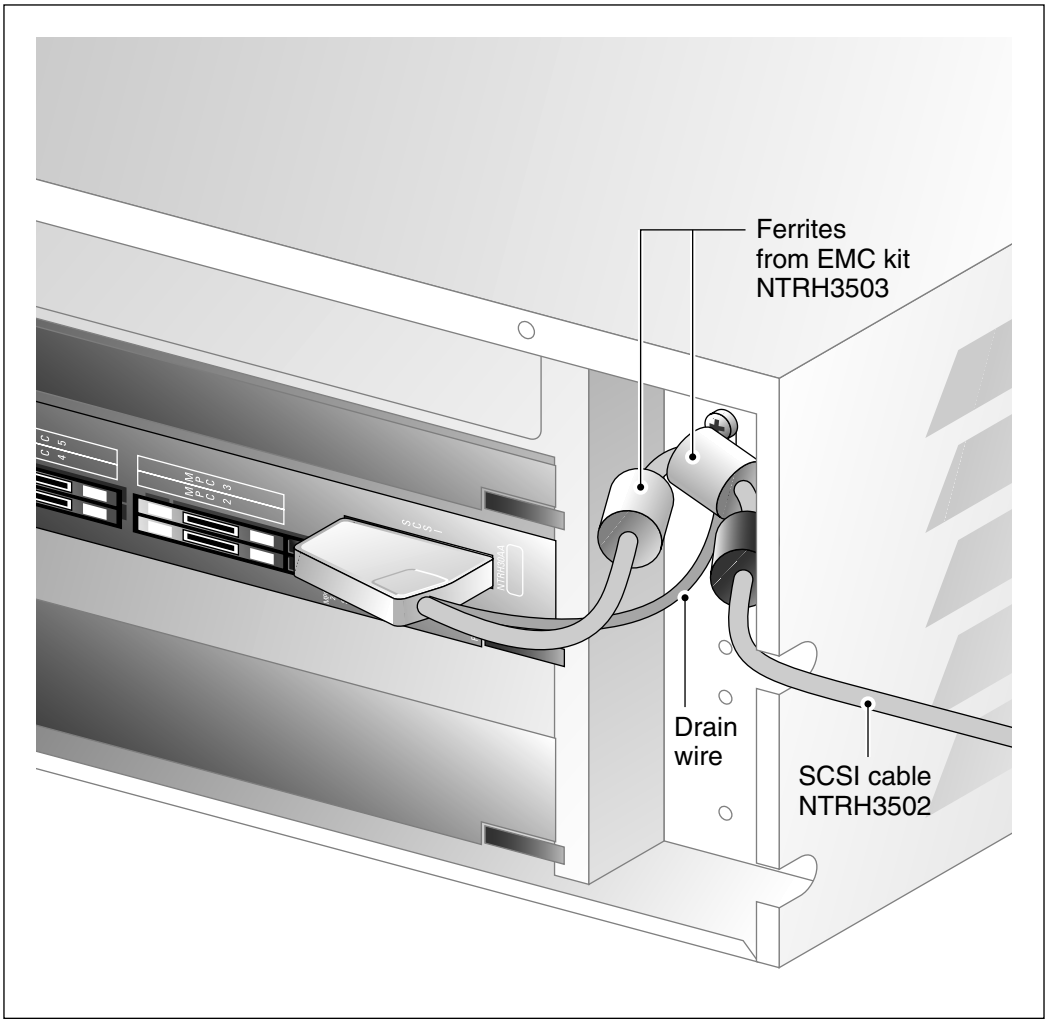
7 Fasten the SCSI cable's drain wire to the top screw that previously held the inner SCSI bracket in place.

8 Attach two ferrites from the NTRH3503 EMC kit to the SCSI cable.

9 Do the following:

IF the Fiber Routing Guide	THEN
is required	do the following: **a** Position the ferrites so that the SCSI cable and ferrites can be pushed as far up and back as possible inside the Option 11C Mini cabinet. There is very little space to work with. Work with the cable and ferrites (including the ferrite that was already installed on the SCSI cable) until you can correctly and securely install the fiber optic spool. **b** Route the SCSI cable out through the top cable trough on the Option 11C Mini cabinet. See “SCSI cable installation to accommodate the Fiber Routing Guide” on page 79.
not required	do the following: **a** Position the ferrites as close to the SCSI connector as possible. **b** Secure the ferrites with a tie wrap. **c** Route the SCSI cable across the inside of the Option 11C Mini cabinet and out through the bottom cable trough. See “SCSI cable installation when the Fiber Routing Guide is not required” on page 80.

SCSI cable installation to accommodate the Fiber Routing Guide



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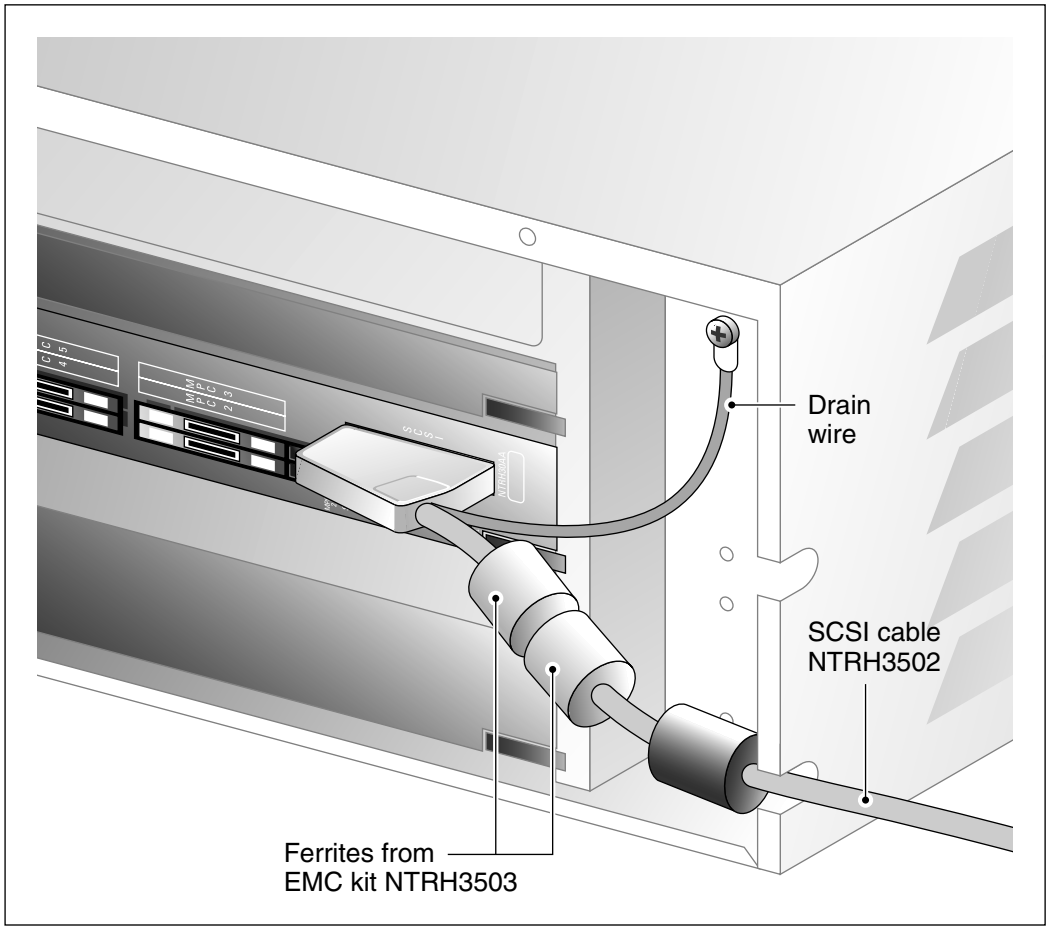
SCSI cable installation when the Fiber Routing Guide is not required

