555-7101-217

CallPilot

Installation and Configuration
Part 2: 1001rp 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 the *CallPilot 1001rp Server Hardware Installation* is released.

Contents

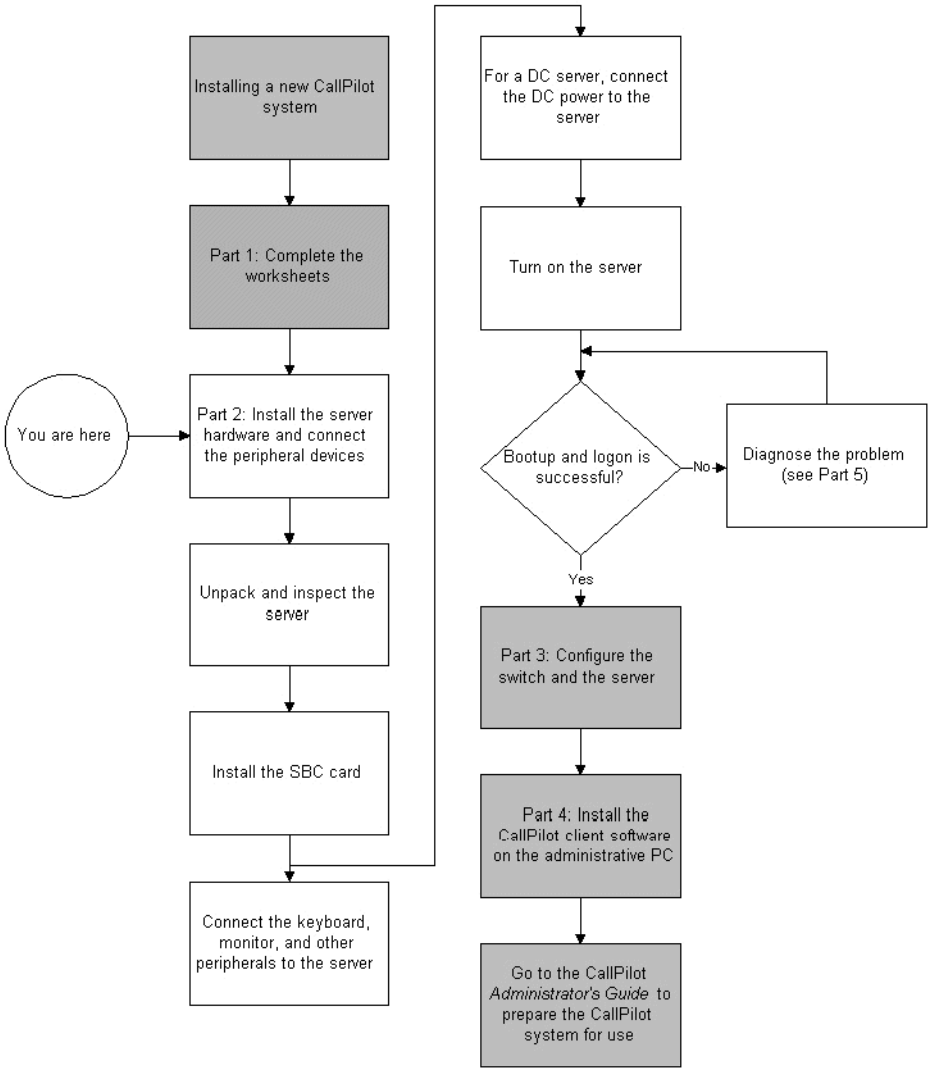
Chapter 1

Before you begin

In this chapter

Installation flowchart

The following flowchart shows the steps to complete in Part 2: 1001rp Server Hardware Installation.



Site inspection checklist

Introduction

Before you start, ensure that the following items have been checked. Use this checklist to inspect the site for the 1001rp server installation.

Check	Description
	The area is clean and clear of debris.
	There is adequate space for equipment.
	Desk, shelf, or table space is available for the server SVGA monitor, keyboard, mouse, and modem.
	There is room around the equipment for adequate air flow for ventilation.
	There are no heat sources near the equipment.
	There is adequate space for access to the front, side, and rear panels of the server.
	The area is isolated from strong electromagnetic fields and electrical noise sources (air conditioners, large fans, motors, radio or TV transmitters, or high-frequency security devices).
	There are adequate grounded electrical outlets or power bars for all the equipment. There is one outlet for each of the following components: ■ server ■ monitor ■ modem power cord ■ CLAN hub power cord (CLAN is optional) ■ PC client and monitor
	There are adequate grounded electrical outlets or power bars for the ELAN hub power cord.

Customer-supplied equipment checklist

Introduction

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 Installation 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 that can connect Desktop Messaging users to the server.
	A hub for the CLAN if a CLAN is present (or an appropriate alternative).
	Jacks and a cable ready to connect the server to the CLAN. CLAN is optional.
	A UPS for the server.
	Switch line card (see switch hardware and software requirements in Part 3 of this Installation binder).
	A TCP/IP-based ELAN that connects the switch and the server. The administrative PC can also be on the ELAN or the CLAN.
	Ethernet connections ready at the Meridian 1 switch (cables and Ethernet transceivers/MAUs).
	A hub for the ELAN if applicable (or an appropriate alternative).
	An ELAN hub power cord.
	(Optional) A cable ready to connect the ELAN to the customer WAN.

Required parts from Nortel Networks

Standard items

When a customer orders a CallPilot system, certain parts are standard items for the features or switch-connectivity specified. These are marked in the table below as a standard item.

Orderable options

Customers order some items as options. These are marked in the table below as an orderable option. The orderable options listed in this section are not in the CallPilot shipment unless they were ordered.

Check	Description	Standard item or orderable option	Part number
Common items			
	Keycode printed on a 4” x 4” label that also lists the purchased features	standard item	n/a
	CallPilot server	standard item	n/a
	Keyboard	standard item	NTRH9048
	Mouse	standard item	NTRH9014
	SVGA 14” monitor	standard item	NTRH9011
	MPB16-4 board(s)	standard item	NTRH20BA
	MPC-8 card(s) if required to provide the number of channels purchased for CallPilot	standard item	NTRH01AA
	SCbus cable	standard item	NTRH2011
	Modem for Remote Access	orderable option	NTRH9016

Check	Description	Standard item or orderable option	Part number
Additional items for Meridian 1			
	MGate card(s)	standard item	NTRHB18CA
	MGate Dual Connect cable(s) if required (see Part 3 of this Installation binder for cabling requirements)	standard item	NTRH2013
	MGate Single DS30XV Interconnect cable(s) if required (see Part 3 of this Installation binder for cabling requirements)	standard item	NTRH2012
Additional items for MSL-100/DMS-100			
	Dialogic DTI/480SC board(s)	standard item	NTRH9065
	T1 Cable(s)	standard item	A0788107
	T1 card(s)	orderable option	NTRH9065
	SMDI Link Modem Connection equipment (if the switch has an IOC shelf and is more than 15.2 m or 50 feet from the server) ■ General DataComm modems (2 modems)	orderable option	A0620530
	■ IOC cable	orderable option	(for newer IOC shelf model, use NT0X96HJ; for older IOC shelf model, use NT0X96EH)

Check	Description	Standard item or orderable option	Part number
	Note: A cable is also required to connect the two modems. Pinout information for this cable is provided in Part 3 of this Installation binder. This cable is created or supplied by the customer or installer.	n/a	n/a
	SMDI Link Modem Connection equipment (if the switch has an IOM and is more than 229 m or 750 feet from the server)		
	■ General DataComm modems (2 modems)	orderable option	A0620530
	■ Modem cable for connection to CallPilot	orderable option	TBD
	■ IOM cable	orderable option	NT0X96LU
	■ Smart Connector	orderable option	NTFX34AA
	Note: A cable is also required to connect the two modems. Pinout information for this cable is provided in Part 3 of this Installation binder. This cable is created or supplied by the customer or installer.	n/a	n/a
	■ DB9 (F) to DB25 (M) Null Modem cable	orderable option	A0601464
	■ IOC cable	orderable option	(for newer IOC shelf model, use NT0X96HJ; for older IOC shelf model, use NT0X96EH)

Check	Description	Standard item or orderable option	Part number
	SMDI Link Direct Connection equipment		
	■ DB9 (F) to DB25 (M) Null Modem cable	orderable option	A0601464
	■ IOM cable	orderable option	NT0X96LU
	■ Smart Connector	orderable option	NTFX34AA
Additional items for Lucent Definity Generic 3 (2-wire port type)			
	VB-2009 card(s)	standard item	NTRH9060
	VTG cable(s) (included in VB2000 card package)	standard item	A0788198
	46 m (150 feet) Switchboard cable(s)	standard item	A0795111
Additional items for the following Lucent switches (4-wire port type): System 75, System 85, Definity Generic 1, Definity Generic 3			
	VB-2001 card(s)	standard item	NTRH9056
	VTG cable(s) (included in VB2000 card package)	standard item	A0788198 (orderable option)
	46 m (150 feet) Switchboard cable(s)	standard item	A0795111
Additional items for the following Mitel switches: SX-200D, SX-200 Light, SX-2000 Light, SX-2000 S, SX-2000 VS			
	VB-2007 card(s)	standard item	NTRH9059
	VTG cable(s) (included in VB2000 card package)	standard item	A0788198
	46 m (150 feet) Switchboard cable(s)	standard item	A0795111

Check	Description	Standard item or orderable option	Part number
Additional items for the following Rolm switches: S8000 CBX, 9000 CBX, 9751 CBX			
	VB-2002 card(s)	standard item	NTRH9057
	VTG cable(s) (included in VB2000 card package)	standard item	A0788198
	46 m (150 feet) Switchboard cable(s)	standard item	A0795111
Software media			
	CallPilot Server CD	standard item	NTUB40AC
	Web server CD (if Web Messaging was purchased)	standard item	NTUB45AC
	CallPilot Admin Client CD	standard item	NTUB41AC
	CallPilot Language Prompts CD	standard item	NTUB44AC
	CallPilot Desktop Messaging CD	standard item	NTUB42AC
	CallPilot Performance Enhancement Packages (PEPs) CD (optional)	standard item	NTUB43AC
	Windows NT OS Recovery CD. This is required for a customer-site installation. It is only required if you need to reinstall the software.	standard item	NTRH8027
	Windows NT Install CD	standard item	NTRH8033
	Emergency Repair Disk (blank diskette)	standard item	NTR3R9501
	Application Server Driver CD	Standard item	NTRH8101

Check	Description	Standard item or orderable option	Part number
	SCSI RAID driver disk and configuration disk. This is not required for initial installation. It is only required if you need to reinstall the software.	standard item	NTRH8003
Documentation			
	CallPilot Installation and Maintenance documentation binder ■ English ■ French	standard item	 NTRG10AD NTRG10BD
	CallPilot documentation CD	standard item	NTRG19AC

Required tools and additional materials

Introduction

Use this checklist for the tools and materials you need to perform installation, maintenance, and diagnostics 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 the interior of a 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, installed options, and other information.
	null modem serial cable (useful for troubleshooting)
	laptop computer and CD-ROM drive (to read documentation on CD and to connect directly to the server for troubleshooting)

1001rp physical dimensions

Height	31 cm (12.25 inches)
Width	
■ with rackmount faceplate	48.3 cm (19 inches)
■ without rackmount faceplate	42.88 cm (16.88 inches)
Depth	
■ without handles	49.5 cm (19.5 inches)
■ with handles	53.3 cm (19.5 inches)
Weight of fully loaded system	45.5 kg (92 lbs)

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
- RAID software, if this option is included with the server
- pcANYWHERE32 version 8.0

CAUTION

Risk of impact to CallPilot response time

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

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 the computer and 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.
- When handling components, protect the server from electrostatic discharge by wearing an antistatic wrist strap attached to an unpainted metal surface on the switch.

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 regarding known risks related to hardware installation and handling.

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.

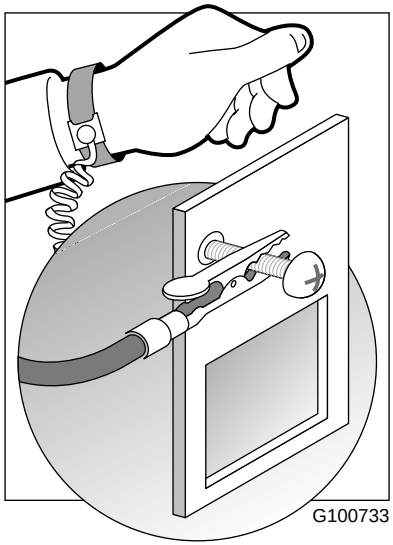
ATTENTION

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 an 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

Nortel Networks recommends taking these precautions before implementing 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.

Installing boards

When installing boards on the server, remember the following details:

- The backplane is flexible and supported with stand-offs.
- Board slots resist connector insertion.
- Firm, steady force seats a board in its slot properly.
- Boards seat with friction followed by a solid stop.
- External connector plates, attached to add-in boards, are seated in the rear panel and secured with a screw.

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 hard drives

Note: Refer to Part 5 (hardware maintenance) of this binder for detailed instructions.

- In a non-RAID system, perform a proper system shutdown and then remove the drives.
- In a RAID system, the drives are hot-swappable and can be removed without a system shutdown.

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

Unpacking and inspecting the server hardware

In this chapter

Unpacking procedure

Introduction

Follow this procedure to unpack the server and peripherals.

WARNING

Risk of personal injury

The 1001rp CallPilot server weighs approximately 34 kg (75 lb) as shipped from manufacturing. To prevent personal injury, ensure that you have someone help you to unpack and position the server.

To unpack the equipment

1. Carefully open the cardboard carton containing the server.
2. Remove the server from the carton and set it on the floor.
3. Remove the top cover. The server has been shipped with protective foam.

CAUTION

Risk of equipment damage

Damage might result to the server if the protective foam is not removed and the server is powered up.

4. Carefully remove the foam and replace the top cover.
5. Carefully open the cartons containing the SBC card, monitor, keyboard, mouse, modem, and ELAN hub (if supplied), and set the peripherals aside.
6. Put all manuals, CD-ROMs, operating system disks, any disks for peripherals, and the Windows NT emergency repair disk in a safe place.
7. Save all packing materials and cartons in case you must return any equipment to the carrier.
8. As you unpack each item, check it off against the packing list.

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 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.

To report a DOA

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)
- 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 information:

- the distributor's address
- the 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 Nortel Networks 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 in 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 the 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.

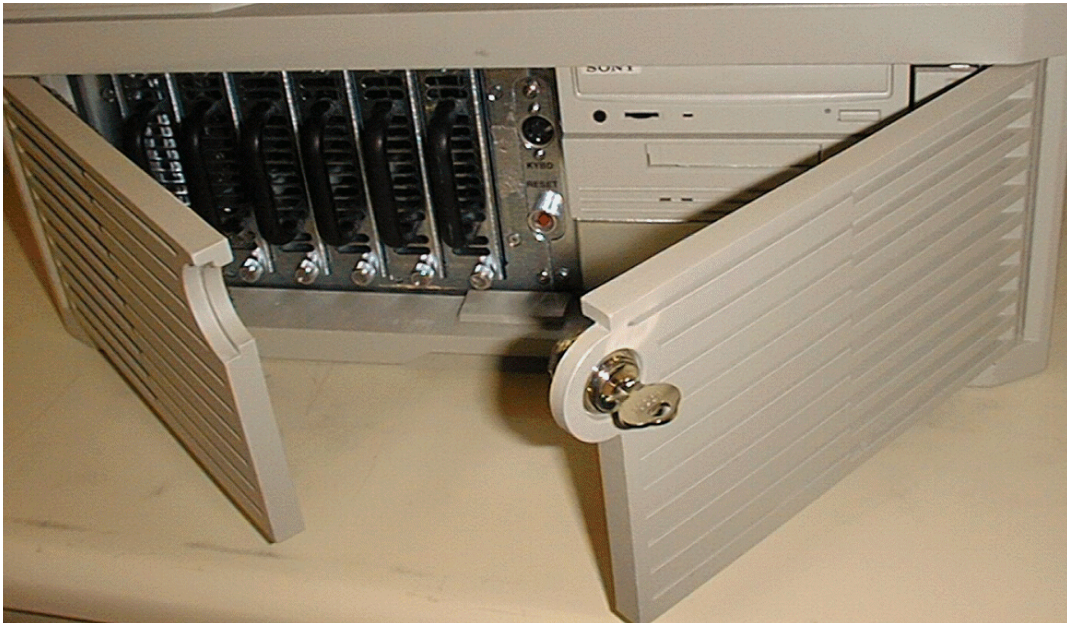
Both orders require the original purchase order so that the specific processing and criteria can be applied.