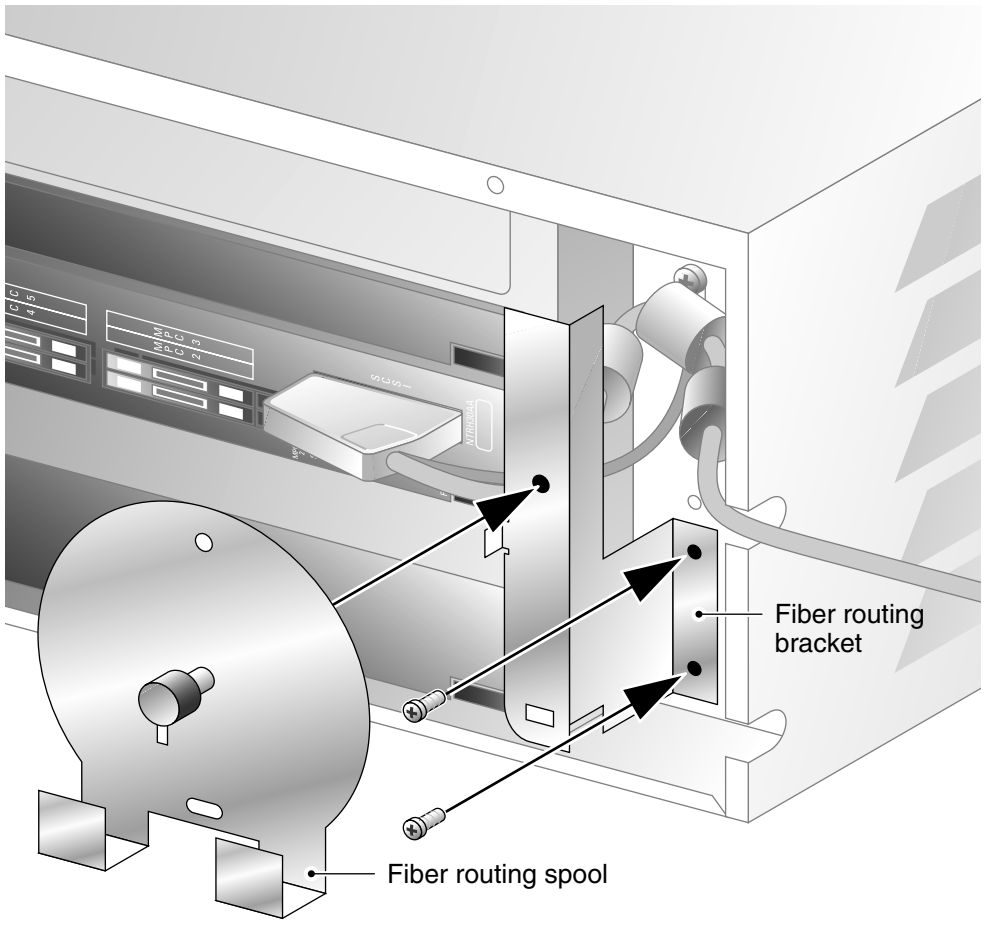


G101589

10 If required, reinstall the Fiber Routing Guide.

Note: For detailed instructions, refer to the *Option 11C and Option 11C Mini Expansion Guide* (NTP 553-3021-208).

See the following diagram:



Note: Ensure the fiber routing spool and bracket are correctly aligned before fastening them in place.

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11 Continue with “Installing cables on the back of the Option 11C Mini cabinet” on page 82.

Installing cables on the back of the Option 11C Mini cabinet

Introduction

The following items must be installed on the back of the Option 11C Mini cabinet:

- multi I/O cable (NTRH0912)
- power cord with two ferrites

Before you begin

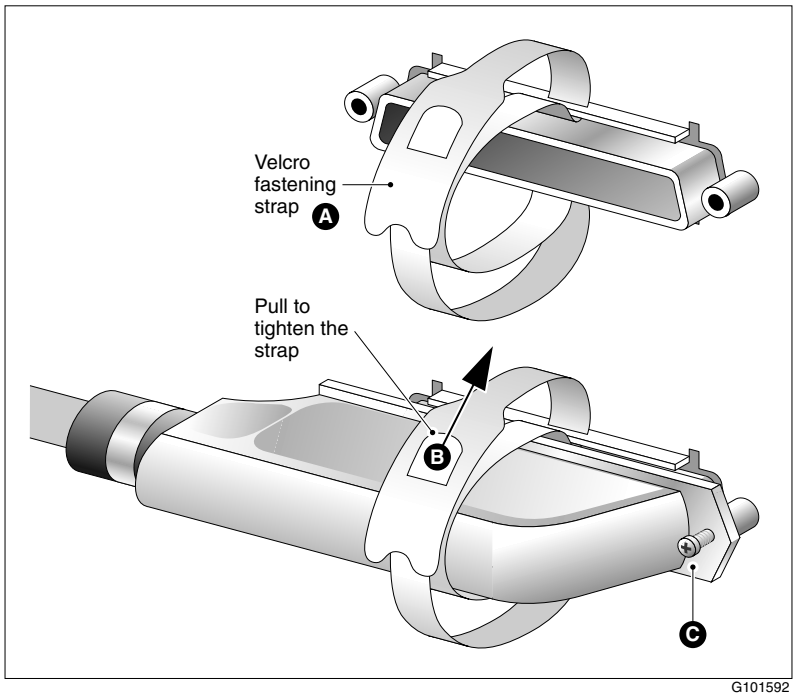
Ensure that you have the Option 11C Mini EMC Kit (NTRH3503). The kit contains ferrites that must be installed on the Option 11C Mini's power cord to maintain Option 11C Mini EMC requirements.

If you do not have the kit, contact your Nortel Networks distributor.

To connect the cables

1. Locate, on the rear of the Option 11C Mini cabinet, the connector associated with the first slot occupied by the 201i server.
2. Connect the NTRH0912 multi I/O cable as follows:
   a. Loosen the connector's Velcro fastening strap.
   b. Connect the amphenol connector on the NTRH0912 multi I/O cable to the connector on the back of the Option 11C Mini cabinet.
   c. Secure the connection by tightening the connector's retaining screw and Velcro fastening strap.

The following diagram shows how to secure the multi I/O cable connection:

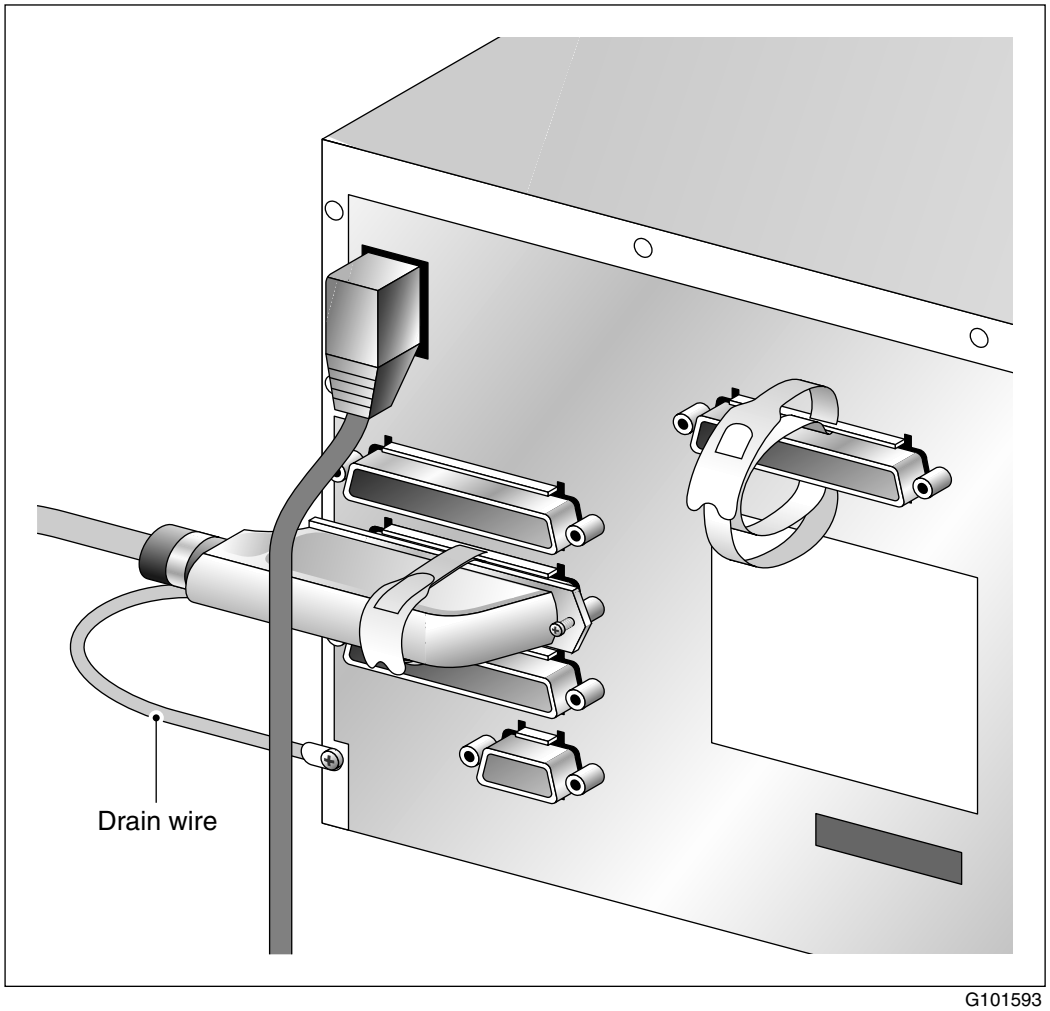


3 Attach the multi I/O cable's drain wire to a screw on the cabinet.

See the diagram in step 4.

4 Connect the power cord to the Option 11C Mini cabinet.

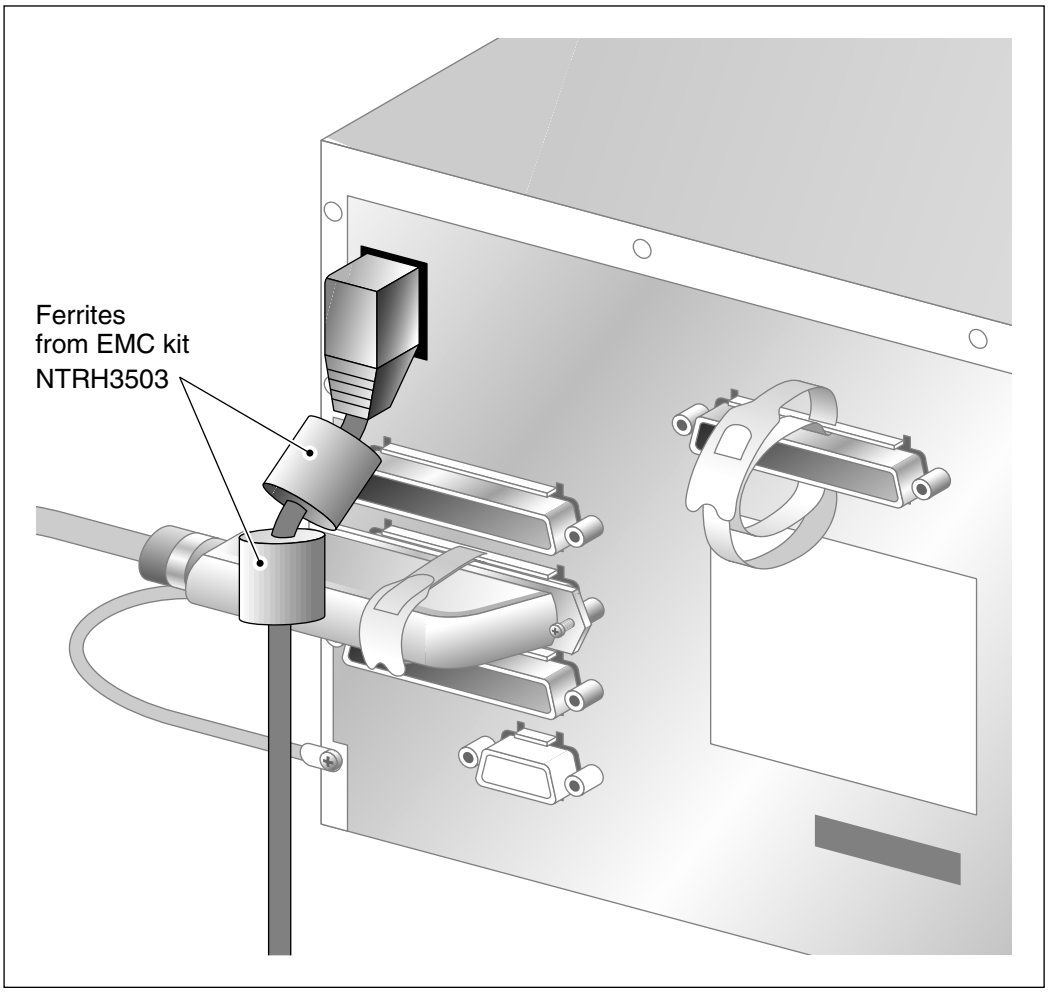
See the following diagram:



5 Attach two ferrites from the NTRH3503 EMC kit to the power cord.

Position the ferrites as far up the power cord as possible, and then secure them with a tie wrap.

See the following diagram:



G101594

What's next?

Prepare the modem and SCSI devices for connection to the 201i server. See page 87.

Section D: Setting modem and SCSI device DIP switches and addresses

In this section

Overview

Introduction

You can connect a modem and one or more SCSI devices to the 201i server.

The modem is connected to the 201i server's multi I/O cable.

The SCSI devices are connected to the 201i server's intermediate SCSI cable. 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 is required to upgrade, reinstall, and configure the 201i server. Since the CD-ROM drive is an external device, it requires its own AC power source.

An external SCSI tape drive can be used to back up and restore data. Since the tape drive is an external device, it also requires its own AC power source.

ATTENTION

The CD-ROM and tape drives are not hot-pluggable. You must power off the 201i server before you connect or disconnect either drive.

Note: The hard drive on the administration PC can be optionally used to perform and store backups instead of a tape drive.

The following drives are discussed in this section:

- 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.

DIP switches, SCSI ID, and SCSI device termination settings

For correct operation with the 201i server, you must set the following:

- DIP switches on the modem and CD-ROM drive
- SCSI ID and device termination on the CD-ROM and tape drives

Setting the modem DIP switches

Introduction

This section describes how to set the modem's DIP switches.

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: Displays verbal (word) results ■ ON: Displays numeric results
3	ON	ON	Result code display ■ OFF: Suppresses result codes ■ ON: Enables result codes
4	OFF	OFF	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-on 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)

Setting the CD-ROM drive's SCSI ID and DIP switches

Introduction

This section describes how to set the CD-ROM drive's SCSI ID and DIP switches.

ATTENTION

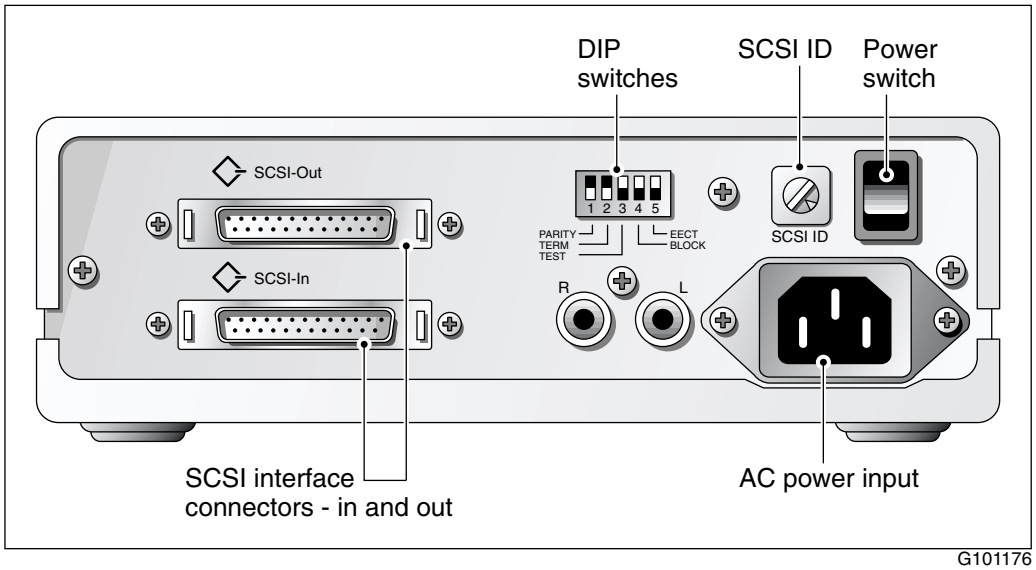
To recognize the new settings, power down the CD-ROM drive before changing the SCSI ID and DIP switches.