Accessing the server’s front panel

Unlock the front panel doors

Two locked doors on the front of the server cover the front panel, including the CD-ROM drive and tape drive. Unlock these doors.

These doors are part of the front bezel, which covers the front of the server. You must remove the front bezel if you are moving the server.



To remove the front bezel

CAUTION

Risk of equipment damage

Do not attempt to move or lift the server before removing the front bezel; the server can disengage from the bezel and fall.

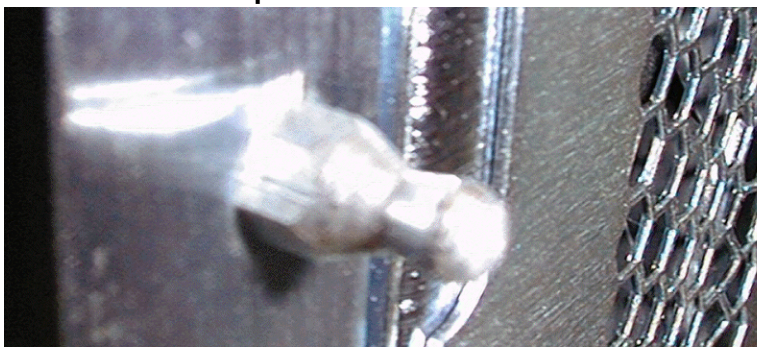
1. Unlock and open the double doors of the front bezel.
2. Firmly grasp the bezel by the hand-holds on either side of the chassis.
3. Pull the bezel from the chassis.

To replace the front bezel

When the CallPilot server installation is completed and the server is in its final location, replace the front bezel.

1. Align the front bezel with the ball studs located at each faceplate corner. See "Ball stud on the faceplate" on page 38 and "Groove on the bezel" on page 38.
2. Apply pressure evenly until the bezel snaps onto each ball stud.
3. Close the double doors of the front bezel and lock it into place.

Ball stud on the faceplate

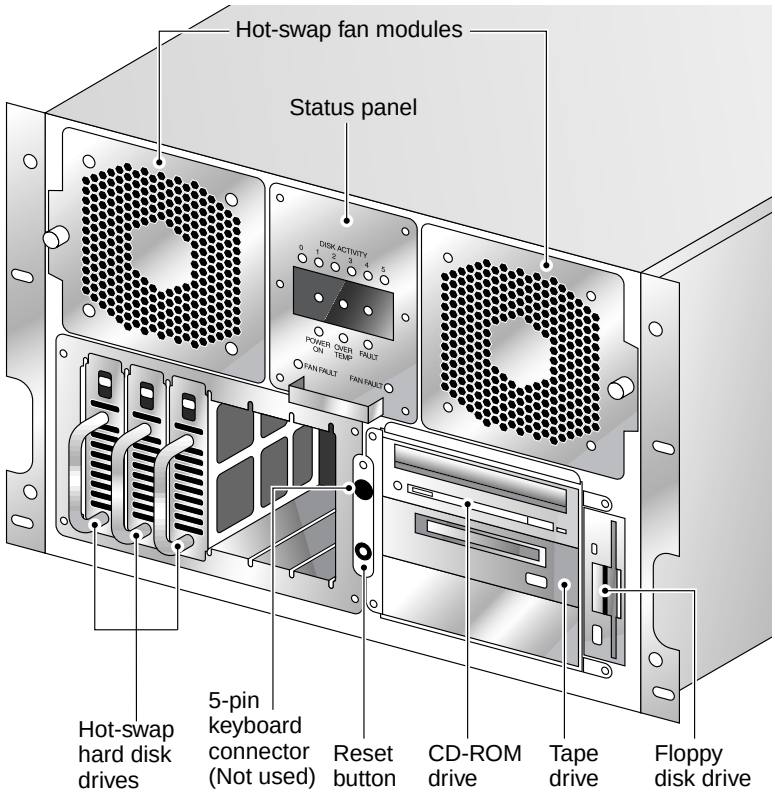


Groove on the bezel

Front panel features

1001rp server front view (without the front bezel)

The front view of the 1001rp server chassis shows redundant dual fans to the left and the right of the status panel. The left drive bay holds six SCSI hard drives with hot-pluggable carriers. The media drive bay, located to the right, houses the CD-ROM, tape drive, and floppy drive.



Alarm board

The Alarm board is located under the baseboard. It connects to the status display panel on the front.

Environmental specifications

Introduction

The following are environmental specifications for the 1001rp server. The “Non-operating” label under the Condition column refers to the specifications during shipping or storage, or both.

Parameter	Condition	Specification
Temperature	Operating	+ 5° C to + 35° C
	Nonoperating	- 40° C to + 70° C
Humidity	Operating	5% to 95% @40° C, non-condensing
	Nonoperating	0% to 95% @ 40° C, non-condensing
Shock	Operating	1.25 Gs, 10 ms (10.0 Gs, 11 ms in the appropriate chassis)
	Nonoperating	30.0 Gs, 10 ms (40.0 Gs, 11 ms in the appropriate chassis)
Vibration	Operating	0.25 Gs @ 5 Hz to 100 Hz (1.5 Gs over 5 Hz to 100 Hz in the appropriate chassis)
	Nonoperating	5 Gs @ 5 Hz to 100 Hz
Altitude	Operating	4572 m (15 000 feet)
	Nonoperating	15 240 m (50 000 feet)

Inspecting the chassis interior

Introduction

To ensure that the system components are connected properly, perform a visual check for loose boards or foreign matter in the chassis. Be sure to inspect the chassis before you continue with the installation.

To inspect the chassis

CAUTION

Risk of equipment damage

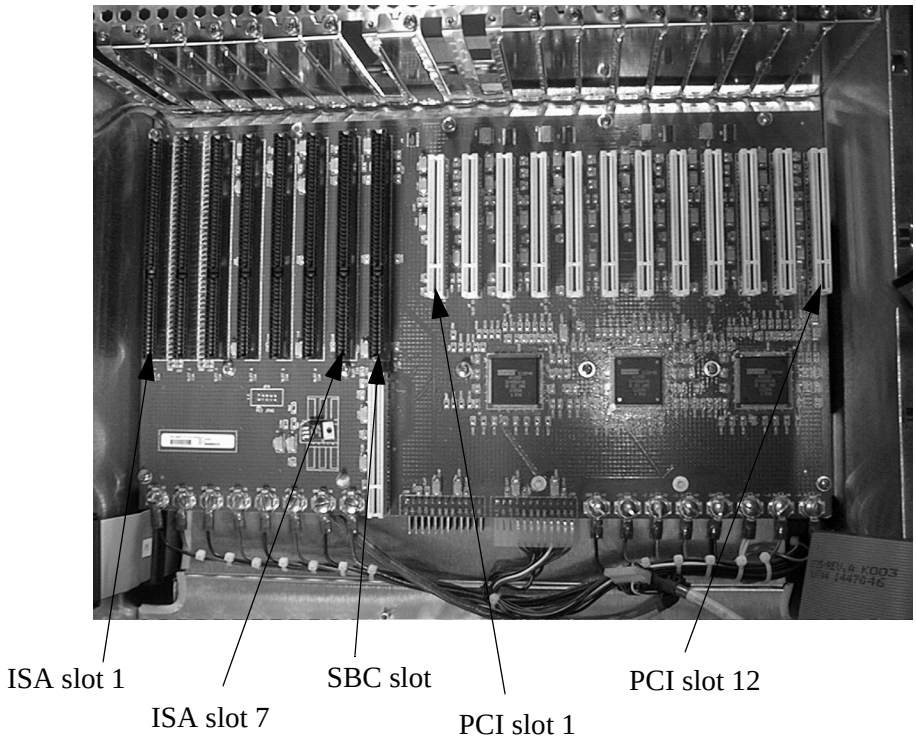
Use an ESD wrist strap to protect static-sensitive components.

1. Remove the screws securing the top cover of the chassis.
2. Remove the cover.
3. Clip the lead from your ESD wrist strap to an unpainted section of the chassis.
4. Carefully check all the cards to ensure they are fully seated on the baseboard.
5. Check for any loose wires or foreign objects, such as loose screws, inside the chassis.
6. Review the slot locations (see “PCI and ISA slot locations” on page 42).

PCI and ISA slot locations

Overhead view of empty server showing PCI and ISA slots

In the following picture, the ISA slots are on the left and the PCI slots are on the right. For slot assignments, see "Slot assignments" on page 43. You must be able to identify slot locations for later steps in the CallPilot installation.