Note: The CD-ROM drive discussed in this section is the Plextor UltraPlex external SCSI CD-ROM drive (NTRH9037).

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.



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To set the CD-ROM drive's DIP switches

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

DIP switch	Description	Setting
1	Parity	ON
2	Termination	**Note:** For more information about daisy chaining SCSI devices, see "Setting SCSI device termination" on page 94. 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.
3	Test	OFF (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.

What's next?

If you are also installing a tape drive, set the tape drive's SCSI ID (see page 93); otherwise, set the CD-ROM drive's device termination (see page 94).

Setting the tape drive's SCSI ID

Introduction

This section describes how to set the tape drive's SCSI ID.

ATTENTION

To recognize the new settings, power down the tape drive before changing the SCSI ID.

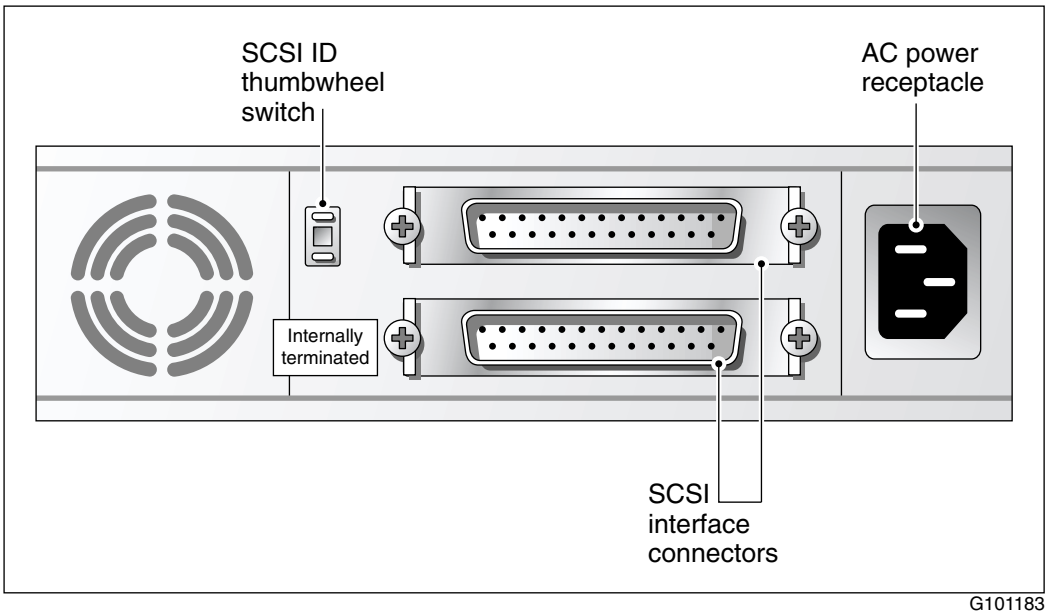
Note: The tape drive discussed in this section is the Tandberg SLR5 tape drive (NTRH9038). This is currently the only supported tape drive.

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.

Note: The appearance and size of the tape drive cabinet is subject to change. The diagram is an example of the key components.

To change the SCSI ID, use the blade of a screwdriver to press either the plus (+) or minus (–) button on the SCSI ID thumbwheel switch. Set the SCSI ID to 5.



Setting SCSI device termination

Introduction

If you will be connecting SCSI devices in a daisy chain, the last device in the daisy chain must be terminated. This section describes how to terminate the SCSI devices.

ATTENTION

To recognize the new settings, ensure the CD-ROM and tape drives are powered down before changing the device termination.

Supported daisy chain connection scenarios

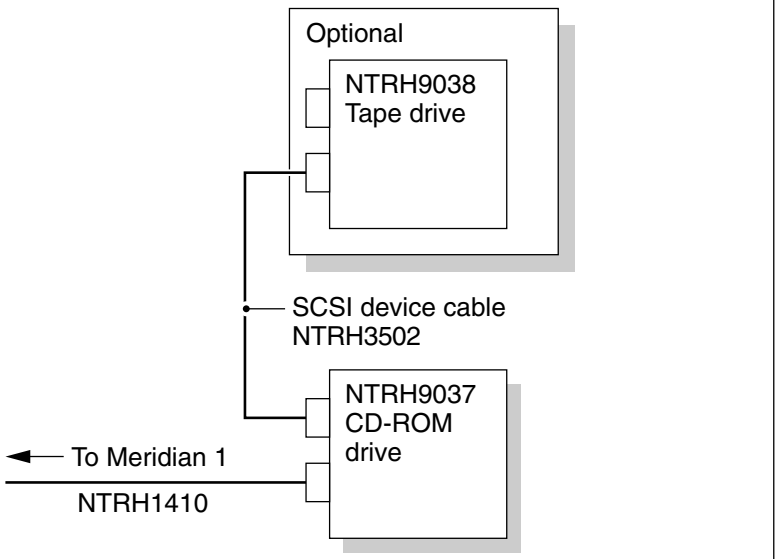
The first device in a SCSI device daisy chain can be either the tape drive or the CD-ROM drive. However, since the Tandberg SLR5 tape drive is already internally terminated at the factory, Nortel Networks recommends that you connect the tape drive as the last device.

Meridian 1

The following diagram shows the supported daisy chain and SCSI cable connections for Meridian 1. The CD-ROM drive is the first device in the daisy chain. The tape drive is the last device.

For more information about the cabling requirements, see “Installing the SCSI cables for Meridian 1” on page 60.

SCSI device cabling for Meridian 1



G101431

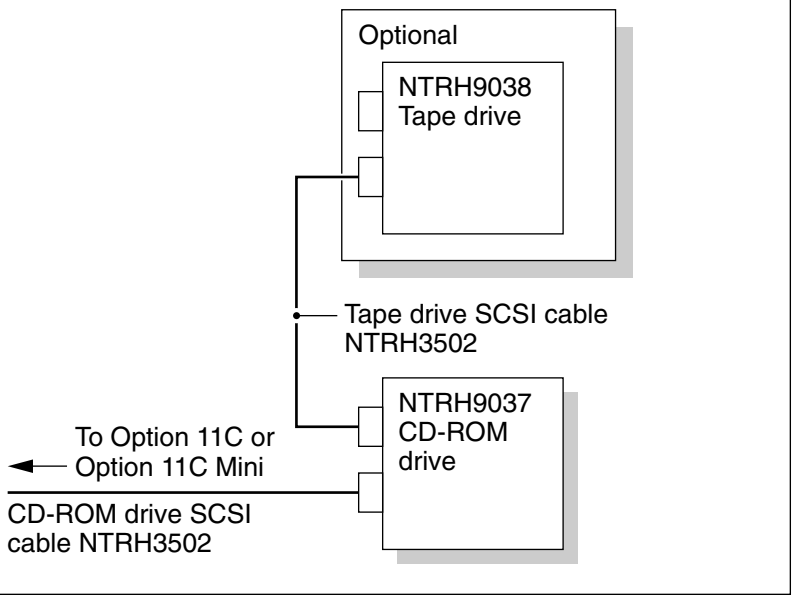
Option 11C or Option 11C Mini

The following diagram shows the supported daisy chain and SCSI cable connections for Option 11C or Option 11C Mini. The CD-ROM drive is the first device in the daisy chain. The tape drive is the last device.

For more information about the cabling requirements, see one of the following:

- "Installing the intermediate SCSI cable for Option 11C" on page 66
- "Installing the NTRH3502 SCSI cable for Option 11C Mini" on page 73

SCSI device cabling for Option 11C or Option 11C Mini



G101436

To set device termination

Terminate the SCSI devices as described in the following table:

IF you are connecting	THEN
a CD-ROM drive only	set DIP switch 2 on the back of the CD-ROM drive to ON. This terminates the drive.
a tape drive only	do nothing. External termination is not required because the drive is already internally terminated. This is indicated by a label on the back or front of the tape drive.

IF you are connecting	THEN
both a CD-ROM drive and a 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. External termination is not required.

Section E: Installing and connecting the 201i server

In this section

Positioning the 201i server on the switch shelf

Introduction

The 201i server occupies physical and electrical slots. The 201i server must be installed in two peripheral equipment slots as follows:

- Option 11C: in slots 1 through 9 in any cabinet
- Option 11C Mini: in a pair of consecutive slots in any cabinet

  The 201i server cannot be installed in slots 0 or 4 because these slots are dedicated to other cards. For more information about cards and slots, refer to the Option 11C Mini documentation.
- Meridian 1 tiered systems: in slots 0 through 14

  Ensure that both slots have electrical backplane connectivity.

Before you begin

Before you position the 201i server in the switch slots, ensure that you have completed the following tasks:

IF you are installing the 201i server in	THEN
a Meridian 1	do the following: ■ Reposition the secondary backplane (DS30x) connector on the 201i server and then remove the backplane warning label. See “Repositioning the secondary backplane connector” on page 50. ■ Replace the backplane cable on the rear side of the switch with the backplane cable (NTRH3501) supplied with the 201i server. See “Installing the NTRH3501 backplane cable” on page 57. ■ Install the intermediate SCSI cable. See “Installing the SCSI cables for Meridian 1” on page 60.
an Option 11C	install the intermediate SCSI cable. See “Installing the intermediate SCSI cable for Option 11C” on page 66.

IF you are installing the 201i server in	THEN
an Option 11C Mini	install the SCSI cable. See “Installing the NTRH3502 SCSI cable for Option 11C Mini” on page 73. **Note:** If you have already installed the SCSI cable, then you have also already installed the 201i server in a pair of slots.

To position the 201i server on the switch shelf

1 Ensure that no cables are connected to the slots in which you are installing the 201i server.

2 Open the lock latches at the top and bottom of the 201i server faceplate.

Note: Opening the top lock latch breaks the yellow backplane warning label, if it has not been removed.

IF you are installing the 201i server in	THEN
an Option 11C or Option 11C Mini switch	remove the label and continue with this procedure.
a Meridian 1 switch	you must move the secondary backplane connector. For details, see “Repositioning the secondary backplane connector” on page 50.

3 Slide the 201i server into an unoccupied pair of slots.

The 201i server requires two consecutive unoccupied slots on the shelf. Ensure that the 201i server is positioned correctly between the slots.

ATTENTION

Do not push the 201i server into place against the backplane yet.

All peripheral devices (monitor, keyboard, mouse, and SCSI device) must be connected before the 201i server starts. The 201i server receives power and starts as soon as the 201i server is locked into position on the shelf.

4 Connect the SCSI cable to the SCSI connector on the 201i server’s faceplate.

5 If you are working with the Option 11C, ensure that the grounding braid on the intermediate SCSI cable is connected to the card cage.

What's next?

Connect the peripheral devices. Before you proceed, review "Peripheral device connection overview" on page 101.

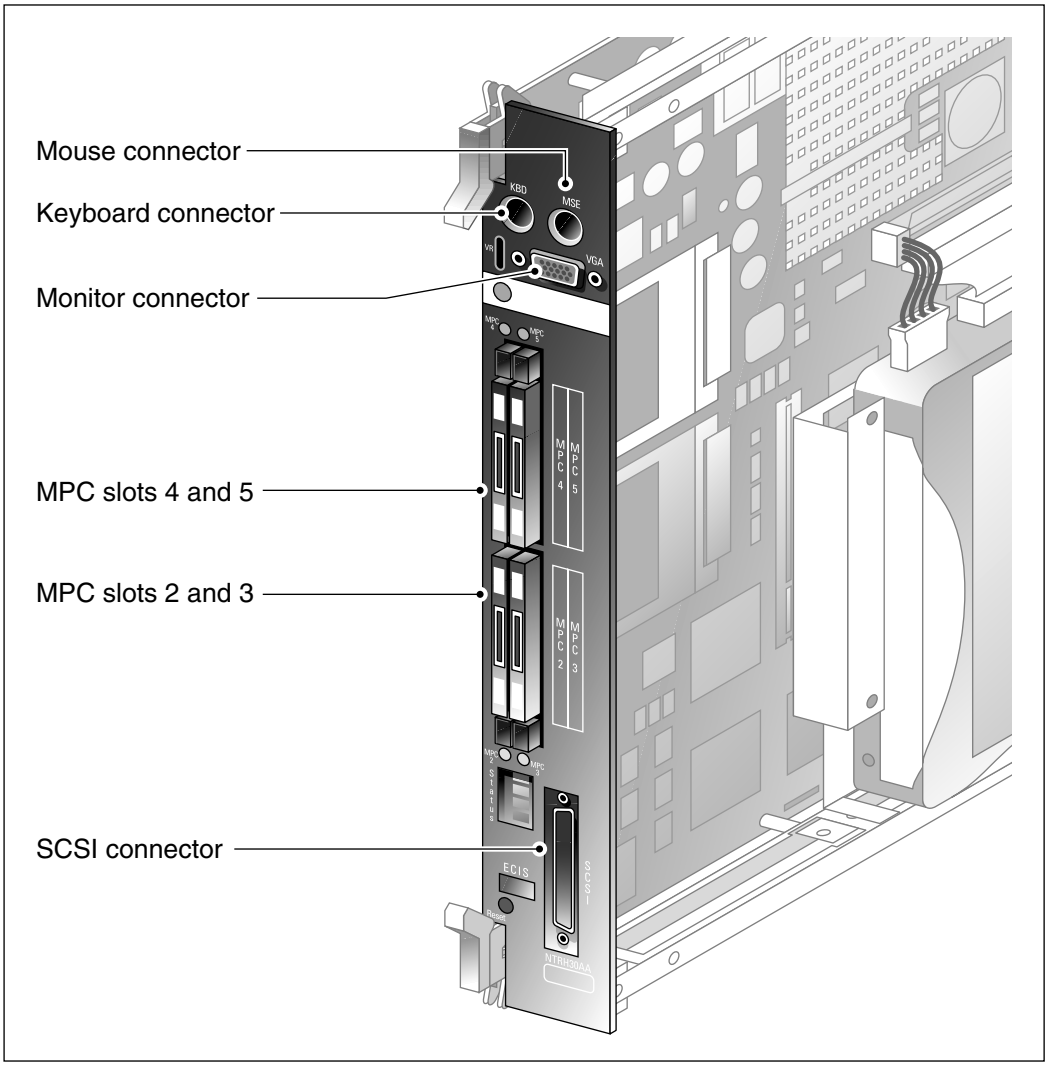
Peripheral device connection overview

Introduction

Continue installing the 201i server by adding all appropriate peripheral devices before securing the 201i server to the backplane.

201i server faceplate and peripheral device connectors

The following diagram identifies the peripheral device connectors and slots on the 201i server faceplate:



G101444

Before you begin

Before you connect the peripheral devices, ensure that you have completed the following tasks:

1. Prepare the SCSI CD-ROM and tape drives. See the following:
   - "Setting the CD-ROM drive's SCSI ID and DIP switches" on page 91
   - "Setting the tape drive's SCSI ID" on page 93
   - "Setting SCSI device termination" on page 94
2. Set the DIP switches on the external fax modem. See page 89.