Slot assignments

Introduction

The following table shows the slot assignments for each board depending on the switch connection.

Expansion slot	Slot assignments depending on switch connection			
	Meridian 1	**MSL-100/ DMS-100**	**Lucent, Mitel, or Rolm (DSE)**	**Matra (analog)**
ISA Slot 1	Not used	Not used	VB2000 card #7 (optional)	Not used
ISA Slot 2	Not used	Not used	VB2000 card #6 (optional)	Not used
ISA Slot 3	Not used	Not used	VB2000 card #5 (optional)	Not used
ISA Slot 4	Not used	Not used	VB2000 card #4 (optional)	Not used
ISA Slot 5	Not used	Not used	VB2000 card #3 (optional)	Not used
ISA Slot 6	Not used	DTI/480SC board #2 (optional)	VB2000 card #2 (optional)	Not used
ISA Slot 7	Not used	DTI/480SC board #1	VB2000 card #1	Not used
SBC Slot	Single Board Computer	Single Board Computer	Single Board Computer	Single Board Computer

Expansion slot	Slot assignments depending on switch connection			
	Meridian 1	**MSL-100/ DMS-100**	**Lucent, Mitel, or Rolm (DSE)**	**Matra (analog)**
PCI Slot 1	Reserved for COM1 and COM2 I/O Bracket	Reserved for COM1 and COM2 I/O Bracket	Reserved for COM1 and COM2 I/O Bracket	Reserved for COM1 and COM2 I/O Bracket
PCI Slot 2	ELAN Network Card	Not used	Not used	Not used
PCI Slot 3	CLAN Network Card	CLAN Network Card	CLAN Network Card	CLAN Network Card
PCI Slot 4	MPB16-4 #1	MPB16-4 #1	MPB16-4 #1	MPB16-2T #1
PCI Slot 5	MPB16-4 #2 (optional)	MPB16-4 #2 (optional)	MPB16-4 #2 (optional)	MPB16-2T #2 (optional)
PCI Slot 6	Not used	Not used	Not used	TBD
PCI Slot 7	Not used	Not used	Not used	TBD
PCI Slot 8	Not used	Not used	Not used	TBD
PCI Slot 9	Not used	Not used	Not used	TBD
PCI Slot 10	Not used	Not used	Not used	TBD
PCI Slot 11	VGA Card (Monitor connection)	VGA Card (Monitor connection)	VGA Card (Monitor connection)	VGA Card (Monitor connection)
PCI Slot 12	PCI RAID Controller (optional)	PCI RAID Controller (optional)	PCI RAID Controller (optional)	PCI RAID Controller (optional)

IRQ mapping table

Introduction

The following table displays the assignments for each Interrupt Request Line (IRQ) with the associated slot or device. You do not need this information for installation, but you might need it for troubleshooting.

Note: IRQs 9, 10, 11, and 15 are assigned to system PCI slots rather than to specific devices.

IRQ	Slot/Device
0	Timer
1	Keyboard
2	System / Unused
3	Serial Port 2 (COM2)
4	Serial Port 1 (COM1)
5	CLAN Network Interface (if ISA), otherwise available
6	Floppy Controller
7	Parallel Port (LPT1)
8	Real Time Clock
9	Assigned to PCI Slots 1, 7, and 12
10	Assigned to PCI Slots 2, 5, and 11
11	Assigned to PCI Slots 3, 6, and 9
12	PS/2 Mouse
13	Math Coprocessor
14	Primary EIDE Controller
15	Assigned to PCI Slots 4, 8, and 10

Chapter 4

Assembling the server and connecting the peripherals

In this chapter

Installing the Pentium II or III SBC Card

Introduction

The SBC card has been preinstalled and the BIOS configured by Nortel Networks before shipping. It has been removed and packaged separately for safe shipping purposes only. This chapter provides you with instructions on inserting the SBC card in the proper slot, installing the I/O bracket, and connecting the card.

The SBC is always installed in the SBC slot located between the ISA expansion slots and the PCI slots on the backplane. The board features headers for peripheral connections, jumper blocks, and DIP switches. It also features four DIMM sockets to support up to 512 Mbytes of Fast Page Mode memory on the Pentium III SBC.

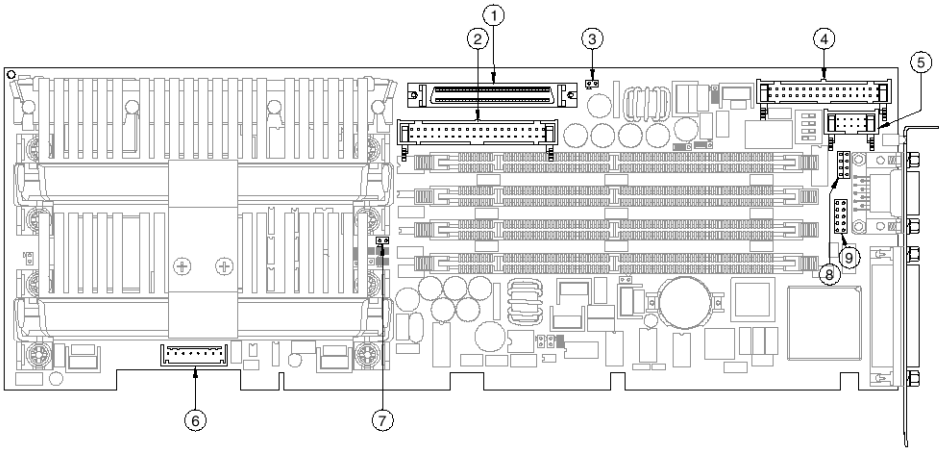
Requirements

Before installing the SBC card, gather the following tools:

- one Phillips-head screwdriver
- one antistatic wrist strap
- the SBC card

To install the Pentium II SBC card

1 Remove the card from its protective wrapping.



1. SCSI Drive
2. EIDE Drive
3. IDE/SCSI Activity LED
4. Floppy Drive
5. Serial Port 2
6. Keyboard
7. Temperature Monitor
8. USB Port 1 & Port 2
9. PS/2 Mouse (Model SP), or Serial Port 1 (Model MKP)

2 Remove the top cover of the server.

3 Remove the slot cover.

4 Identify the Switch Block (SW1) location on the SBC. The Switch Block contains four DIP switches (1-4) that you configure. These switches affect on-board ROM access, CMOS RAM, and configuration ports. Ensure dip switch number 1 is set to the closed/on position.

5 Connect the keyboard cable to the board.

6 Connect the bottom cable from the COM port I/O to connector 9 on the SBC (serial port 1). Make sure that the red stripe on the cable aligns to the top pin 1 position.

7 Align the card with its slot on the backplane and press it into place.

Result: The board seats properly in both the ISA-style and PCI-style connectors.

8 Fasten the card down with the screw provided.

9 Connect the top cable from the COM port I/O to connector 5 on the SBC (serial port 2). Make sure that the red stripe on the cable is to the left to align with pin 1.

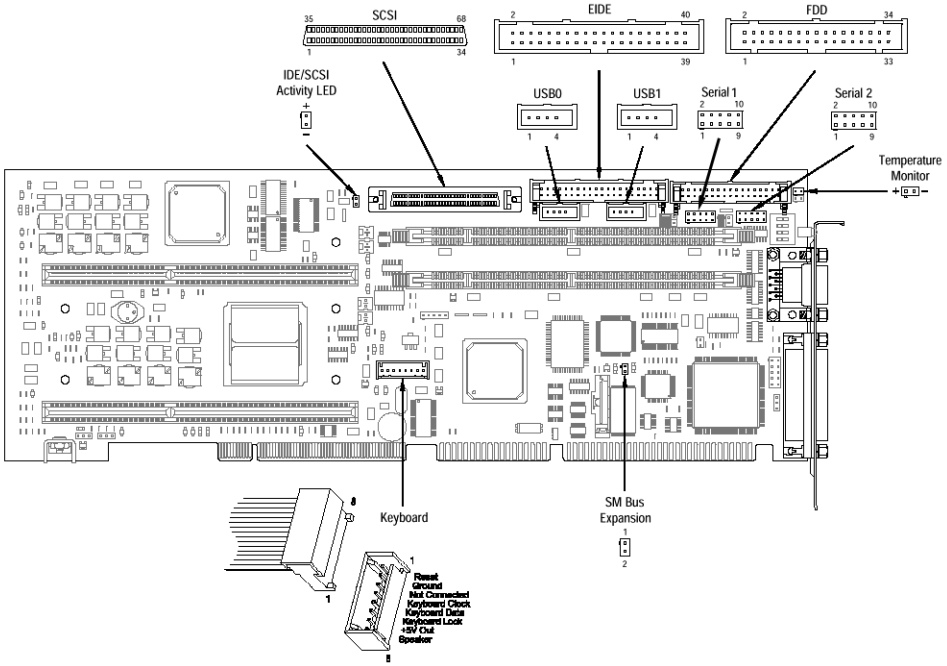
10 Connect the floppy drive cable with the red stripe to the left to align with pin 1.