Installing the MPCs

Introduction

MPCs are preinstalled at the factory. This section describes how to install them if they have been removed from the 201i server.

Correct card insertion

The MPC-8 card is keyed so that it fits only one way into the slot on the 201i server faceplate. If the card is inserted incorrectly, the card does not go all the way into the slot.

CAUTION

Risk of equipment damage

If you force the card into the slot incorrectly, this can result in damage to the MPC-8 card and the 201i server.

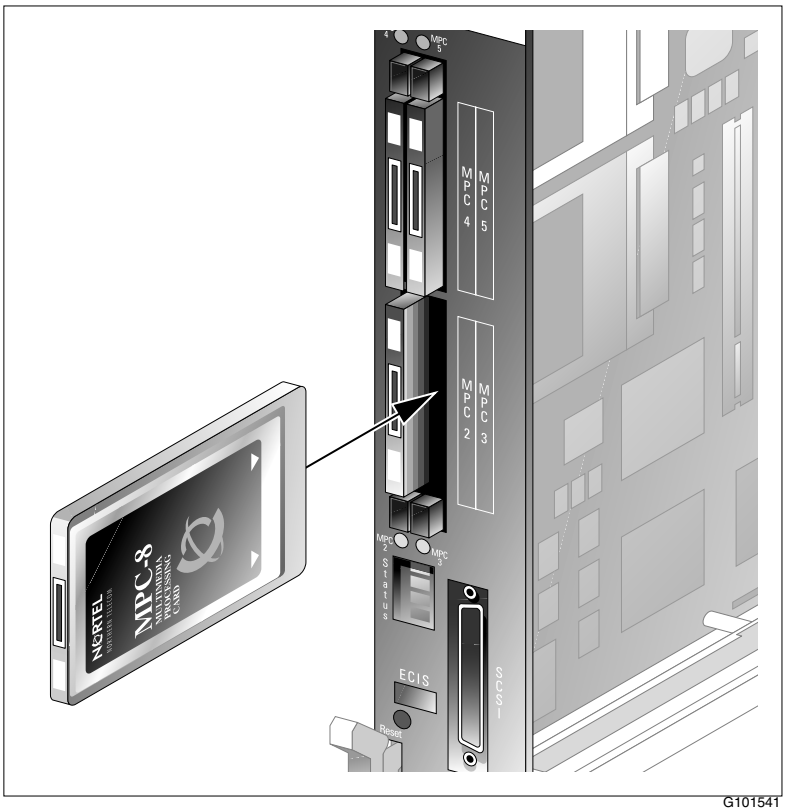
To install the MPCs

1 Do one of the following:

IF the MPC cards	THEN
are already installed	ensure that they are firmly seated in their slots.
are not installed	continue with the rest of this procedure.

2 Ensure that the MPC-8 card label is facing one of the following ways:

- facing up if the 201i server is lying horizontally on a flat surface
- facing to the right if the 201i server is inserted into the IPE shelf (see the diagram on the next page)



3 Insert the card into the slot, and gently push it until it is firmly in place and the ejector button pops back out.

Note: Populate MPC slots in numerical order as listed on the 201i server faceplate.

Installing the monitor, keyboard, and mouse

Introduction

The monitor, keyboard, and mouse must be connected to the 201i server so that you can

- observe the 201i server startup process
- run the Configuration Wizard
- perform initial administration after installation

The 201i server is not intended to operate with permanent monitor, keyboard, and mouse connections. Once you have successfully started and configured the 201i server, remove the monitor, keyboard, and mouse. For day-to-day administration, use an administrative PC connected to the ELAN or CLAN.

To connect the monitor, keyboard, and mouse

1. Connect the monitor to the 201i server's faceplate using a DB-15 cable.
2. Connect the monitor's power cord, and then power up the monitor.
3. Connect the keyboard and mouse to the 201i server's faceplate using standard PS/2 connectors.

Connecting the CD-ROM and tape drives

Introduction

You can connect the CD-ROM, tape drive, or both to the intermediate SCSI cable that you installed earlier.

Before you begin

Before you can connect the CD-ROM or tape drive, ensure that you have completed the following tasks:

1. Install the intermediate SCSI cable:
   - For Meridian 1, see "Installing the SCSI cables for Meridian 1" on page 60.
   - For Option 11C, see "Installing the intermediate SCSI cable for Option 11C" on page 66.
   - For Option 11C Mini, see "Installing the NTRH3502 SCSI cable for Option 11C Mini" on page 73.
2. Set the SCSI ID and device termination settings.
   - See "Setting the CD-ROM drive's SCSI ID and DIP switches" on page 91.
   - See "Setting SCSI device termination" on page 94.

Selecting the procedure for your switch

IF you are working with	THEN see
a large Meridian 1 switch (such as Option 51)	"To connect the CD-ROM and tape drives to the 201i server (Meridian 1)" on page 107.
Option 11C	"To connect the CD-ROM and tape drives to the 201i server (Option 11C)" on page 108.
Option 11C Mini	"To connect the CD-ROM and tape drives to the 201i server (Option 11C Mini)" on page 109.

To connect the CD-ROM and tape drives to the 201i server (Meridian 1)

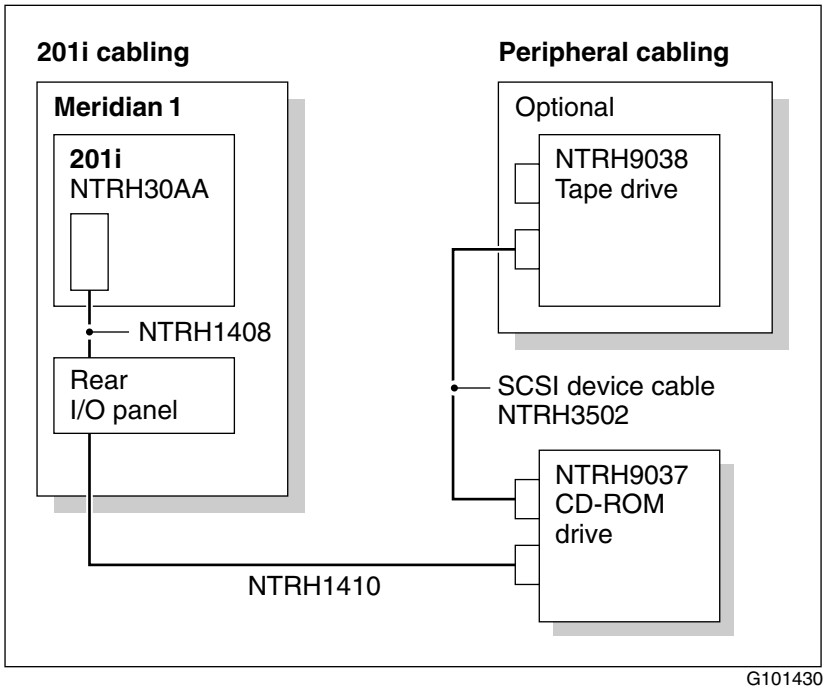
Note: If you are connecting the SCSI devices to the Option 11C, go to page 108. If you are connecting the SCSI devices to the Option 11C Mini, go to page 109.

1 Connect the first SCSI device as follows:

IF the first device is the	THEN
CD-ROM drive	connect the CD-ROM drive to the NTRH1410 cable you connected earlier to the Meridian 1 I/O panel.
tape drive	do the following: **a** Attach the A0769312 SCSI adapter to the tape drive. **b** Connect the SCSI adapter to the NTRH1410 cable you connected earlier to the Meridian 1 I/O panel.

2 Connect an additional device in a daisy chain if required, using either the SCSI cable supplied with the device or an NTRH3502 cable.