11 Connect the IDE cable with the red stripe to the left to align with pin 1.

12 Replace the top cover.

To install the Pentium III SBC card

1 Remove the card from its protective wrapping.



2 Remove the top cover of the server.

3 Remove the slot cover.

4 Identify the Switch Block (SW1) location on the SBC. The Switch Block contains four DIP switches (1-4) that you configure affecting on-board ROM access, CMOS RAM, and configuration ports. Ensure dip switch number 1 is set to the closed/on position. Set dip switch number 4 to the closed/on position. This setting ensures that configuration ports are set to I/O address 370-373.

5 Align the card with its slot and before pressing into place, connect the keyboard cable to the board.

6 Press the card into place.

Result: The board seats properly in both the ISA-style and PCI-style connectors.

7 Fasten the card with the screw provided.

8 Connect the bottom cable from the COM port I/O to connector 9 on the SBC (serial port 1). Make sure that the red stripe on the cable aligns to the top pin 1 position.

9 Connect the top cable from the COM port I/O to connector 5 on the SBC (serial port 2). Make sure that the red stripe on the cable is to the left to align with pin 1.

10 Connect the floppy drive cable with the red stripe to the left to align with pin 1.

11 Connect the IDE cable with the red stripe to the left to align with pin 1.

12 Replace the top cover.

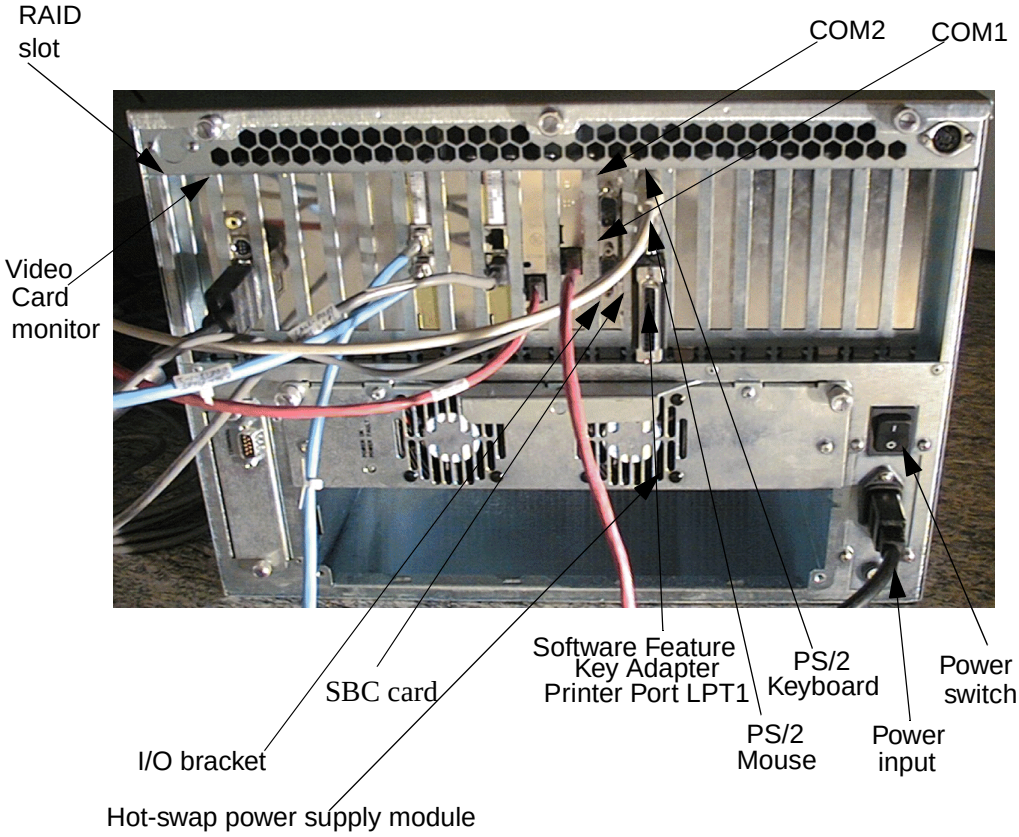
Adding peripherals to the server

Before you begin

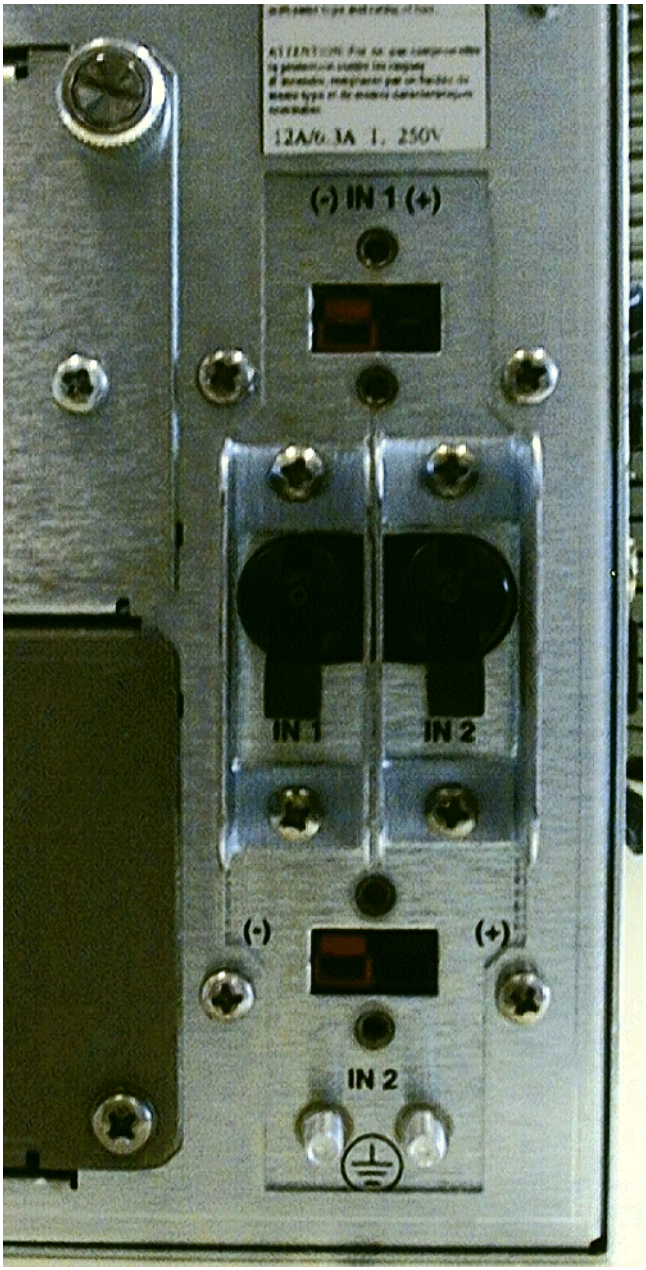
A legend is located adjacent to the peripheral connector panel at the back of the server. This legend shows the symbol for each peripheral and connector.

Rear panel connections

Note: The following picture shows the AC version of the server. For peripheral device connections, this picture applies to AC and DC versions of the server.



DC power input



Other peripheral devices

You can only install or use Nortel Networks-approved peripheral devices on your server. Installation or use of unapproved peripheral devices can result in system failure.

To connect peripherals and power cord to the server

1. Ensure that the machine is not plugged in to a power source.
2. Plug the keyboard connector into the AT keyboard connector at the rear of the chassis.

   Note: If a PS/2 connector is provided on the SBC; plug it in there.
3. Plug the mouse connector into the PS/2 mouse connector.
4. Plug in the monitor to the video connector on the video card. Tighten the screws on the connector.
5. Plug the AC cord into the back of the panel. Plug the other end into a wall receptacle or power bar.

   Note: *Do not* turn on the server at this time.