The following diagram shows cable connections, where the CD-ROM is the first device:



3 Connect the power cord for each device.

4 Power up the devices.

To connect the CD-ROM and tape drives to the 201i server (Option 11C)

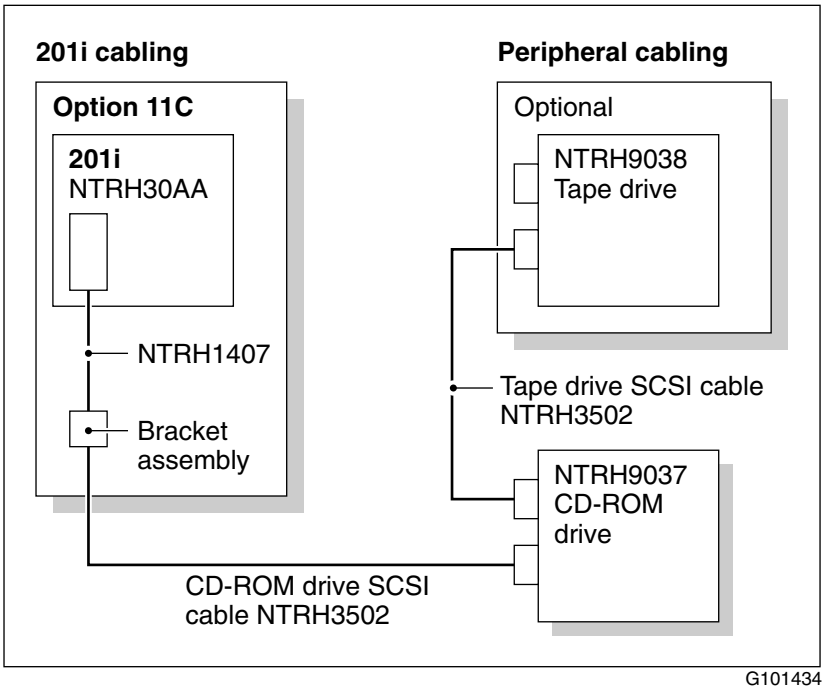
Note: If you are connecting the SCSI devices to the Option 11C Mini, go to page 109.

1 Connect the first SCSI device as follows:

IF the first device is the	THEN
CD-ROM drive	connect the NTRH3502 SCSI cable from the CD-ROM drive to the SCSI connector located on the intermediate SCSI cable bracket assembly (NTRH1407) on the Option 11C.
tape drive	do the following: **a** Attach the A0769312 SCSI adapter to the tape drive. **b** Connect the NTRH3502 SCSI cable from the adapter to the SCSI connector located on the intermediate SCSI cable bracket assembly (NTRH1407) on the Option 11C.

2 Connect an additional device in a daisy chain if required, using either the SCSI cable supplied with the device or an NTRH3502 cable.

The following diagram shows cable connections, where the CD-ROM drive is the first device:



3 Connect the power cord for each device.

4 Power up the devices.

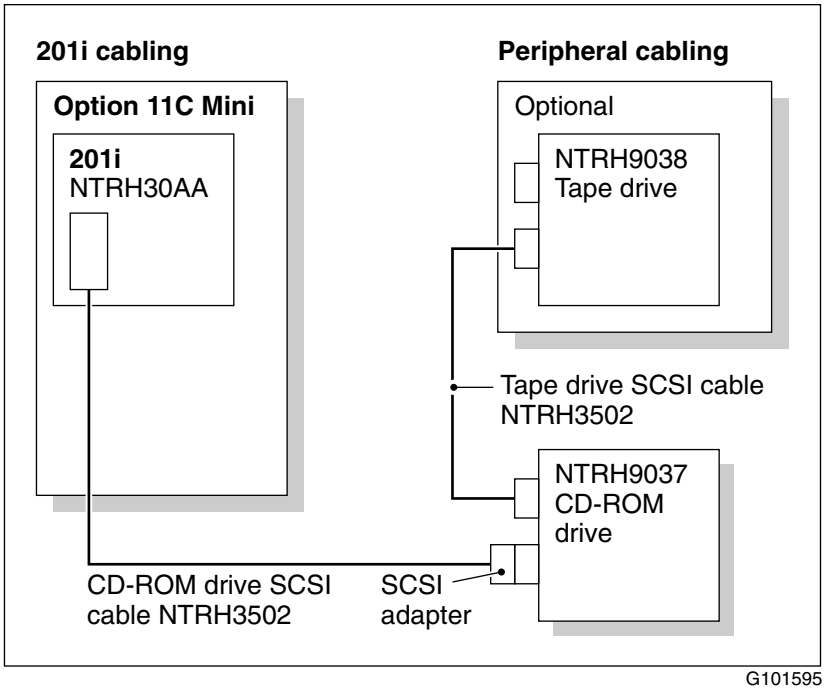
To connect the CD-ROM and tape drives to the 201i server (Option 11C Mini)

1 Connect the first SCSI device as follows:

IF the first device is the	THEN
CD-ROM drive	do the following: **a** Attach the A0769312 SCSI adapter to the CD-ROM drive. **b** Connect the NTRH3502 SCSI cable you installed earlier on the Option 11C Mini to the SCSI adapter on the CD-ROM drive.
tape drive	connect the NTRH3502 SCSI cable you installed earlier on the Option 11C Mini to the tape drive.

2 Connect an additional device in a daisy chain if required, using either the SCSI cable supplied with the device or an NTRH3502 cable.

The following diagram shows cable connections, where the CD-ROM drive is the first device:



3 Connect the power cord for each device.

4 Power up the devices.

What's next?

Connect the 201i server to the ELAN and CLAN. See page 110.

Connecting the 201i server to the switch, ELAN, and CLAN

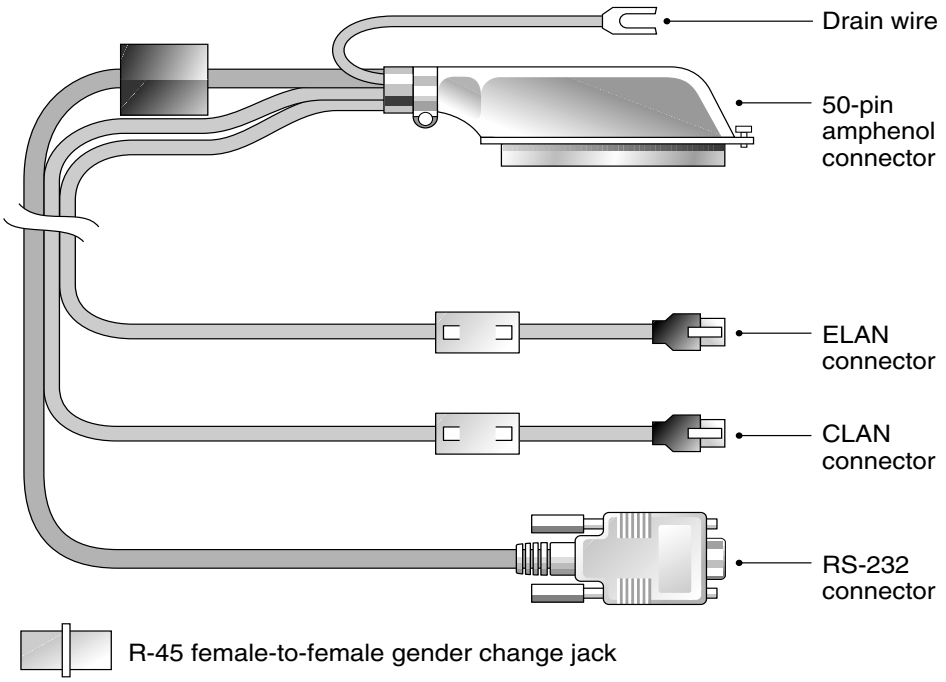
Introduction

The CLAN and ELAN connections are established by using the 201i server's multi I/O cable. The CLAN and ELAN connectors support the following network protocols:

- CLAN: 10- or 100Base-T Ethernet
- ELAN: 10Base-T Ethernet

See the following diagram:

Multi I/O cable NTRH0912



Note: If you need more than 3 m (10 ft) of multi I/O cable, use the supplied R-45 female-to-female gender change jacks to attach additional cable. A maximum of 76.2 m (250 ft) is supported.

G101441

To establish the switch and network connections

1 Do one of the following:

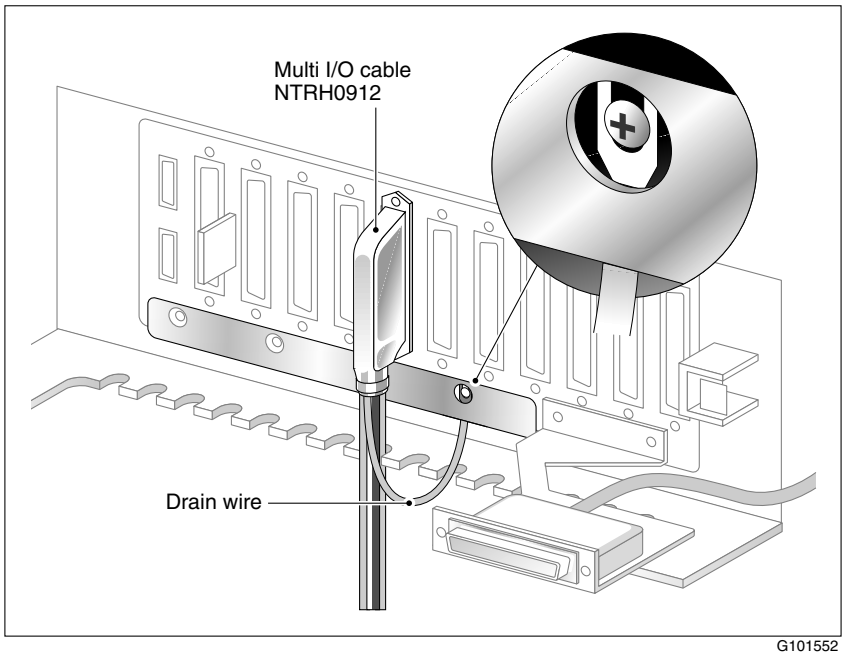
IF you are installing the 201i server in the	THEN
Option 11C	connect the 50-pin amphenol connector on the multi I/O cable (NTRH0912) to the high-density connector associated with the left slot occupied by the 201i server.
Option 11C Mini	ensure that the 50-pin amphenol connector on the multi I/O cable (NTRH0912) is connected to the high-density connector associated with the left slot occupied by the 201i server.
Meridian 1	ensure that the 50-pin amphenol connector on the multi I/O cable (NTRH0912) is connected to the newly installed backplane cable (NTRH3501) on the I/O panel at the rear of the switch.

Note: Ensure that the cable is securely fastened.

2 Connect the amphenol connector's drain wire as follows:

- Option 11C or Meridian 1: to the nearest backplane grounding bolt on the switch

  The following diagram shows drain wire connection on the Option 11C.



- Option 11C Mini: to a screw on the back of the cabinet

  Note: For a diagram, see page 83.

3 Connect the connector on the multi I/O cable that is labeled as ELAN to the switch's network hub.

4 If CLAN is required, connect the connector on the multi I/O cable that is labeled as CLAN to the CLAN 10 or 100Base-T compliant network hub.

What's next?

Connect the modem. See page 113.

Connecting the modem

Introduction

The modem must be connected to the 201i server if

- you want to administer the 201i server from a remote location
- you need assistance from Nortel Networks technical support

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

To connect the modem

1. Ensure the DIP switches are set as described in “Setting the modem DIP switches” on page 89.
2. Attach the serial cable as follows:
   a. Connect the 25-pin male end of the serial cable to the modem.
   b. Connect the 9-pin female end to the RS-232 COM1 connector on the multi I/O cable.

   Ensure that you secure the connections using the serial cable connectors’ built-in screws.
3. Connect one end of the RJ-11 phone cord to the line jack on the modem and the other end to an analog jack.

CAUTION

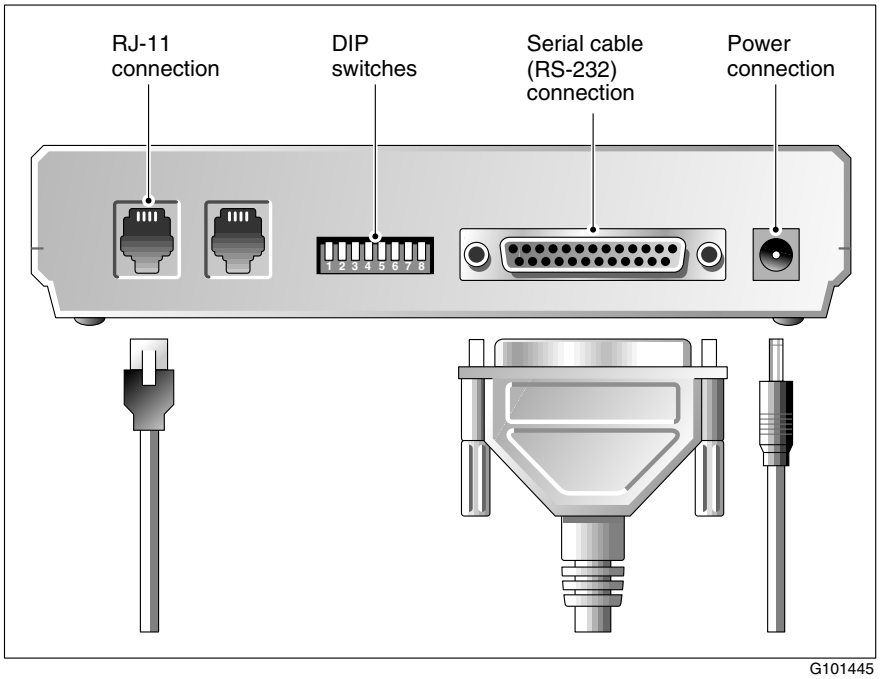
Risk of equipment damage

Connect the modem to an analog line only. The use of a nonanalog line (for example, digital or Multiline) will damage the modem.

4. Plug the power cord into an electrical outlet with an isolated ground.

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

Result: The back of the modem appears similar to the following:



6 Power on 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.

What's next?

Lock the 201i into position, and observe the startup process. See page 115.

Completing the installation

Introduction

To complete the installation of the 201i server, lock the 201i into position. The server starts up automatically.

To complete the installation and start the 201i server

Note: Ensure that the switch in which the 201i is installed is powered on.

1. Ensure that all peripheral devices are powered up (including the IPE shelf).
2. Push the 201i server gently but firmly until it is flush with the backplane.

   Result: The 201i server beeps for three seconds to indicate that power is being received.
3. Close the lock latches to secure the 201i server to the backplane.
4. Ensure that the power status LED is lit.
5. Watch the HEX display on the 201i server.

   The HEX display shows T:01 through T:08, and then HOST. This takes about 13 seconds.
6. When the following menu appears on the monitor, select option 1 to boot Windows NT:

   ```
   Select one of the following:
   ---------------------------
   1 Windows NT 4.0 Server (Default within 30 secs)
   2 Windows NT 4.0 Server (VGA mode)
   3 Load Previous Operating System on C:

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

   The Windows NT boot sequence begins and communication with the switch occurs. The HEX display shows NT (for about 30 seconds), followed by OK.

   Note: Before OK appears, one of the following messages might appear, but not for more than one second: `CDLN`, `C:01`, or `C:02`. This is normal operation.

   If OK does not appear, refer to Part 5 of this binder for troubleshooting instructions.
7. Ensure that the Windows NT logon window appears on the monitor.

   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 at any time it is necessary to restart the server, use the following procedure.

To restart the server

1. Press Ctrl+Alt+Delete 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 then restarts.

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Installation and Configuration
Part 2: 201i Server Hardware Installation

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Publication number:	555-7101-220
Product release:	1.07
Document release:	Standard 1.0
Date:	October 2000

Printed in the United States of America

NORTEL NETWORKS™