Nortel Networks software feature key adapter

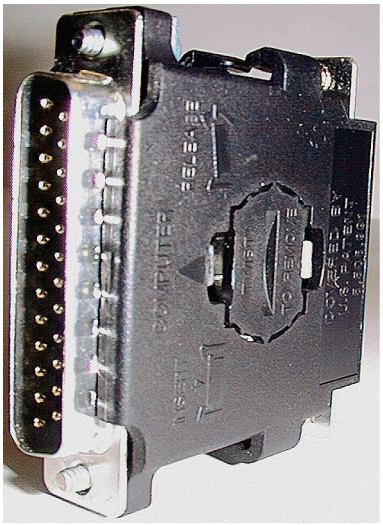
Introduction

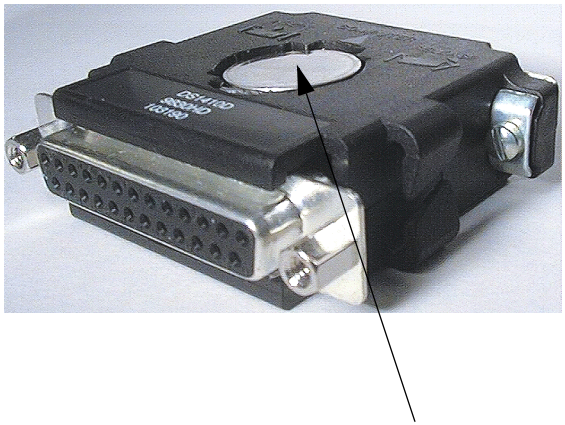
The software feature key is a security device that stores the unique serial number of the server.

The feature key is embedded in the Nortel Networks software feature key adapter, which plugs into the parallel port.

Software feature key adapter

The following illustrations show the software feature key adapter. The actual software feature key is placed in the adapter, as shown below.





Software feature key

Requirements

You require a Phillips No. 1 screwdriver for installation.

To install the software feature key adapter

1 Ensure that there is no cable connected to the parallel port.

Note: The parallel port is also known as the printer port or LPT1. It is located on the rear of the chassis. See the diagram of the rear panel in “Rear panel connections” on page 52.

2 Plug the male end of the adapter into the parallel port.

Chapter 5

Adding a modem for Remote Access Service

In this chapter

Preparing the modem for connection

Introduction

Before you can connect the modem to the CallPilot server, you must set the DIP switches. DIP switch 4 in particular must be set correctly or the CallPilot server will fail to start.

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 equipment:

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

Adding a modem for Remote Access Service

Introduction

When you add a modem to your server, you can access the server by a remote service PC. Remote Access Service (RAS) enables you to perform many activities remotely, including maintenance and diagnostics. Nortel Networks support requires RAS.

To add a modem to the server

1. Ensure that the AC cord is not plugged in.
2. Connect the large 25-pin male connector to the back of the modem. Tighten the connector screws.
3. Connect the 9-pin female connector to COM1 at the rear of the server. Tighten the connector screws.
4. Connect one end of the telephone cable to the modem RJ-11 jack labeled LINE.
5. Connect the other end of the telephone cable to the RJ-11 jack in the wall.
6. Connect the power cord to the modem and plug the other end into a wall receptacle or power bar. Turn on the modem.

Chapter 6

1001rp DC server installation

In this chapter

Overview

Introduction

This chapter details installation procedures for the DC power version of the CallPilot 1001rp server.

Safety precautions

Safety information

In DC systems, locate the service panel near the entry to the room containing the DC power system that supplies the server.

DANGER

Risk of electric shock

Procedures involving electrical connections must be performed by qualified persons only.

Please heed all displayed warning notices on power equipment and connections.

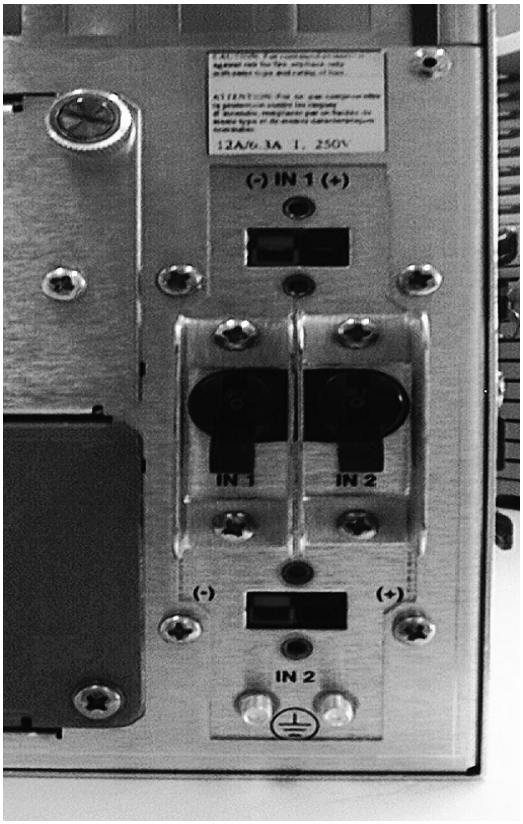
Equipment handling guidelines

External power equipment, such as an uninterruptible power supply (UPS), is often very heavy. This equipment requires special handling procedures and additional personnel for unloading and installation. Be aware of weight distribution and prevent the equipment room floor from being overly stressed.

Power and grounding guidelines for DC systems

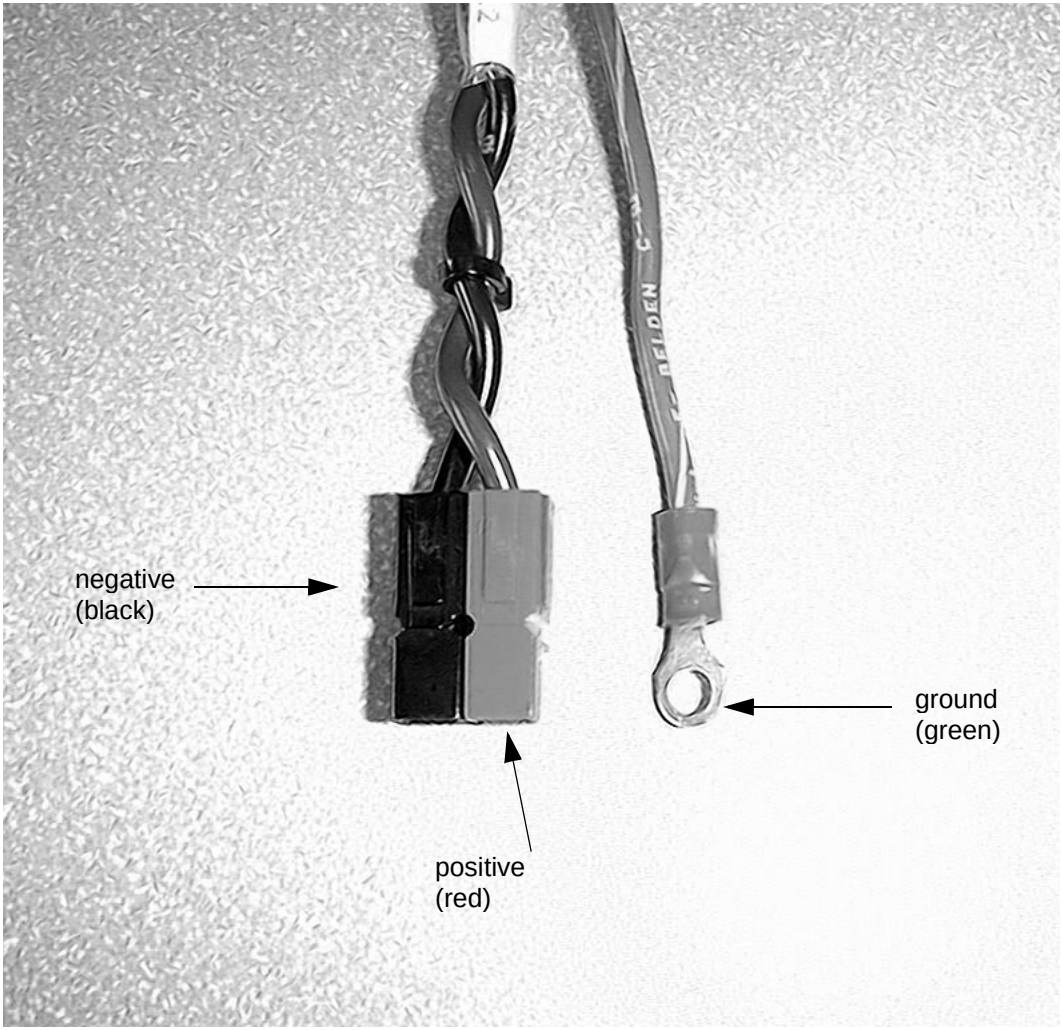
Connecting the power cable to the server

The following photograph shows the rear power connection panel of the CallPilot 1001rp DC server.



Connector cable (server connection)

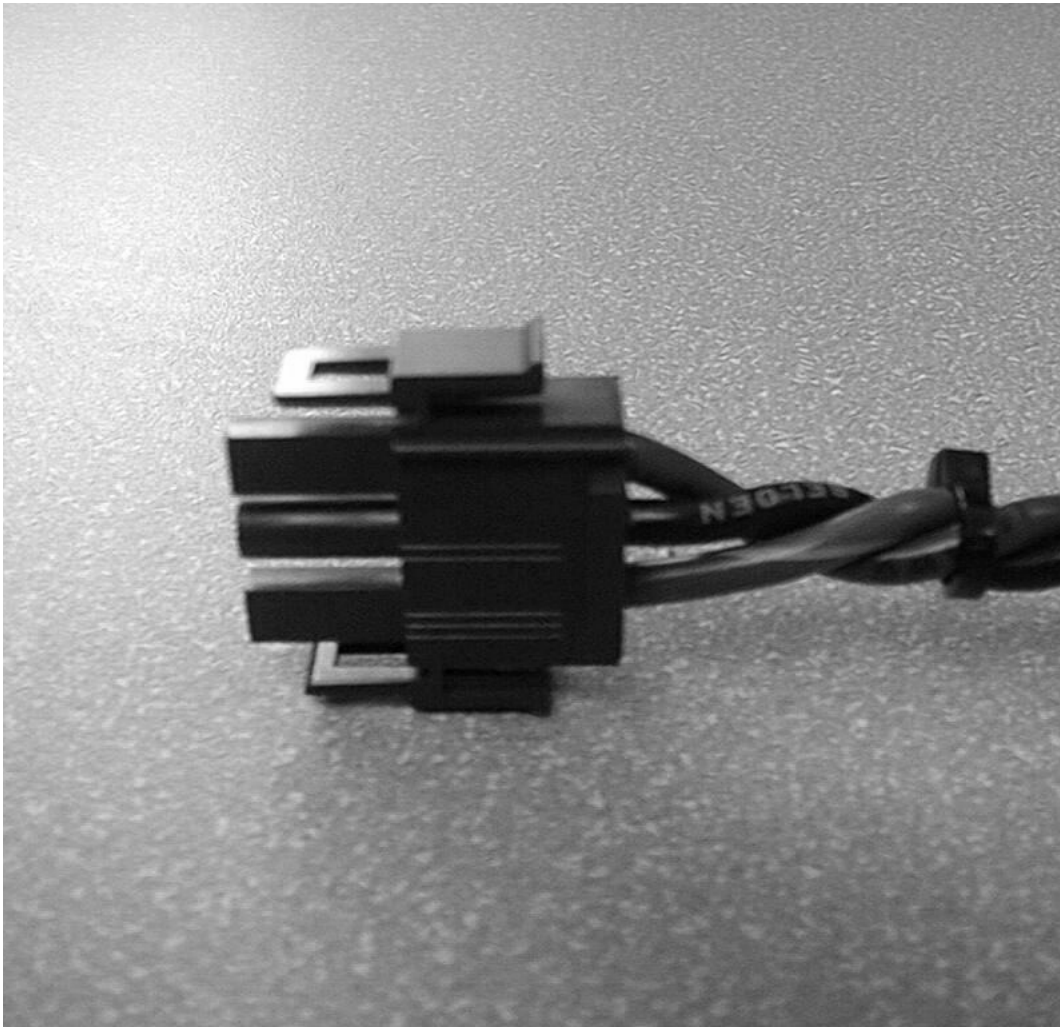
The following photograph shows the DC power cable with positive (red), negative (black), and ground (green).



Insert the positive and negative plug into the appropriate receptacles marked on the rear panel. Connect the ground wire to one of the posts at the bottom of the rear panel.

Connector cable (Power Distribution Unit connection)

The following photograph shows the keyed plug of the DC connector cable. This plug connects to the Power Distribution Unit (PDU).



Note: If you are not using a Nortel Networks-supplied PDU, snip this plug and connect the cable appropriately to your DC power plant. Remember that a red cable is positive, a green cable is the ground, and a black cable is negative.

DANGER

Risk of electrical shock

Only qualified personnel can alter electrical connections.

DC wire gauge tables

Introduction

The tables in this section specify the DC power feed wire requirements.

Cabinet and module DC feed recommended wire gauge specifications

Length	#10 AWG	#8 AWG	#6 AWG	Junction Box #4 AWG	Junction Box #4 AWG
0-30 m (100 feet)	yes	yes	yes	yes	yes
0-45 m (150 feet)	no	yes	yes	yes	yes
0-75 m (250 feet)	no	no	yes	yes	yes
0-135 m (450 feet)	no	no	no	yes	yes
0-210 m (700 feet)	no	no	no	no	yes
Over 210 m (700 feet)	no	no	no	no	no

Notes:

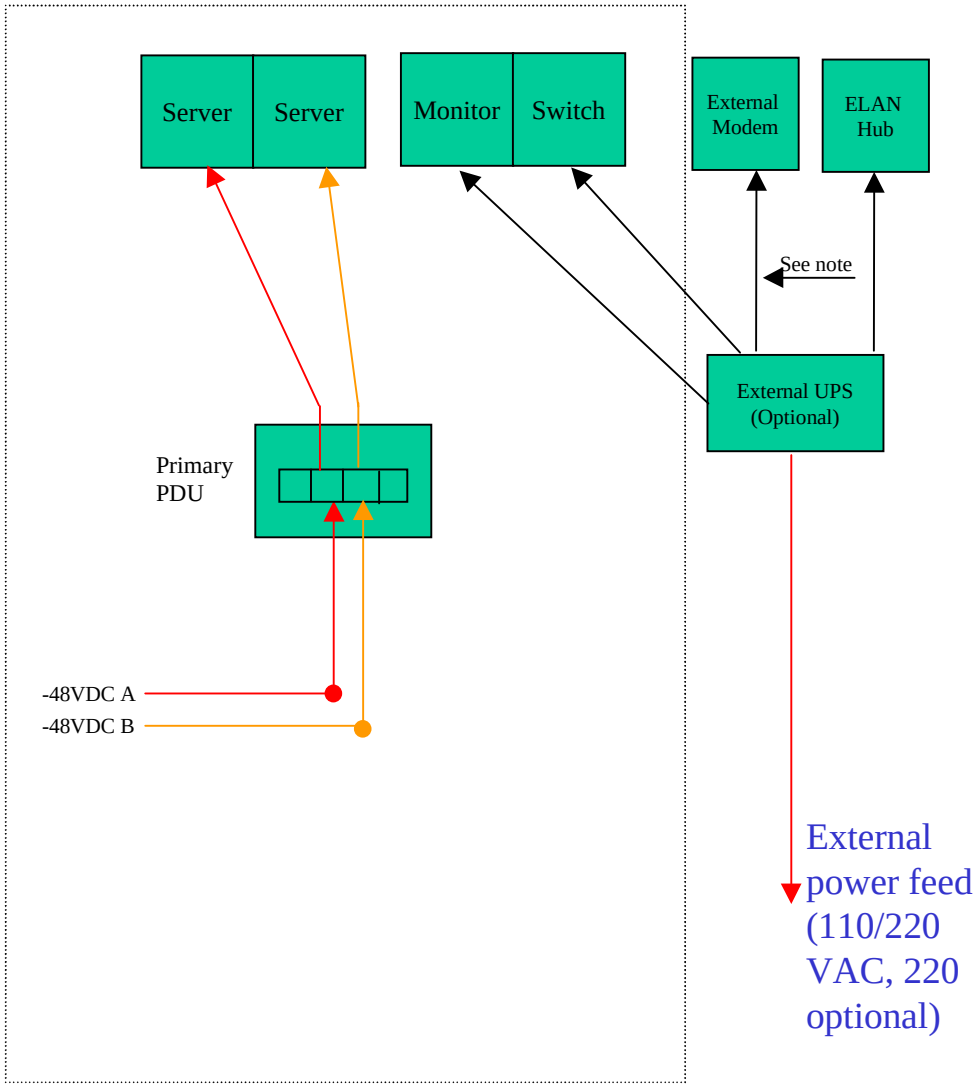
1. Cabinet and module ground wire specification is #10 AWG insulated green safety ground wire.
2. Cabinet conduit can be 1.91 cm (3/4 inch) or 3.18 cm (1-1/4 inch) and must be insulated from cabinet ground.

Metric wire conversion

AWG No.	Industry standard nominal (sq mm)	Resistance at 20 deg. C (Ohm/ 100 m)
2	35	0.05
4	25	0.08
6	16	0.13
8	10	0.20
10	6	0.33
12	4	0.63
14	2.5	1.00
16	1.5	1.40
18	1	2.00
20	0.75	2.90
22	0.5	4.60

DC rack cabling

The following diagram shows a typical rack power cabling:



-48VDC power distribution rationale

1. Minimum installation is one PDU with four -48VDC branch circuits fused at 20 amperes.
2. The installation site expects to be able to shut off any branch, and every unit at the site will continue to function properly.
3. DC-powered configuration fits into this scheme as follows:
   - Each Power Distribution Unit (PDU) receives four branch circuits.
   - Each server receives a feed from each PDU and different branch circuit.
4. In this fashion, with dual hot-swappable power supplies, there is no single point of failure in the power system. For example, you can remove any power supply, including a PDU, and everything continues to work.
5. This is applicable to either North American or European installation sites (with a 230 VAC Inverter).
6. The secondary rack supports four servers and follows a similar scheme.

Power Distribution Unit

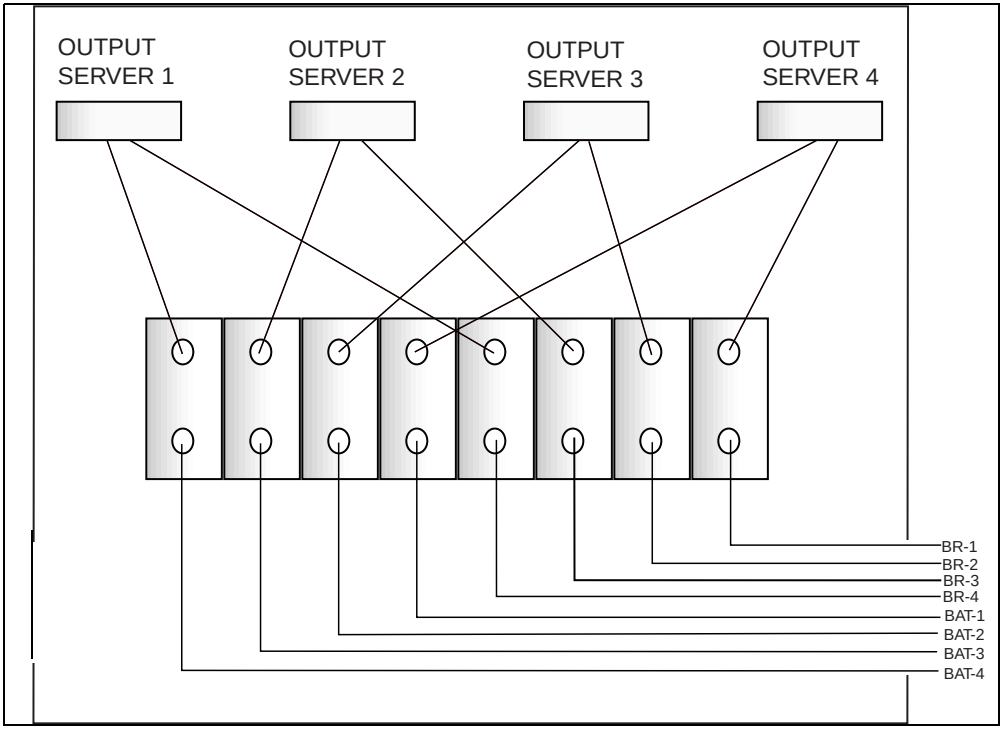
Introduction

A Power Distribution Unit (PDU) is installed in a rack that has DC-powered servers. Power from the DC supply source enters the PDU and can then be distributed to one or more servers. A single PDU can supply DC power to four DC power supply modules. A server can have either one or two power supply modules installed. The number of PDUs to install in a rack can be determined by counting the number of power supply modules in each rack.

Description

A PDU consists of eight terminal blocks within a metal enclosure. Before installing the PDU, connect the terminal blocks so that each output connector receives power from a separate -48VDC branch circuit, as shown in the following diagram. Use AWG 12 wires for these connections.

Single PDU wiring diagram



Multiple PDUs

A server operates on a single power supply module. Its total capacity is two installed power supply modules. The second power supply module is the redundant power supply module. A PDU can distribute power to a maximum of four power supply units that can be installed in two or more servers. Therefore, if there are three or four servers installed in a rack, a second PDU must be installed.

Note: The power supply module installs in the server. It does not refer to a UPS, which is a separate unit on the rack.

DC power input

DC power input into the distribution unit connects BAT-1 to BAT-4 and BR-1 to BR-4. Refer to the preceding diagrams for the location of these terminals. Connect the input wires before installing the PDU on the rack.

Bringing power and ground into the PDU

Introduction

Install BAT/BATRTN wires in pairs. Each pair of wires supplies voltages to a module through a power harness. The module harnesses are installed in the cabinet PDU and connected to the modules at the factory.

To install DC power and ground

1. If you are using a conduit, terminate the 1-1/4 or 3/4 conduit at the top rear of the cabinet or the bottom front of the cabinet using the knockouts provided. The number of wire pairs you can run in each conduit depends on the wire gauge.

   Note: To preserve ground integrity, the conduit must be insulated.

2. Select a power feed with a circuit breaker dedicated to each module and identify it with an appropriate tag.

   Note: Information about strapping will be provided in a later issue.

3. Select a wire size to suit the required feed length from the power source (see "DC wire gauge tables" on page 70).

4. Use pliers to strip one-quarter to one-half of the insulation from one end of all power and ground feed wires.

5. Undo the terminal block screws at (-) positions 0, 1, 2, and 3. Insert the red wires into terminal block positions 0, 1, 2, and 3. Secure the wires in the terminal block by tightening the screws.

6. Undo the terminal block screws at (+) positions 0, 1, 2, and 3. Insert the black wires into terminal block positions 0, 1, 2, and 3. Secure the wires in the terminal block by tightening the screws.

7. Select a #10 green wire safety ground. Attach it to the cabinet.

8. Measure the module ground continuity by touching one multimeter lead to any BATRTN terminal block connector and the other end to the GND terminal block connector. Measurement should be between 0-0.5 ohms.

Chapter 7

Starting up and shutting down the server

In this chapter

Overview

Introduction

The following table lists the installation steps to perform in this chapter.

Check	Description
	Turn on the peripheral devices and the server, and verify proper startup. See “Starting the server and logging on” on page 81.
	Shut down the server before continuing with the remaining installation steps. See “Shutting down the server” on page 82.

CAUTION

Risk of impact to CallPilot response time

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

Starting the server and logging on

To start the server and log on

1. Ensure that the modem power switch is On.
2. Turn the monitor power switch to On.
3. Press the server power switch On.

   Result: The startup process begins.
4. Allow the startup process to continue until the Windows NT logon window appears.
5. Press Ctrl-Alt-Del.

   Result: You are prompted to enter a User ID and Password.
6. Enter **Administrator** as the user ID.
7. Enter **abc123** as the password.

   Note: Change the default password **abc123** during the Configuration Wizard step, which is described in Part 3 of this Installation binder.
8. Click OK.

   Result: The Windows NT desktop appears.

To interpret the POST beep codes that your CallPilot emits, refer to the hardware maintenance guide for this server.

Dialog boxes might appear that state if CallPilot is ready to accept calls. These dialog boxes are part of the CallPilot system ready indicator feature and are not applicable until you have run the Configuration Wizard.

Shutting down the server

Introduction

Before continuing with the installation, you must shut down the server. Any time you need to power down the server, follow the procedure in this section.

To shut down the server

1. Press the ctrl, alt, and Delete keys simultaneously.

   Result: The Windows NT Security dialog box appears.

2. Select Shut down.

   Result: The Shutdown Computer dialog box appears.

3. Select Shutdown.

4. Click Ok.

   Result: The Computer Shutdown window displays the message `It is now safe to turn off your computer`.

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

   b. Click Yes or End Task.

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

   c. Click No.

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CallPilot

1001rp Installation and Configuration Server Hardware

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